

Catalog of  
**Loma Linda  
University**  
2011–2012

This is a one-year Catalog,  
effective beginning Summer Quarter 2011.



LOMA LINDA  
UNIVERSITY

Loma Linda, CA 92350

<http://www.llu.edu>

a health sciences university

## **CATALOG OF LOMA LINDA UNIVERSITY**

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## **LEGAL NOTICE**

This Catalog is the definitive statement of Loma Linda University on the requirements for admission, enrollment, curriculum, and graduation. The University reserves the right to change the requirements and policies set forth in this Catalog at any time upon reasonable notice. In the event of conflict between the statements of this Catalog and any other statements by faculty or administration, the provisions of this Catalog shall control, unless express notice is given that the Catalog is being modified.

The information in this Catalog is made as accurate as possible at the time of publication. Students are responsible for informing themselves of and satisfactorily meeting all requirements pertinent to their relationship with the University. The University reserves the right to make such changes as circumstances demand with reference to admission, registration, tuition and fees, attendance, curriculum requirements, conduct, academic standing, candidacy, and graduation.

This Catalog contains the operating policy statements for Loma Linda University's educational programs. Any deviation from these policies must be approved by University administration.

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# I

## INTRODUCTION

President's Welcome

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## President's Welcome

It is a privilege to welcome you to Loma Linda University. This is a very unique place—one that balances on the twin foundations of Faith and Science. Being a student here will expose you to a group of faculty and staff who have chosen to be part of this experience we call Loma Linda. They have chosen to work here because they share in the belief that this is a special place.

We emphasize what we call Mission-Focused Learning. This means that what we offer centers on more than producing knowledgeable professionals, because we believe that *who* you are is even more important than *what* you know. To assist in this lifelong process, we are encouraging the enculturation of our seven core values, known by the acronym JCHIEFS. These values are Justice, Compassion, Humility, Integrity, Excellence, Freedom, and Self-Control/Purity. I encourage each of you to search your own heart and find ways to strengthen these virtues in everything you do.

You also will find an incredible mixture of cultural diversity on our campus. Revel in our similarities and differences, and use each interaction to help you understand the issues that separate us. With understanding comes acceptance. And with acceptance come peace and fellowship. Use your time at Loma Linda to seek out those from other countries and cultures from whom you can learn and gain greater understanding. We will all be better as we tear down those barriers that often separate us.

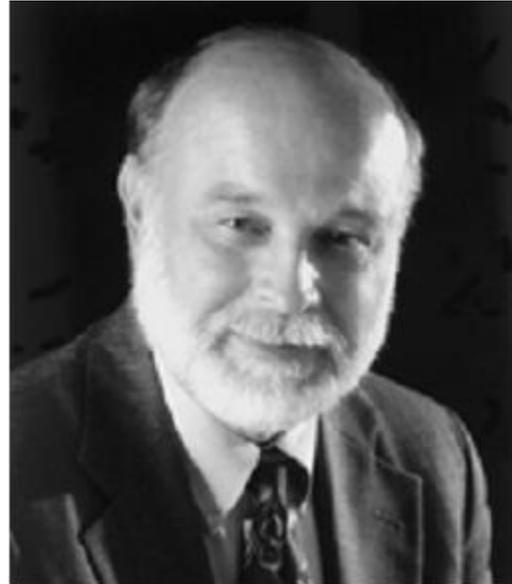
All this uniqueness is centered on the profound belief that God is here, active in the lives and experiences of each of us. Through our weekly Campus Worship, the prayers of faculty in class, and the daily interchanges across campus, I invite you to join me in getting to know Him better. Place your future in His hands. Have confidence in His leading. Seek out opportunities to fellowship and grow in His love.

Thank you for joining our campus family. I hope it will become as special to you as it has for so many of our 42,000 alumni.

Cordially yours,



Richard H. Hart, M.D., Dr.P.H.  
President  
Loma Linda University



## Programs, Degrees, and Certificates

The degree and certificate curricula at Loma Linda University are under continuous review and are, therefore, subject to change and improvement without prior notice, as the need occurs. The University also offers nondegree and short courses throughout the United States and globally to meet the continuing education and extension program needs of alumni, health professionals, and lay persons in the church and in the community. Most degree courses are approved for continuing education credit.

School-specific certificates are awarded upon completion of organized programs of study at the postsecondary level. Students register for courses through the Office of University Records, but the certificate is issued by the school, which maintains records of the certificate and its awarding. Financial aid is not available to students registered in school-specific programs. See school programs in each school for a listing of school-specific certificates available.

The Faculty of Graduate Studies oversees Ph.D. and research master's degrees, as well as combined degrees programs.

### KEY TO CODES

AH	School of Allied Health Professions	PD	Post-D.D.S. or Post-D.D.M.
PH	School of Public Health	PM	Post-master's
SD	School of Dentistry	PMD	Post-M.D.
SM	School of Medicine	PP	Postprofessional
SN	School of Nursing	*	off-campus, Canada
SP	School of Pharmacy	**	off-campus, South Africa and Thailand
ST	School of Science and Technology	***	off-campus, Guam and Hawaii
SR	School of Religion	****	off-campus, Saudi Arabia
FGS	Faculty of Graduate Studies	+	off-campus, France
IS	Interdisciplinary Studies (LLU diploma, across schools/faculties)	++	off-campus, Chile
UG	Undergraduate	+++	off-campus, Peru
PB	Postbaccalaureate	++++	off-campus, Russia
		§	Executive

<b>Program</b>	<b>School</b>	<b>Degrees/Certificates Offered</b>
Anatomy	SM	M.S., Ph.D.
Biochemistry	SM	M.S., Ph.D.
Biology	ST	M.S., Ph.D.
Biomedical and Clinical Ethics	SR	M.A., PB certificate
Biomedical Sciences	SM	PB certificate
Biostatistics	PH	M.P.H., M.S.P.H., PB certificate (basic, advanced)
Case Management	ST	PB certificate
Child Life Specialist	ST	M.S., PB certificate
Clinical Mediation	ST	PB certificate
Clinical Ministry	SR	M.A., PB certificate
Clinical Laboratory Science	AH	B.S. (formerly: Medical Technology)
Coding Specialist	AH	Certificate
Communication Sciences and Disorders	AH	B.S., M.S., Transitional M.S. (formerly: Speech- Language Pathology and Audiology)
Counseling	ST	M.S.
Counseling, Family	ST	PB certificate (See: Family Counseling)
Counseling, School	ST	PB certificate (See: School Counseling)
Criminal Justice	ST	M.S.
Cytotechnology	AH	Certificate, B.S.
Denominational Studies for Chaplains	SR	Certificate
Dental Anesthesiology, Advanced	SD	M.S.D., PD certificate
Dental Hygiene	SD	B.S.
Dentistry, General	SD	D.D.S.
Dentist Program, International	SD	D.D.S.
Diagnostic Medical Sonography	AH	Certificate
Drug and Alcohol Counseling	ST	PB certificate
Earth Science	ST	Ph.D.
Emergency Medical Care	AH	B.S.
Emergency Preparedness and Response	PH	PB certificate
Endodontics, Advanced	SD	M.S., M.S.D., PD certificate
Endodontics with Experience in Implant Dentistry	SD	M.S., M.S.D., PD certificate
Environmental and Occupational Health	PH	M.P.H.
Environmental Sciences	ST	B.S.
Epidemiological Research Methods	PH	PB certificate
Epidemiology	PH	M.P.H., Dr.P.H, Ph.D., PB certificate (basic, advanced)
Family Counseling	ST	PB certificate
Family Life Education	ST	PB certificate
Family Studies	ST	M.A., Ph.D.
Forensic Science	ST	PB certificate
Geographic Information Systems for Global Health and Development	PH	M.P.H.
Geology	ST	B.S., M.S.

Gerontology	ST	M.S.
Global Epidemiology	PH	M.P.H.
Global Health	PH	M.P.H., Dr.P.H.
Health Policy and Leadership	PH	M.P.H.
Health Care Administration	PH	M.B.A.
Health Education	PH	M.P.H., Dr.P.H.
Health Geographics and Biomedical and Data Management	PH	B.S.P.H.
Health Geoinformatics	PH	Certificate
Health Information Administration	AH	B.S., PB certificate
Health Policy and Leadership	PH	M.P.H., Dr.P.H.
Health Professions Education	ST	PB certificate
Health Promotion and Education	PH	(See: Health Education)
Health Services Research	PH	(See: Health Administration)
Health Science	IS	B.S.
Implant Dentistry, Advanced	SD	M.S., M.S.D., PD certificate
International Dentist Program	SD	(See: Dentist Program, International)
Lifestyle Intervention	PH	PB certificate
Lifestyle Medicine	PH	M.P.H.+
Marital and Family Therapy	ST	M.S.*, D.M.F.T., Ph.D.
Maternal and Child Health	PH	M.P.H.++/+++ , PB certificate
Medical Dosimetry	AH	Certificate
Medical Radiography	AH	A.S.
Medical Scientist	SM	M.D./Ph.D.
Medicine	SM	M.D.
Microbiology and Molecular Genetics	SM	M.S., Ph.D.
Natural Sciences	ST	M.S.
Nuclear Medicine Technology	AH	Certificate
Nursing	SN	A.S., B.S., M.S.** , PM advanced certificates, Ph.D., D.N.P.
Nutrition	PH	M.P.H., M.S., Dr.P.H.
Nutrition and Dietetics	AH	B.S., M.S.
Nutrition Care Management	AH	M.S. (online)
Occupational Therapy	AH	M.O.T., O.T.D.
Oral and Maxillofacial Surgery, Advanced	SD	M.S., M.S.D., PD certificate
Orthodontics and Dentofacial Orthopedics, Advanced	SD	M.S., PD certificate
Orthotics and Prosthetics	AH	M.S.
Pediatric Dentistry, Advanced	SD	M.S., M.S.D., PD certificate
Periodontics, Advanced	SD	M.S., M.S.D., PD certificate
Pharmacology	SM	M.S., Ph.D.
Pharmacy	SP	Pharm.D.
Physical Therapist Assistant	AH	A.S.
Physical Therapy	AH	M.P.T., D.P.T., D.Sc.
Physician Assistant Sciences	AH	M.P.A.
Physiology	SM	M.S., Ph.D.

Preventive Care	PH	Dr.P.H.
Program Evaluation and Research	ST	PB certificate
Prosthodontics, Advanced	SD	M.S., M.S.D., PD certificate
Psychology, General	ST	M.A.
Psychology, Clinical	ST	Psy.D., Ph.D.
Public Administration	ST	D.P.A.
Public Health Practice	PH	M.P.H. ++/+++/++++/§
Radiation Sciences	AH	B.S., M.S.
Radiation Therapy Technology	AH	Certificate
Radiologist Assistant	AH	M.S.
Rehabilitation Science	AH	Ph.D.
Religion and the Sciences	SR	M.A.
Respiratory Care	AH	B.S.****, PP B.S., certificate
School Counseling	ST	PM certificate, PPS credential
Social Policy and Social Research	ST	Ph.D.
Social Work	ST	M.S.W.
Social Work, Clinical	ST	Ph.D.
Speech-Language Pathology and Audiology	AH	(See: Communication Sciences and Disorders)
Tobacco Control Methods	PH	PB certificate

## DISTANCE LEARNING PROGRAMS OFFERED AT LOMA LINDA UNIVERSITY

### School of Allied Health Professions

- Health Information Administration (B.S.)
- Occupational Therapy (O.T.D.)
- Nuclear Medicine Technology (Certificate)
- Nutrition Care Management (M.S.)
- Radiation Sciences (B.S./M.S.)
- Radiation Therapy Technology (Certificate)
- Radiologist Assistant (M.S.)
- Respiratory Care (Blended)

### School of Dentistry

- Dental Hygiene Completion (B.S.)

### School of Public Health

- Online Executive Master of Public Health (M.P.H.)
- Health Education (M.P.H., Dr.P.H.)

## Accreditation Overview

The University is accredited as a degree-granting institution by the Western Association of Schools and Colleges (WASC). The programs of the schools are accredited by the appropriate accrediting agencies, and graduates are eligible to take the qualifying examinations of the respective state and national licensing or registration bodies and to join professional organizations. Details of accreditations are given in the individual programs and in Section VI of this CATALOG.

Founded as College of Evangelists in 1905-06, the University was chartered as College of Medical Evangelists by the state of California December 13, 1909, and was accredited by Northwest Association of Secondary and Higher Schools April 7, 1937. Accredited by WASC (Western Association of Schools and Colleges) [prior to January 1962, Western College Association] February 24, 1960, it became Loma Linda University July 1, 1961.

### ACCREDITING AGENCIES

Loma Linda University is fully accredited by the Western Association of Schools and Colleges (WASC), which may be contacted at:

Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges (WASC)  
985 Atlantic Avenue, Suite 100  
Alameda, CA 94501  
Phone: 510/748-9001  
FAX: 510/748-9797  
Web site: <[www.wascweb.org](http://www.wascweb.org)>  
Email: <[wascsr@wascsenior.org](mailto:wascsr@wascsenior.org)>

WASC is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation.

Loma Linda University is also accredited by the Adventist Accrediting Association (AAA) of the Seventh-day Adventist Church Department of Education.

In addition to WASC and AAA, the following organizations accredit specific University schools or programs:

Accreditation Council for Occupational Therapy Education (ACOTE)  
Accreditation Council for Pharmacy Education (ACPE)  
Accreditation Review Committee on Education for the Physician Assistant, Inc. (ARC-PA)  
American Registry of Radiologic Technology (ARRT)  
Approval Committee for Certificate Programs (ACCP), a joint committee established by the Association for Healthcare Documentation Integrity (AHDI) and the American Health Information Management Association (AHIMA)  
California Board of Registered Nursing (BRN)  
California Commission on Teacher Credentialing (CTC)  
California Department of Public Health (CDPH), Laboratory Field Services (LFS)  
California Department of Public Health (CDPH), Radiologic Health Branch (RHB)  
Commission on Accreditation for Dietetics Education (CADE) of the American Dietetic Association (ADA)

Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)  
Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) of the American Association for Marriage and Family Therapy (AAMFT)  
Commission on Accreditation for Respiratory Care (CoARC)  
Commission on Accreditation in Physical Therapy Education (CAPTE)  
Commission on Accreditation (CoA) of the American Psychological Association (APA)  
Commission on Accreditation (COA) of the Council on Social Work Education (CSWE)  
Commission on Collegiate Nursing Education (CCNE) of the American Association of Colleges of Nursing (AACN)  
Commission on Dental Accreditation (CODA) of the American Dental Association (ADA)  
Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA)  
Council on Education for Public Health (CEPH)  
Cytotechnology Programs Review Committee of the American Society of Cytopathology (ASC), in collaboration with the Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDS), in collaboration with the Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
Joint Review Committee on Education in Radiologic Technology (JRCERT)  
Liaison Committee on Medical Education (LCME) sponsored by the Association of American Medical Colleges (AAMC) and the American Medical Association (AMA)  
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)

For a current list of accrediting agencies, please contact the Office of the Provost.

## Affirmative Action

The University routinely monitors its educational and employment practices regarding women, minorities, and the disabled to ensure compliance with the law and University policy. The University's affirmative action policy is to provide equal access to admissions, educational programs and activities, financial aid, student services, and employment.

In compliance with Title IX of the Educational Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973, a grievance procedure has been established to process student complaints alleging violation of these regulations or of the University's policy of nondiscrimination based on gender or disability. Inquiries concerning Title IX may be directed to the affirmative action officer. Employment-related discrimination complaints, including those filed by student employees, are processed in conformity with the provisions outlined in existing staff personnel policies. Complaints related to discrimination in academic areas are reviewed in conformity with the procedures established by the academic administration.



## Accommodation for Disability

Loma Linda University is in compliance with the Americans with Disabilities Act, Sec. 504 of the Rehabilitation Act, as well as with local and state requirements. The University is committed to providing education—including support services and reasonable accommodations for disabilities—to qualified applicants for whom such accommodation does not fundamentally alter the chosen program or create an undue burden.

For information regarding accommodation for disability, the student should consult the office of the dean of the school to which application for admission is being made.



Following acceptance, the student may be asked if he or she has a disability requiring accommodation. A student who desires accommodation for a disability (e.g., physical, learning, or psychological) identified after acceptance should consult the office of the dean regarding a request for accommodation. The accommodation request must be submitted in writing on the designated form. The completed form and the required supporting documentation will be evaluated by appropriate University entities to determine whether or not the applicant can be expected to perform the essential functions of the program. All discussions will remain confidential.

## Nondiscrimination Policy

Loma Linda University was established by the Seventh-day Adventist Church as an integral part of its teaching ministry. The University affirms that Christian principles are incompatible with various forms of discrimination that have divided societies, and that all persons are of equal worth in the sight of God and should be so regarded by all His people. Therefore, the University is committed to equal education and employment opportunities for men and women of all races; and does not discriminate on the basis of handicap, gender, race, color, or national origin in its educational or admissions policies, financial affairs, employment programs, student life and services, or any University-administered program.

To this end, the University is in compliance with Titles VI and VII of the Civil Rights Act of 1964 as amended; and is in substantial compliance with Title IX of the Education Amendments of 1972 (34 CFR 106 et seq.), Sections 503 and 504 of the Rehabilitation Discrimination in Employment Act of 1967, and Section 402 of the Vietnam Era Veterans Adjustment Act of 1974; and does not discriminate against any employees or applicants for employment on the basis of age or because they are disabled veterans or veterans of the Vietnam era. In addition, the University administers student programs without discrimination on the basis of age—except in those programs where age is a bona fide academic qualification for admission—in accordance with the provisions of the Age Discrimination Act of 1975.

The University reserves constitutional and statutory rights as a religious institution and employer to give preference to Seventh-day Adventists in admissions and employment, including but not limited to 42 U.S.C. Secs. 2000e-1, 2000e-2; Sec. 6-15 of Federal Executive Order 11246; 41 CFR Sec. 60-1.5(5); 20 U.S.C. Sec. 1681 (a)(3); 34 CFR Secs. 106.12 (a)(b), 106.21, 106.31, 106.39, 106.40, 106.51, and 106.57; California Government Code Sec. 12926 (d)(1); Title II, Division 4, Chapter 2, Sec. 7286.5 of the California Code of Regulations; the First Amendment to the United States Constitution; and Article 1, Sec. 4, of the California Constitution. The University believes that Title IX regulations are subject to constitutional guarantees against unreasonable entanglement with or infringements on the religious teachings and practices of the Seventh-day Adventist Church. The University expects students and employees to uphold biblical principles of morality and deportment as interpreted by the Seventh-day Adventist Church. The University claims exemptions from the provisions of Title IX set forth in 34 CFR Secs. 106.12 (a)(b), 106.21, 106.31, 106.39, 106.40, 106.51, and 106.57.

# The Academic Calendar

Academic dates for Faculty of Graduate Studies (FGS) and the Schools of:

AH Allied Health Professions  
 PH Public Health  
 SD Dentistry  
 SM Medicine

SP Pharmacy  
 SR Religion  
 ST Science and Technology  
 SN Nursing

## 2011

January						
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16	17	18	19	20	21	22
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30	31					

February						
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27	28					

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April						
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June						
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July						
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31						

August						
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October						
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November						
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December						
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**2012**

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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8	9	10	11	12	13	14	5	6	7	8	9	10	11	4	5	6	7	8	9	10	8	9	10	11	12	13	14
15	16	17	18	19	20	21	12	13	14	15	16	17	18	11	12	13	14	15	16	17	15	16	17	18	19	20	21
22	23	24	25	26	27	28	19	20	21	22	23	24	25	18	19	20	21	22	23	24	22	23	24	25	26	27	28
29	30	31					26	27	28	29				25	26	27	28	29	30	31	29	30					

May							June							July							August						
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		1	2	3	4	5						1	2	1	2	3	4	5	6	7				1	2	3	4
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31					26	27	28	29	30	31	

September							October							November							December						
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						1		1	2	3	4	5	6					1	2	3							1
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29
30																					30	31					

**2011**

**January**

- 3 U Winter Quarter begins
- SP Instruction begins
- 4 SD Instruction for *all* programs begins, except as indicated on calendar
- 9 U Last day to register/add a class
- 9-14 U Week of Renewal
- 10 SM Junior Winter Quarter begins
- 14 SD Deadline to submit WREB application (D4)-projected
- 17 U Martin Luther King, Jr., Day holiday
- 18 SD Last day to withdraw with no record of course registration on transcript (*all* programs)
- U Last day to drop without a "W" notation
- 23 SD Clinic with a Heart

24-26	SD	D4 Western Regional Examination Board qualifying examination
31-Feb. 2	SD	Midterm examinations

### February

5	SN	Dedication ceremony
10-13	SD	51st annual alumni-student convention
11	SD	Student dedication service
18	SM	Family Day and Freshman dedication service
21	U	Presidents' Day holiday
28	U	Last day to drop with a "W" notation
	SD	Last day to withdraw with a "W" notation or change units
28-March 21	SD	Registration for Spring Quarter

### March

14-17	SD	Final examinations
14-18	SP	Final examinations
14-April 8	SD	National Board Dental Hygiene Examination
17	SD	Predoctoral and Dental Hygiene Winter Quarter ends
	SM	Senior Match Day
18	U	Winter Quarter ends
	SD	Advanced Dental Education didactic Winter Quarter ends
		Faculty advance seminar
18-22	SD	Western Regional Examination Board (DDS)
18-27	SD	Predoctoral and Dental Hygiene Winter Quarter recess
19-27	U	Spring recess
21	SD	Last day to obtain financial clearance for Spring Quarter without a late fee
22	SD	Grades due from faculty
22-April 4	SD	Late registration begins (\$50 fee assessed) for D4, DDS, IDP, and DH students
25	SD	Advanced Dental Education clinical Winter Quarter ends
28	U	Spring Quarter begins
	SD, SP	Instruction begins
29	SD	IDP graduation banquet

### April

3	U	Last day to register/add a class
	SD	D3 Restorative simulated board examination
3-8	U	Week of Renewal
7	SD	Last day to withdraw with no record of course registration on transcript for D4 only
11	SD	Last day to withdraw with no record of course registration on transcript for DDS/IDP/DH
15	SD	Spring OSCE
25-27	SD	Midterm examinations
	SM	Junior Spring Quarter begins

### May

2-13	SM	Freshman/sophomore final examinations
11	SD	School chapel
12	SD	Last day to withdraw with a "W" notation for D4 students only
19	SD	D4 graduation banquet
23	U	Last day to drop with a "W" notation
	SD	Last day to withdraw with a "W" notation or change units
23-June 27	SD	Registration for Summer Quarter and summer didactic remediation session
25	SD	IDP graduation banquet (Wong Kerlee International Conference Center)
26	SD	Grades due from faculty for D4 students only
27	SD	Awards chapel
	SM	Consecration and Hooding Ceremony
	SP	Hooding Ceremony
28	SD	Dental Hygiene Pinning Ceremony
	SM,	Baccalaureate services
	SP,SD	
29	SM,SP,	Conferring of Degrees
	SD	
30	U	Memorial Day holiday

### June

6-9	SD	Final examinations
6-10	SP	Final examinations
9	SD	Predoctoral and Dental Hygiene Spring Quarter ends
10	U	Spring Quarter ends
	U	Focus on Graduates Vesper Service
	SD	Advanced Dental Education didactic Spring Quarter ends
		D1 comprehensive examination (required)
		D2 National Board Qualifying Examination
		Faculty advance seminar
10-14	SD	Western Regional Board Examination (DDS)
10-July 4	SD	Predoctoral and Dental Hygiene Spring Quarter recess
10-July 5	SD	National Board Examination, Part I
11	AH, SN,	Baccalaureate services
	ST	
12	AH, SN,	Conferring of Degrees
	ST	
13-17	SM	Junior orientation
13-July 1	SD	Predoctoral and Dental Hygiene didactic and remediation session
	SP	PY4 Summer Quarter initial session
13-July 4	SD	Predoctoral and Dental Hygiene Spring Quarter recess
14	SD	California Board Law and Ethics Examination
		Grades due from faculty
15	U	Grades due from faculty
17-21	SD	Western Regional Board Examination (DH)

- 20 U Summer Quarter begins  
 SM Junior Summer Quarter begins  
 27 SD Advanced Dental Education in Orthodontics and Endodontics programs end (2nd year only)  
 28 SM Senior orientation/Summer Quarter begins  
 30 SD Advanced Dental Education clinical Spring Quarter ends

### July

- 1 SD Advanced Dental Education orientation and instruction begin  
 1-31 SD Dental Hygiene National Board Examination  
 4 U Independence Day holiday  
 SD D4 Restorative simulated board examination  
 5 SD Predoctoral and Dental Hygiene instruction begins  
 10-13 SD "Careers in Dentistry" seminar

### August

- 4-5 SM Freshman orientation  
 8 SM Freshman Summer Quarter begins  
 15 SP PY4 APPE begins  
 22 SM Sophomore Summer Quarter begins

### September

- 2 U Summer Quarter ends  
 5 U Labor Day holiday  
 12-15 SD Final examinations  
 15 SD Predoctoral and Dental Hygiene Summer Quarter ends  
 16 SD Advanced Dental Education didactic Summer Quarter ends  
 Advanced Dental Education in Orthodontics and Endodontics programs end (2nd year only)  
 Faculty advance seminar  
 SM Senior Summer Quarter ends  
 16-23 SD Predoctoral and Summer Quarter recess  
 19 SM Senior Fall Quarter begins  
 19-23 SP PY1 orientation  
 22 U Faculty colloquium  
 23 SD Advance Dental Education clinical Summer Quarter ends  
 23-25 SM Pine Springs Ranch faculty/student retreat  
 26 U, SP Fall Quarter begins

### October

- 23 SD Dental Hygiene California board examination  
 26-27 SD D3 Restorative simulated board examination  
 31-Nov. 3 SD D4 Restorative simulated board examination

### November

- 3 SP White coat ceremony  
 23-27 U Thanksgiving recess

**December**

9	SM	Senior Fall Quarter ends
12-Jan. 3	SD	National Board Dental Examination, Part II (projected)
12-15	SD	Final examinations
12-16	SP	Final examinations
15	SD	Predoctoral and Dental Hygiene Autumn Quarter ends
16	U	Fall Quarter ends
	SD	Advanced Dental Education didactic Autumn Quarter ends Faculty advance seminar
16-Jan. 2	SD	Predoctoral and Dental Hygiene Autumn Quarter recess
17-Jan. 2	U	Christmas recess
30	SD	Advanced Dental Education clinical Autumn Quarter ends

**2012****January**

3	U	Winter Quarter begins
	SP	Instruction begins
	SD	Instruction begins for <i>all</i> programs, except as indicated on calendar
16	U	Martin Luther King, Jr., holiday
22	SD	Clinic with a Heart (projected)
23-25	SD	D4 WREB qualifying examination

**February**

9-12	SD	52nd annual alumni-student convention
10	SD	Student dedication service
17	SM	Freshman Family Day and dedication service
20	U	Presidents' Day holiday

**March**

1-30	SD	Dental Hygiene National Board Examination (projected)
12-15	SD	Final examinations
12-16	SP	Final examinations
15	SD	Predoctoral and Dental Hygiene Winter Quarter ends
16	U	Winter Quarter ends
	SD	Advanced Dental Education didactic Winter Quarter ends Faculty advance seminar
	SM	Senior Match Day
16-20	SD	Western Regional Examining Board (DDS) (projected)
16-25	SD	Predoctoral and Dental Hygiene Winter Quarter recess
23	SD	Advanced Dental Education clinical Winter Quarter ends
	SM	Junior/Senior Winter Quarter ends
26	U	Spring Quarter begins
	SD	Instructions begins for <i>all</i> programs, except as indicated on calendar

**April**

	2	SD	D3 Restorative simulated board examination
	13	SD	D2 Spring OSCE
30-May	11	SM	Freshman/Sophomore final examinations

**May**

	9	SD	School chapel
	22	SD	IDP graduation banquet, Wong Kerlee International Conference Center
	25	SD	Awards chapel
			Dental Hygiene Pinning Service (Campus Hill Church)
		SM	Sophomore Spring Quarter ends
			Consecration and Hooding Ceremony
	26	SM, SP,	Baccalaureate services
		SD	
	27	SM, SP,	Conferring of Degrees
		SD	
	28	U	Memorial Day holiday

**June**

	4-7	SD	Final examinations
	4-8	SP	Final examinations
4-July	2	SD	National Board Dental Examinations, Part I (projected)
	7	SD	Predoctoral and Dental Hygiene Spring Quarter ends
	8	U	Spring Quarter ends
		AH, SN,	Focus on Graduates Vesper Service
		PH, ST	
		SD	Advanced Dental Education didactic Spring Quarter ends
			D1 comprehensive examination (required)
			D2 National Board Qualifying Examination (required)
			Faculty advance seminar
			California Board Law and Ethics Examination (projected)
		SM	Freshman Spring Quarter ends
8-12		SD	Western Regional Board Examination (DDS-projected)
	9	AH, SN,	Baccalaureate Service
		PH, ST	
	10	AH, SN,	Conferring of Degrees
		PH, ST	
11-July	1	SD	Predoctoral and Dental Hygiene Spring Quarter recess
	18	U	Summer Quarter begins
		SM	Junior Spring Quarter ends
	30	SD	Advanced Dental Education clinical Spring Quarter ends

# II

## ABOUT THE UNIVERSITY

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A Unique University

Seventh-day Adventist heritage

Our unique features>

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Chapel services

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Loma Linda University general education  
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Student aid  
Veterans' benefits  
WICHE

## Vision — "Transforming Lives"

### Mission

Loma Linda University—a Seventh-day Adventist Christian, health sciences institution—seeks to further the healing and teaching ministry of Jesus Christ "to make man whole" by:

- Educating** ethical and proficient Christian health professionals and scholars through instruction, example, and the pursuit of truth.
- Expanding** knowledge through research in the biological, behavioral, physical, and environmental sciences; and applying this knowledge to health and disease.
- Providing** comprehensive, competent, and compassionate health care for the whole person through faculty, students, and alumni.

*In harmony with our heritage and global mission:*

- We encourage personal and professional growth through integrated development of the intellectual, physical, social, and spiritual dimensions of each member of the University community and those we serve.
- We promote an environment that reflects and builds respect for the diversity of humanity as ordained by God.
- We seek to serve a worldwide community by promoting healthful living, caring for the sick, and sharing the good news of a loving God.

*To achieve our mission, we are committed to:*

### OUR STUDENTS

Our primary responsibility is the education of students who come from diverse ethnic and cultural backgrounds—enabling them to acquire the foundation of knowledge, skills, values, attitudes, and behaviors appropriate for their chosen academic or health care ministry. We nurture their intellectual curiosity. We facilitate their development into active, independent learners. We provide continuing educational opportunities for our alumni and professional peers. We encourage a personal Christian faith that permeates the lives of those we educate.

### OUR FACULTY, STAFF, AND ADMINISTRATION

We respect our faculty, staff, and administration—who through education, research, and service create a stimulating learning environment for our students. They contribute to the development of new understandings in their chosen fields. They demonstrate both Christian values and competence in their scholarship and professions.

### OUR PATIENTS AND OTHERS WE SERVE

We provide humanitarian service through people, programs, and facilities. We promote healthful living and respond to the therapeutic and rehabilitative needs of people. We seek to enhance the quality of life for individuals in local, regional, national, and world communities.

## **OUR GOD AND OUR CHURCH**

We believe all persons are called to friendship with a loving God both now and throughout eternity. We support the global mission of the Seventh-day Adventist Church by responding to the need for skilled Christian health professionals and scholars. We seek to honor God and to uphold the values of the Seventh-day Adventist Church and its commitment to awakening inquiry. We are drawn by love to share the good news of God expressed through the life and gospel of Jesus Christ and to hasten His return.

*A Seventh-day Adventist health sciences institution*

## University Philosophy

As implied by its motto, "To make man whole," the University affirms these tenets as central to its view of education:

God is the Creator and Sustainer of the universe.

Mankind's fullest development entails a growing understanding of the individual in relation to both God and society.

The quest for truth and professional expertise, in an environment permeated by religious values, benefits the individual and society and advances the ministry of the Seventh-day Adventist Church.

"Wholeness means the lifelong, harmonious development of the physical, intellectual, emotional, relational, cultural and spiritual dimensions of a person's life, unified through a loving relationship with God and expressed in generous service to others."

*Quoted in "The Grace of Wholeness" by Gerald R. Winslow, Ph.D., SCOPE, Spring 1999. Also quoted as the adopted definition of wholeness in the Loma Linda University Wholeness Inventory.*



## Core Values

The University affirms these values as central to its view of education:

**COMPASSION**—The sympathetic willingness to be engaged with the needs and sufferings of others. Among the most memorable depictions of compassion in Scripture is the story of the Good Samaritan, which Loma Linda University has taken as a central symbol of its work.

**INTEGRITY**—The quality of living a unified life in which one's convictions are well-considered and match one's actions. Integrity encompasses honesty, authenticity, and trustworthiness.

**EXCELLENCE**—The commitment to exceed minimum standards and expectations.

**FREEDOM**—The competency and privilege to make informed and accountable choices and to respect the freedom of others. God has called us not to slavery but to freedom.

**JUSTICE**—The commitment to equality and to treat others fairly, renouncing all forms of unfair discrimination. The God of the Bible is One who calls people continually to justice. According to the prophets, religious faith could be genuine only when it led the believers to "seek justice, rescue the oppressed, defend the orphans, [and] plead for the widow."

**PURITY/SELF-CONTROL**—The commitment to be morally upright and moderate in all things, with complete control over one's emotions, desires, and actions.

**HUMILITY**—The willingness to serve others in a sacrificial manner, and the self-respect that renounces haughtiness or arrogance.

## Student Learning Outcomes

Loma Linda University's student learning outcomes are in the process of being implemented throughout all degree programs within the University. The Office of Assessment and Institutional Learning is working with programs to guide the assessment of these outcomes. All degree programs have articulated their learning outcomes, which will also reflect the University's value of educational effectiveness.

- Outcome 1** Students understand and apply the University philosophy of wholeness in their personal and professional lives.
- Outcome 2** Students understand the importance of integrating the University's Christ-centered values in their personal and professional lives.
- Outcome 3** Students demonstrate critical thinking.
- Outcome 4** Students develop a commitment to discovery and lifelong learning.
- Outcome 5** Students demonstrate effective communication skills in English.
- Outcome 6** Students demonstrate effective use of technology appropriate to the discipline.
- Outcome 7** Students understand the importance of embracing and serving a diverse world.
- Outcome 8** Students demonstrate the importance of collaborating with others within and across disciplines.

## University Mace, Coat of Arms, and Seal

Traditionally the ceremonial mace represents the authority vested in the highest officer of a governing body. In an educational institution, the authority symbolized by the mace derives from respect for the authority of knowledge and for the rights and value of the individual. Thus the leader of an academic community assumes the obligation and challenge to ensure for its members a climate conducive to growth in knowledge and grace.

The construction of the ceremonial mace of Loma Linda University evokes further ideas. Its two metals, bronze and aluminum, suggest the value of lessons both ancient and contemporary. Rather than lying prone, an instrument to be wielded, this mace stands upright in celebration of the human spirit. Its open construction implies free exposure to questions, ideas, and conflict. The eight vertical supporting elements (at three points bound together as for strength and stability in unity) uphold a graceful oval that points outward to the universe, the province of inquiry.

Within the oval, the University seal appears to float unfettered. The basic design of the coat of arms and the seal of Loma Linda University—established in 1905 as the College of Medical Evangelists—is a contemporary modification of the shield, a heraldic device.

Within the seal, the Christian cross—a universal symbol—acknowledges the role of Jesus Christ as Savior and Redeemer.

The lighted torch—part of our logo since 1959—suggests the illuminating power of knowledge and the central role of the Holy Spirit in teaching and healing. It also references the institution's call to serve as a light to the world.

The ancient staff of Aesculapius, long associated with medicine—and part of our logo since the 1920s—represents in the modern and broad sense the combined services of all the healing arts and sciences.

Across the base of the shield, the open book symbolizes the Word of God—the foundation of all truth, the source of the Christ-centered commission, the inspiration for all endeavor of humanity for humanity.

Framing the shield are, at the left, the branch of oak leaves and acorns, presented in ancient times to honor the civic contribution of one who had saved his brother-citizen's life; and, at the right, the laurel branch, presented to honor personal achievement. Shown together, the oak and laurel branches form a wreath—suggesting that the life-saving and life-enhancing work of the health sciences brings with it an obligation to act honorably, courageously, and selflessly.

The emblems of the seal imply that one who has the privilege of learning also has the obligation of valor and honor. On the scroll below the shield is the motto—adopted in 1955 on the occasion of the fiftieth anniversary of this institution—"To Make Man Whole."

# University Foundations

## HISTORY

Loma Linda University is part of the Seventh-day Adventist system of higher education. In 1905, the University (formerly College of Medical Evangelists) was founded—through a series of divine providences—at Loma Linda, California, by the Seventh-day Adventist Church. The School of Nursing began in 1905. In 1909, the College of Medical Evangelists received its charter as a medical school with the express purpose of preparing physicians who could meet the needs of the whole person. Both schools emphasized the need for healthful living as a part of medical care, a revolutionary concept in 1905.

The University was designated by the Seventh-day Adventist Church as a center for educating health professionals. The original schools—Nursing and Medicine—have been joined by Allied Health Professions, Dentistry, Pharmacy, Public Health, Science and Technology, and Religion; and the Faculty of Graduate Studies. The curricula of the University are approved by their respective professional organizations. From its small beginnings, the University has achieved widespread recognition, having sent more of its graduates into international service than has any other university. It remains committed to the vision of its founders and is sustained by its close association with the church.

From 1918 to 1962, the University operated within health facilities in two cities: Loma Linda and Los Angeles. In September 1962, all health-professional education was consolidated at Loma Linda. In 1967, Loma Linda University Medical Center opened in its new three-tower facility—a landmark cloverleaf structure. The medical center continues on the cutting edge of health care, providing excellent service for patients and expanding educational opportunities for students.

In 1990, the Board of Trustees designated Loma Linda University a health sciences university—part of a complex comprised of Loma Linda University Medical Center, faculty practice plans, and affiliated institutions. The University is a leader in the field of health sciences education, research, and service.

The most current campus census figures (March 2010) indicate that the core of the combined faculties consists of 1,450 full-time teachers. Part-time and voluntary teachers (1,364—largely clinicians in the professional curricula) bring the total to 2,814. As of Autumn Quarter 2010, 723 students from 89 countries outside the United States are represented in the enrollment of 4,211.



## A CENTURY OF SERVICE

Today the original 1905 property is part of an expanding health sciences campus, which includes:

- five medical facilities, licensed for approximately 940 beds—
  - Loma Linda University Medical Center (LLUMC), 1966;
  - Loma Linda University Children's Hospital (LLUCH), 1993;
  - Loma Linda University Medical Center East Campus Hospital (LLUECH), 2003; licensed under LLUMC as Loma Linda University Community Medical Center (LLUCMC), 1993—formerly known as Loma Linda Community Hospital;
  - Loma Linda University Heart & Surgical Hospital (LLUHSH), 2009;
  - an acute psychiatric care facility, licensed in 1991 for 89 beds—the Loma Linda University Behavioral Medicine Center (LLUBMC)
- nine Loma Linda University Adventist Health Sciences Center (LLUAHSC) institutes, two LLUAHSC-related research centers, and various school-related research centers (see Learning Resources);
- and Loma Linda University (on campus, distance education, and online degree programs through the Schools of Allied Health Professions, Dentistry, Medicine, Nursing, Pharmacy, Public Health, Religion, and Science and Technology; and the Faculty of Graduate Studies.

- 1905 School of Nursing
- 1909 The institution was named College of Medical Evangelists (CME)
- 1922 Department of Dietetics\*
- 1937 School of Medical Technology\*
- 1941 School of Physical Therapy\*
- 1945 Radiologic Technology Program\*
- 1948 School of Tropical and Preventive Medicine (reorganized as School of Public Health, 1964)
- 1953 School of Dentistry
- 1954 Graduate School (restructured as Faculty of Graduate Studies, 2005)
- 1958 Dental Hygiene Program
- 1959 Occupational Therapy Program\*
- 1963 Medical Records Administration Program\*
- 1966 Schools/Programs (see \* above) consolidated as the School of Allied Health Professions
- 1967 Loma Linda University campus merges with La Sierra College
- 1968 Loma Linda University Medical Center dedicated
- 1990 Loma Linda and La Sierra campuses become two separate universities
- 1991 Loma Linda University designated a health sciences university
- 1997 Loma Linda University and Medical Center (corporately linked together through Loma Linda University Adventist Health Sciences Center—LLUAHSC)
- 2002 School of Pharmacy
- 2003 School of Science and Technology
- 2007 School of Religion

## A Unique University

Loma Linda University has always combined a devotion to academic excellence with a concern for spiritual values and a high sense of mission. The motto of the University, "To make man whole," illustrates the sense of destiny felt in the University community to act its part in God's ongoing plan for healing and restoring human beings to live with Him in wholeness, both now and in eternity.

While Loma Linda University has changed in many ways since its beginning in 1905, the biblical principles that provide its foundation have remained unchanged.

### SEVENTH-DAY ADVENTIST HERITAGE



Loma Linda University is owned and operated by the Seventh-day Adventist Church and has deep commitment to respecting the rich diversity of its student body. Students come from many different faiths, and respect and sensitivity for all people—regardless of their culture and ethnicity—are viewed as a part of true Christianity. This University has a tradition of religious liberty, and it highly respects students' religious values that differ from those of this academic community. The various perspectives of spiritually committed students are considered to be enriching to this campus and its educational environment.

### OUR UNIQUE FEATURES

Two distinctive features of the Seventh-day Adventist Church, which are a part of the Loma Linda experience, become evident to first-time students. The first is the concept of the Sabbath rest, which reminds us of God as Creator. Adventists realize this in part by celebrating Saturday as the Sabbath from sundown Friday to sundown Saturday. During these hours, University offices, laboratories, libraries, study halls, and recreation facilities are closed to give time for physical and spiritual renewal and worship.

A second distinctive feature worth noting is the emphasis on health and wellness. Students will be able to exercise in our recreation and wellness center, a health-and-fitness complex that received a national award for excellence in utility and design. The cafeterias on campus feature well-prepared vegetarian meals. Note also that the University holds that a drug-, alcohol-, and tobacco-free lifestyle is essential for achieving the goal of "wholeness." This means that all students agree to refrain from the use of tobacco, alcohol, and other "recreational" drugs while enrolled at the University.

## **Spiritual Life**

Worship experiences represent a critical dimension of the educational experience at Loma Linda University and are available to the student many times throughout the week. In addition to regular Friday evening and Saturday services, many class, school, club, and University activities include a component of worship and praise to God.

### **CHAPEL SERVICES**

In keeping with the commitment of our mission, Loma Linda University students have special requirements, such as chapel service attendance each Wednesday morning in the University Church. The chapel programs provide a variety of opportunities to integrate faith and learning. Undergraduates who live in the residence halls are also expected to attend worships in the residence halls each week.

### **RELIGION CLASSES**

Classes in religion are part of the core curriculum in each of the University's schools and programs. These classes deal with the study of the Bible, ethics, clinical ministry (which concentrates on ways to understand and meet the spiritual needs of patients in a manner that is noninvasive and individually appropriate), and a variety of other issues related to the student's field of study and personal spiritual journey.

All students who choose Loma Linda as their university make a commitment to conduct their lives in a manner that reflects their sense of responsibility for the honor and integrity of the University and of themselves as members of its community.

## Learning Environment

Loma Linda University is dedicated to creating a learning environment that promotes the lifelong pursuit of knowledge, wisdom, and skills used for selfless service to mankind. Through intentional educational strategies, Loma Linda University interweaves its vision, mission, and core values with its student learning outcomes. The University's mission of wholeness gives focus to the learning environment that balances mind, body, and spirit (psycho-social-physical-spiritual) and gives meaning to the motto of mission-focused learning. In this health care institution, critical and analytical thinking skills in the health, behavioral, and natural sciences are blended with a commitment to spiritual and moral development.



Loma Linda University pledges to students, staff, faculty, alumni, and the local and global communities its commitment to upholding integrity, valuing diversity, engaging with the community in service-learning scholarship, and honoring the process of ongoing self-assessment for the purpose of continuous quality improvement. The University and each of its schools, programs, and classes provide clearly defined student learning outcomes and measurable performance indicators to create a learning atmosphere that is clear and focused.

The University is engaged in systematic academic program review. Curricular maps are maintained for each program to assure alignment between student learning outcomes and planned academic activities. Program review follows carefully developed schedules as outlined in school-specific assessment matrices.

Loma Linda University is committed to using assessment data to guide academic and fiscal master planning for the University.

The total resources of the University offer a wealth of opportunity to the student with initiative and willingness to develop individual capacity to the fullest extent. The academic resources, affiliated clinical facilities, and community agencies constitute a rich educational environment both in classroom instruction and in guided experience. Major facilities utilized for clinical affiliations and internships include the University Medical Center; the Jerry L. Pettis Memorial Veterans Medical Center; and numerous other hospitals and agencies located in the Redlands, San Bernardino, Riverside, and Los

Angeles areas; as well as throughout the United States and abroad. In addition, students find varied opportunities for service and learning in the immediate University community, in clinical and research electives, and in diverse volunteer programs.

## UNIVERSITY STUDENT MISSION-FOCUSED LEARNING OPPORTUNITIES

### **Students for International Mission Service (SIMS)**

Students for International Mission Service (SIMS) is a Loma Linda University program housed in the Global Health Institute program that exemplifies the University's legacy and its commitment to global service. It provides inspiring and life-changing global service opportunities for students while focusing on assisting areas of need. In addition to coordinating monthly group trips to Mexico and several yearly group trips to other sites—such as the Amazon, South America, and Africa—SIMS also assists individual students with mission electives and service-learning placements at almost fifty partner mission hospitals and clinics spread around the world. The mission of SIMS is to provide Loma Linda University students with high-quality service-learning opportunities that empower them to become caring, competent, and socially responsible health professionals who value service as a lifelong commitment. More information is available by calling the SIMS office at 909/558-8089, accessing the SIMS Web site at <llu.edu/central/sims>, or visiting the SIMS office at Nelson House located at 11226 Campus Street.

### **SAC Health System (SACHS)**

A 42,000-square-foot clinic located just three miles from campus at the former Norton Air Force Base serves as the hub for activities of the SAC Health System (SACHS). The SAC Health System provides low-cost health care to persons who have limited or no access to medical care in the traditional system. Satellite clinics serve populations at several locations. The clinics are staffed by a wide variety of health care professionals and provide an ideal setting for interdisciplinary training in today's changing health care climate. Student involvement includes developing nutrition and health education programs; creating questionnaires for data collection; writing proposals for funding; and actual hands-on experience at the clinic, i.e., obtaining patient histories, assessing psychosocial problems, analyzing laboratory specimens, and providing nutrition and health education counseling. For additional information, call 909/382-7100; or visit the SACHS Web site at <llu.edu/central/sachs>.

### **Community-Academic Partners in Service (CAPS)**

The mission of Community-Academic Partners in Service (CAPS) is to develop and strengthen reciprocal and sustainable relationships/partnerships between Loma Linda University students, faculty, and staff, and the local community. The vision of CAPS is to put into practice Christ's mission of love and compassion through meaningful community engagement. The CAPS office is committed to raising awareness about existing local community engagement activities being conducted through our schools and to connect students/faculty to these opportunities.

## UNIVERSITY LIBRARIES

### **Major library resources**

Specialized libraries are located in various medical and school departments and in other entities on campus. Additionally, the following three major library resources on campus support the University's academic programs:

- the Del E. Webb Memorial Library,
- the Rehabilitation Library (East Campus), and
- the Veterans Administration Library Services.

## The central library



The historical roots of the Del E. Webb Memorial Library, the central library of Loma Linda University, go back to 1907, when a small library collection was started in a room of the old Loma Linda Sanitarium. In 1953, the growing collection was moved to its own building on the Loma Linda campus. In 1981, construction of a new library was funded by a Del E. Webb Foundation grant that increased the total floor space of the library to 87,670 square feet. This structure currently houses the main library; while the old structure is now shared between the Department of Archives and Special Collections and the bound retrospective journals. As of June 2010, the Library had a total collection of 410,963 books and bound journals; 247,408 print and electronic books; and 11,295 currently received print and electronic journal titles.

For more detailed statistical information, consult the Library's Web site at <[llu.edu/library](http://llu.edu/library)>.

## Library mission

The mission of the Del E. Webb Memorial Library is to stimulate and support the information needs of the University's instructional, research, and service programs. To this end, the Library provides a full range of information support services—including, but not limited to, reference, circulation, reserve, and access to the Internet. The Library also provides online databases, digital books, and journal collections; end-user training programs; interlibrary loans; photocopy services; a computer laboratory; class-integrated, library instruction programs; and services that support distance education and University outreach programs.

### **Access to resources**

The Del E. Webb Memorial Library's catalog provides access to all campus library collections. In addition to the collections of the Del E. Webb Memorial, there are nursing skills laboratory, bioethics, East Campus, nutrition, occupational therapy, and Geoscience Research Center collections. The catalog also provides access to the combined collections of some thirty-nine libraries through Link Plus, a book-request service and union catalog of more than 8 million records. The Library's Web site, <llu.edu/library>, provides access to all electronic journals, books, and databases.

The Library participates in national and regional networks—such as the National Network of the Libraries of Medicine, founded by the National Library of Medicine. This structure is divided into eight regional sections, one of which is the Pacific Southwest Region. The Library belongs to this region and is the designated medical resource library for San Bernardino and Riverside counties. Local library cooperatives include the Inland Empire Academic Library Cooperative (IEALC); and San Bernardino, Inyo, Riverside Counties United Library Services (SIRCULS). Membership in these cooperatives gives Loma Linda University students, faculty, and staff access to the collections of these libraries, archives, and special collections.

### **Archives and special collections**

The Department of Archives and Special Collections is the central repository of information on the history of Loma Linda University, the health sciences, and major collections on Adventism. It includes print materials; rare books; theses; dissertations; microforms; sound recordings; several thousand photographs; and archival materials, including papers of various denominational and University officials, as well as the congressional papers of the Honorable Jerry and Shirley Pettis. Searchable digitized indexes for various document files are also available via the department's Web page: <llu.edu/library/speccolls>.

For additional information about school- or program-specific libraries/computer and research centers/learning resources, see the desired schools and programs in Section III of this CATALOG.

### **Ellen G. White Estate Loma Linda Branch Office**

Also located in the Library is a branch office of the Ellen G. White Estate. It contains 60,000 typewritten pages of Ellen G. White's letters and manuscripts; 4,600 of her published articles; and several different files of materials pertaining to various aspects of her life and ministry. A computerized concordance to her published writings is available to researchers.

## **LEARNING RESOURCES**

On the campus, many learning resources for the student offer various opportunities for academic study and research. Each school center is listed with its most closely affiliated school.

### **LLUAHSC (Loma Linda University Adventist Health Sciences Center) institutes**

- Loma Linda International Heart Institute
- Cancer Center (Institute)
- Transplantation Institute
- Rehabilitation, Orthopaedics, and Neurosurgery Institute
- Behavioral Health Institute
- Global Health Institute
- Institute for Community Partnerships

- Lifestyle Medicine Institute
- Perinatal Institute

### **LLUAHSC centers**

- Center for Christian Bioethics
- Center for Spiritual Life and Wholeness
- James M. Slater, M.D., Proton Treatment and Research Center

### **LLU school centers**

- Center for Dental Research (School of Dentistry)
- Center for Health Promotion (School of Public Health)
- Center for Health Research (School of Public Health)
- Center for Health Disparities and Molecular Medicine (School of Medicine)
- Center for Perinatal Biology (School of Medicine)
- Joint Replacement Center (School of Medicine)

## Admission Policies and Information

### PERSONAL QUALITIES

Loma Linda University was established to provide professional health education in a distinctively Christian environment that prepares well-qualified, dedicated Christian health science professionals who are committed to fulfilling the mission of this University to serve humanity. Students at Loma Linda University are expected to uphold the Christian ethical and moral standards of this Seventh-day Adventist Church-related institution while on and off campus.

The University's emphasis on health and the health professions, as well as the practices of the supporting church, preclude admission of applicants who use tobacco, alcoholic beverages, or narcotics. The rights of the individual are recognized and respected; however, any conduct that is contrary to the principles governing a healthful and moral lifestyle is not acceptable for a Loma Linda University student. The prospective student has the freedom to accept or reject these principles and practices. However, once application is made to this University, it is assumed that the applicant has chosen to abide by them.

In selecting students for entrance to programs in the schools, the admissions committees look for evidence of personal integrity, academic achievement, healthy lifestyle, self-discipline, and self-direction. An applicant accepted to a school must possess capabilities to complete the full curriculum in the allotted time at the levels of competence required.

While preference is given to Seventh-day Adventist Church members, anyone interested in studying at Loma Linda University and willing to live by the institution's standards is encouraged to apply.

Some programs require an interview with the faculty. Acceptance of an applicant into any curriculum is contingent on the recommendation of the department conducting the program.

### APPLICATION AND ADMISSIONS

#### Where to apply

It is important to know the specifics of the application process and to begin this process well in advance of the date of anticipated or desired entrance. Degree and program information and requirements can be found online at <[www.llu.edu](http://www.llu.edu)>. Application to a degree or certificate program is to be submitted online at <[llu.edu/central/apply](http://llu.edu/central/apply)>. Exception: Some Loma Linda University programs use external application services, as noted on the Web page.

#### Where to email, call, or write

For information about Loma Linda University:

Email <[ask@llu.edu](mailto:ask@llu.edu)> or the school of choice, using the address listed on <[llu.edu/central/apply](http://llu.edu/central/apply)>.

Telephone inquiries may be made at 800/422-4LLU. Dialing from Canada, please call 800/578-7114.

Correspondence regarding application and admission should be addressed to—

Office of Admissions  
(School of choice)  
Loma Linda University  
Loma Linda, CA 92350

## Procedure

The applicant should complete the following application requirements:

- Complete and submit the application forms online at <llu.edu/central/apply>, accompanied by the nonrefundable application fee. Some programs use external application services, as listed.
- Request letters of recommendation.
- Request that official transcripts of all postsecondary course work be sent directly to the Office of University Admissions. High school transcripts are required for application to undergraduate programs.
- Take the appropriate admissions tests, as noted in the school and program sections of this CATALOG, and request that the results be sent to the Office of University Admissions.

## Application-review process

All completed applications are reviewed by the appropriate admissions committee, which makes the final decision regarding acceptance.

## Acceptance

Upon receipt of the notice of acceptance, the applicant is expected to send a letter to confirm acceptance, along with the required nonrefundable deposit. This deposit is deducted from the tuition and fees due at the initial registration.

## Applicant's records

The application and all supporting records and documents become the property of the University.

## TRANSCRIPTS

### Incoming

Applicants not applying through an external application service must provide official transcripts of all postsecondary education prior to offers of admission. However, international applicants (non-U.S. citizens and non-U.S. permanent residents) must meet all admission requirements for the chosen program before an offer of acceptance can be issued, whether or not the program uses an external application service. Official final transcripts documenting completion of all course work taken between the time of application and matriculation must be received within the first quarter of enrollment. Applicants expecting an associate's degree to be awarded before matriculation at Loma Linda University must provide documentation (e.g., letter from registrar, school dean, or designee) showing expected degree completion. Otherwise, a high school transcript will be required for acceptance. Applicants to programs that require a bachelor's degree must submit documentation (e.g., letter from registrar, school dean, or designee) of completion of bachelor's degree prior to matriculation. Subsequent enrollment is contingent upon the previous submission of all official final transcripts. Applicants are required to furnish evidence (transcripts, GED, CHSPE, or equivalent) of completion of high school in order to be granted admission to undergraduate programs of the University. The final transcript must include the date of graduation. Students who hold an associate degree from a regionally accredited college/university upon admission do not need to furnish a high school transcript, unless required to validate specific course work. The University accepts only official transcripts sent directly to Loma Linda University from the college, university, or high school issuing it. Transcripts submitted by the student are not considered official.

Applicants who have attended international schools are required to submit official transcripts (mark sheets) in the original language, which convey the grade and credits earned in each subject; and an English translation of their transcripts, if not already in English. In accordance with the United States immigration regulations, international applicants can be evaluated on the basis of a previewed unofficial copy of their transcripts, on the condition that the University receives official transcripts before the admission is finalized. Applicants to programs that require a bachelor's degree must submit documentation of completion of a bachelor's degree prior to matriculation.

Official education transcripts (or mark sheets), degrees earned from international institutions, or professional credentials must be sent to an evaluation center approved by Loma Linda University. The center reports the evaluation results directly to the Office of University Admissions.

Transcripts and evaluation results received by the University become the property of the University and will not be released to the student or forwarded to any other institution.

### **Outgoing**

The University provides transcripts to other institutions or to the student or graduate only upon written request of the student or graduate.

The University reserves the right to withhold all information concerning the record of any student who is in arrears in the payment of accounts or other charges, including student loans. No transcripts will be issued until all of the student's financial obligations to the University as defined in this CATALOG have been met.

### **CONTINUOUS ENROLLMENT**

A student who has not enrolled for any classes, or paid the continuous registration fee for courses still in progress from a previous term, will be inactivated at the beginning of the second quarter of nonenrollment, unless s/he is on an approved leave of absence (maximum of four academic quarters, including Summer Quarter). (Example: A student who enrolled for Autumn Quarter, but who does not enroll for Winter Quarter, will be inactivated at the close of registration [two weeks into the quarter] for the subsequent Spring Quarter).

Inactivated or formally withdrawn students who wish to return to complete their degree program are required to reapply with sufficient time for adequate review of any new transcript credits and advisement of any new program requirements.

The reapplication process also requires the submission of official transcripts from all colleges/universities attended since the student last attended this University. Official transcripts from colleges/universities the student attended while enrolled at this University must also be submitted if they were not submitted prior to inactivation.

Students who reapply to a program are subject to the program requirements published in the Catalog in effect at the time of reentry. All graduates are expected to have documented current knowledge in their field of study as of the date of graduation (date on diploma).

Leave-of-absence status does not extend the student's five-year (master's) or seven-year (doctoral) time limit for completion of a degree program. If the reapplicant is within a year of his/her time limit at the time of reapplication, or if the time limit has expired and the reapplicant is requesting readmission and a time extension, then s/he must submit a quarter-by-quarter plan for meeting all degree requirements. The re-admission request will be evaluated with the degree-completion time extension.

## **STUDY DEFERRAL**

Applicants are accepted for a specified entering date. If the applicant does not enter the program at the time stated for admission, the application will become inactive unless the school receives a written request to hold the application. Not all programs permit an applicant to defer an application; however, for those programs for which this is permitted, an application may not be deferred for more than one year. After one year, a new application must be submitted. Accepted applicants who wish to reactivate their acceptance at a later date must apply to the school for reactivation. Previous acceptance does not guarantee acceptance at a later time. Individuals must meet admission and graduation requirements that are in effect for the school year during which they first register.

## **RE-ENTRANCE**

See Continuous Enrollment policy in this section of the CATALOG.

## **PRE-ENTRANCE EXAMINATIONS**

Official pre-entrance examination results, as required by each program, should be sent to the Office of University Admissions, except for the following programs:

- Applicants to the School of Medicine are required to take the Medical College Admission Test (MCAT) and have scores sent to the school's Office of Admissions through an application submitted to the American Medical College Admissions Service (AMCAS).
- Applicants to the School of Dentistry are required to take the Dental Admission Test (DAT) and have scores sent directly to the school's Office of Admissions.

## **TRANSFER CREDIT**

Applicants must file with the Office of University Admissions complete records of all studies taken on the college/university level. Transfer credit is defined as credit completed at another U.S.A. college or university accredited by a regional association, credit earned at an institution accredited by the Seventh-day Adventist educational system, or credit earned at an international institution recognized by its government. The University reserves the right to require an applicant to satisfactorily complete written and/or practical examinations in any course for which transfer credit is requested. Remedial, high school-level courses, and courses identified by the transfer institution's catalog as not applicable toward a baccalaureate degree are not accepted for transfer into an undergraduate program. Graduate transfer courses must be equivalent to courses appropriate to degree requirements.

## **Junior colleges**

A maximum total of 70 semester units or 105 quarter units of credit will be accepted from regionally accredited junior colleges. Subject and unit requirements for admission to the respective programs are outlined in Section III.

## **International**

Credits submitted from a college outside the United States are evaluated on an individual basis by an evaluation center approved by Loma Linda University, which reports the evaluation results directly to the Office of University Admissions. It is the applicant's responsibility to contact an approved evaluation service and supply the required documents for evaluation.

### **Professional schools**

Credits earned in a professional school are accepted only from a school recognized by its regional or national accrediting association and only for a course that is essentially the equivalent of what is offered at this University or is substantially relevant to the curriculum.

### **Military schools**

Credit for studies taken at a military service school is granted to veterans according to recommendations in the *Guide of the American Council on Education*.

### **Correspondence/distance course work**

Course work taken at a regionally accredited school is ordinarily accepted. Home Study International in Silver Spring, Maryland, is the officially affiliated correspondence school for Loma Linda University.

## **HEALTH/IMMUNIZATIONS**

### **Pre-entrance health requirements/immunizations**

It is expected that necessary routine dental and medical care and elective surgery will have been attended to before the student registers.

New students are required to have certain immunizations and tests before registration. Forms for a student's personal physician to use in documenting the completion of immunization requirements are provided on the New Student Portal. In order to avoid having a hold placed on the registration, the student is encouraged to return the documentation forms to Student Health Service no later than three weeks prior to the beginning of registration. The student must give evidence in the form of physician records or University health service records for the items listed below before registration for the first academic quarter.

NOTE: Charges for immunizations and tests completed at Student Health Service will be billed to the student's account.

- Two MMRs—measles (rubeola), mumps, rubella (German measles)  
Immunizations must be current after 1980.
- PPD (TB) skin result or x-ray report  
If a returning student is assigned to a clinical facility that requires a tuberculosis skin test, then the student is required to have the test within the six months before the assignment begins. For School of Dentistry applicants only, this test must be repeated at least yearly while a student, and more frequently if required for placement at a clinical agency site.
- Tetanus/Diphtheria booster  
Booster must be current within ten years.
- Varicella (chicken pox) blood test and/or immunization  
If no known history of chicken pox, student will need to provide proof of a positive titer or of a completed series of two vaccinations.
- Hepatitis B vaccination series  
Students who have had hepatitis B in the past should employ extra protection when involved in direct patient care and may request a modified curriculum, if necessary. This series of three vaccinations may be completed at this University even if it was begun elsewhere.

For further information, consult the *Student Handbook*, University Policies: Communicable disease transmission-prevention policy; and the Student Health Service office, extension 88770.

## **COMBINED DEGREES PROGRAMS**

Information regarding combined degrees programs, their curricula, pre-entry requirements, distribution of instruction, graduation requirements, finances, etc., may be obtained from the school and program directors responsible for the programs. See Section III of this CATALOG for combined degrees program options.

## **BACKGROUND CHECK**

After students are accepted, they will receive a link on their New Student Portal that will allow them to get a University-specific background check. Other background checks will not be accepted.

## **ADMISSIONS CLASSIFICATIONS**

Applicants are admitted under one of the following classifications and must be approved for acceptance by the department(s) in which they propose to do their major concentration. Acceptance into a specific program is required before any credit earned can be applied to a degree or certificate.

### **Regular**

Regular status is given to a student who has met all entrance requirements and is registered for a standard course of study leading toward a degree or certificate in one of the schools of the University.

### **Provisional**

Provisional status may be given to a student who has been accepted for admission but has not yet received regular status, either because of qualitative or quantitative deficiencies in the academic record.

### **Nondegree**

Nondegree status may be granted to a student who has not been admitted to a degree or certificate program but who is registered for selected courses in one of the schools of the University. Nondegree students are limited to a total of 12 units cumulative of courses that are applicable to a degree program at this University.

### **Continuing education (CE)**

Continuing education status is given to a student who is registered for a continuing education course earning continuing education units (CEUs).

## **ADVISEMENT**

Upon admission into a degree program, each student is assigned an academic advisor—a faculty member in the student's major department who serves as the student's first line of communication in addressing professional and personal successes and potential challenges.

Faculty advisors are prepared to discuss career opportunities, academic policies, academic problems, curriculum, and personal circumstances.

It is the student's responsibility to consult with his/her advisor in planning the program of study. Thereafter, advisees should schedule counseling sessions with their advisors to monitor progress and assure completion of degree requirements. When questions arise relating to curriculum or policy

requirements, students should always refer first to the CATALOG and their own program curriculum outline. Next, they may seek counsel from their academic advisor. Questions arising after discussion with the advisor should be referred to the department chair or the academic dean.

Orientation and advisement sessions are scheduled for all new students. These sessions provide general guidance regarding student services, health care, library resources, safety and security, registration procedures, and academic policy.

## **INTERNATIONAL STUDENTS**

International applicants (non-U.S. citizens and non-U.S. permanent residents) must meet all admissions requirements for the chosen program before an offer of acceptance can be issued. This includes providing evidence of their ability to meet estimated living expenses and all financial obligations to the University that will occur during their program.

After acceptance into the chosen program, the office of International Student and Scholar Services will contact international applicants and guide them through the appropriate procedures. For questions, please contact International Student and Scholar Services at 909/558-4955.

### **English proficiency**

Regardless of nationality or citizenship, an applicant whose native language is not English or whose secondary education has been obtained outside the U.S. is required to pass an approved test of English proficiency. Additionally, any applicant whose English competency is uncertain in regards to his/her professional success at Loma Linda University may be required to pass a test of English proficiency. The minimum required score for International English Language Testing System (IELTS) is 6.5. The minimum required score on Michigan English Language Assessment Battery (MELAB) is 77. A minimum Test of English as a Foreign Language (TOEFL) score of 550 (paper-based) / 213 (computer-based) / 80 (Internet-based) is required. A Test of Spoken English (TSE) with a minimum score of 55 is required only for M.P.A., entry-level M.P.T., and D.P.T. degrees. The TOEFL score is valid for two years from the test date. If it has been more than two years since the examinee last took TOEFL, the test must be taken again to have the scores reported. Visit the TOEFL Web site at <[ets.org/toefl](http://ets.org/toefl)> for the most up-to-date information and examination registration.

### **Pre-entrance examination results**

All official pre-entrance test scores (e.g., TOEFL, GRE) as required by each program must be sent directly to the Office of University Admissions by the testing organization.

### **International evaluations**

All international (non-U.S.) transcripts, including high school, must be submitted to one of the LLU-approved evaluation services. See <[llu.edu/central/apply/intltrans.page](http://llu.edu/central/apply/intltrans.page)> for a list of the approved companies.

### **Finances and employment**

United States immigration regulations and Loma Linda University require that international students must be prepared to provide an advance deposit and must provide documentation that additional funds will be forthcoming to meet school expenses. The deposit will be held by the University during the program of study and will be applied to the last quarter's tuition charge. Alternatively, the deposit may be refunded, less any outstanding balance on the account, if the student is denied a visa or terminates his/her program.

Scholarships and assistantships for international students are scarce. The student should contact his/her advisor regarding availability and application information.

International students must obtain written authorization from International Student and Scholar Services before accepting any on-campus employment. Off-campus employment requires prior issue of a work permit by the U.S. Citizenship and Immigration Services. F- and J-visa students must limit their employment to twenty hours or less per week while registered for courses and while classes are in session during three of four quarters in an academic year. Regulations allow full-time work (forty hours or less per week) during school breaks and summer vacations (if a student's program allows summer quarters off). For questions, please telephone International Student and Scholar Services at 909/558-4955.

## **Visas**

### **F-1 student visas**

Loma Linda University is authorized by the United States Department of Homeland Security to issue F-1 visa applications (i.e., I-20 forms). The F-1 student visa is the visa of choice for most international students coming to Loma Linda University. This visa allows some nondegree study (e.g., certificates, preceptorships, and English-as-a-second-language studies). Degree-earning students are subject to study load requirements and are allowed limited on-campus employment.

The I-20 is issued after a student:

1. has been accepted into a program and all official transcripts (mark sheets) have been received by the University,
2. has paid the advance deposit, and
3. has documented his/her financial plan for the chosen program.

International Student and Scholar Services can be contacted at 909/558-4955 for further information regarding F-1 student visas and the regulations governing this visa.

### **J-visa exchange program**

Loma Linda University has an exchange visitor program that is approved by the U.S. Department of State. This J-visa exchange program is authorized to sponsor/host degree-earning students, nondegree (continuing education) students, short-term scholars, visiting professors, and research scholars. The J-visa form, DS-2019, is issued after an exchange visitor has been accepted into a program, scholar position, or professor position; and has documented his/her financial plan (including health insurance for J-1 and J-2 dependents).

Loma Linda University also hosts exchange visitors who are sponsored by other organizations (e.g., Fulbright scholars). As a hosting institution, Loma Linda University has limited authority over an exchange visitor since the authority resides in the sponsoring organization.

Under current exchange visitor regulations, J-2 dependents are allowed to enroll part or full time at Loma Linda University. Also, their credits earned can be either degree or nondegree applicable.

J-1 exchange visitors are allowed to work; but employment guidelines differ, depending on the exchange category. Contact International Student and Scholar Services at 909/558-4955 for further information and regulations governing the Exchange Visitor Program.

**Other visas**

International students may enter the U.S. on a wide variety of visas. However, a visa may have to be changed before a student can commence academic studies at this University. For further information regarding regulations and study options for specific visa types, contact International Student and Scholar Services at 909/558-4955.

**Study load**

Both the F- and J-student-visa regulations require the successful completion of a full study load during each quarter of each academic year (as defined by each program). A minimum of 12 units per quarter is usually considered full time for an undergraduate program; 8 units per quarter is considered full time for a graduate program. In any quarter in which there will be a reduced study load, prior approval is needed from an international student advisor in International Student and Scholar Services.

**Transfer students**

International students currently attending other schools in the United States who have either an I-20 or a DS-2019 and who wish to attend Loma Linda University must do a school-to-school transfer. The timing of a transfer is critical in order to maintain visa status; therefore, it is important to consult with an international advisor at each school as soon as the acceptance letter is received.

**Study load**

Both the F- and J-student-visa regulations require the successful completion of a full study load during each quarter of every academic year (as defined by each program). A minimum of 12 units per quarter is usually considered full time for an undergraduate program; 8 units per quarter is considered full time for a graduate program. In any quarter in which there will be a reduced study load, prior approval is needed from an international student advisor in International Student and Scholar Services.

**Employment for international students**

International students must obtain written authorization from International Student and Scholar Services before accepting any on-campus employment. Off-campus employment requires prior issue of a work permit by the U.S. Citizenship and Immigration Services. F- and J-visa students must limit their employment to twenty hours or less per week while registered for courses and while classes are in session during three of four quarters in an academic year. Regulations allow full-time work (forty hours or less per week) during school breaks and summer vacations (if students' programs allow summer quarters off). For questions, please telephone International Student and Scholar Services at 909/558-4955.

## Division of General Studies

### GENERAL EDUCATION REQUIREMENTS

The Division of General Studies offers general education courses that contribute to the fulfillment of requirements that apply to the Bachelor of Science degree programs in the Schools of Allied Health Professions, Dentistry, Nursing, and Science and Technology. In addition, these schools offer a variety of general education courses that are open to students across all schools. The Division of General Studies also provides oversight for courses that may be selected to enrich a student's academic experience but which do not fulfill Loma Linda University general education requirements.



### LOMA LINDA UNIVERSITY PHILOSOPHY OF GENERAL EDUCATION

As a Seventh-day Adventist health sciences institution, Loma Linda University seeks to exemplify a life of service and sensitivity beyond the requirements of academic excellence within a professional discipline. With its rich spiritual heritage, the University places special emphasis on educating its students for a life of service in a global community.

General education at Loma Linda University consists of courses, lectures, programs, and activities coordinated with the intent to integrate faith and learning. In addition to the basics of cultural heritage and diversity, scientific inquiry and analysis, communication, and wellness, the curriculum emphasizes the University's spiritual heritage; as well as moral and ethical decision making that is grounded in Christian principles.

Thus, a general education is considered to be the cornerstone upon which students begin cultivating their abilities to:

1. Understand the fundamental Christian principles and Adventist heritage that undergird Loma Linda University.
2. Make informed moral and ethical decisions.
3. Incorporate critical-thinking skills into personal and professional experience.

4. Value individuals with diverse capabilities and ideological, ethnic, gender, and generational perspectives.
5. Communicate effectively.
6. Undertake scientific inquiry and analysis.
7. Appreciate the contributions of the arts and humanities to society.
8. Examine the historical basis of the health sciences professions.
9. Develop self-awareness through balance of mental, physical, social, and spiritual aspects of daily living.
10. Model servant leadership in health care as exemplified by Jesus of Nazareth.

The Loma Linda University philosophy of general education creates a unique learning environment committed to the concept of human wholeness. Faculty are selected who embrace the spirit as well as the specifics of general education and who purpose to extend its goals into all aspects of university life—from the residence hall programs to the core of professional studies—thus adding an invisible curriculum to the required course offerings. It is this spirit in tandem with the specifics of a liberal arts education that inspires students to achieve academic excellence, value diversity, pursue lifelong learning, and live to bless others.

## LOMA LINDA UNIVERSITY CRITERIA FOR GENERAL EDUCATION COURSES

- The course assists the health sciences student in cultivating abilities in one or more of the preceding ten aspects described in the Loma Linda University philosophy of general education for baccalaureate degrees.
- The primary focus of the course contributes to the relevant knowledge and understanding of a subject area within one of the following domains described in the Loma Linda University general education requirements for baccalaureate degrees.
- The course is based on appropriate prerequisites, particularly when offered at the upper division level.
- The course is open to all baccalaureate degree students of Loma Linda University for general education credit.
- Courses transferred to Loma Linda University for general education credit from another accredited institution must fall within one of the domains described in Loma Linda University's general education requirements for the baccalaureate degree.

## LOMA LINDA UNIVERSITY GENERAL EDUCATION REQUIREMENTS (68 QUARTER UNITS)

In harmony with its commitment to wholeness, Loma Linda University requires all students graduating with a baccalaureate degree to complete a minimum of 68 quarter units of general education, which are integrated into the entire undergraduate program. Requirements are organized into five domains, as outlined in the following:

### **Domain 1: Religion and Humanities (28-32 quarter units)**

**The study of religion** must include an average of 4 units of religion course work for every 48 quarter units earned while attending a Seventh-day Adventist college or university. For students who did not earn all their credit at a Seventh-day Adventist college or university, the required religion units will be prorated based on the number of credits earned at a Seventh-day Adventist college or university (i.e., one

unit for every 12 units taken at a Seventh-day Adventist institution). All students earning a bachelor's degree, including those who have met the preceding requirements, must take at least one course in religion from Loma Linda University (see following paragraph). All required credits in religion must be earned from a Seventh-day Adventist institution, but it is strongly recommended that students at other institutions include some religion as part of the overall requirement for Domain 1.

One religion course dealing with the spiritual heritage of the philosophy and mission of Loma Linda University is required of all graduates and must be taken from Loma Linda University. Courses that fulfill this requirement are: RELT 406 Adventist Beliefs and Life, RELT 423 Loma Linda Perspectives, RELT 436 Adventist Heritage and Health, or RELT 437 Current Issues in Adventism.

Students whose required units in religion from a Seventh-day Adventist institution have been prorated (reduced) are encouraged to make up the additional units in Domain 1 (28 quarter units) with further religion courses and/or additional units in humanities from Loma Linda University.

**The study of humanities** must include a minimum of 12 units. The credits in humanities must be selected from at least three of the following areas: civilization/history, fine arts, literature, modern language, performing/visual arts (not to exceed 4 quarter units), or philosophy.

### **Domain 2: Scientific Inquiry and Analysis (24-32 quarter units)**

Scientific inquiry and analysis encompass both the natural and social sciences. The study of natural sciences must include a minimum of 12 units. The units in natural sciences must be selected from two of the following content areas: biology, chemistry, geology, mathematics, physics, and statistics.

The study of social sciences must include a minimum of 12 units. One course (or components integrated into several courses) dealing specifically with issues of human diversity is required. The remaining units in the social sciences must be selected from the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.

### **Domain 3: Communication (9-13 quarter units)**

Course work in communication must include a complete sequence in English composition that meets the baccalaureate degree requirements of a four-year college or university. (For samples of English composition requirements, see end of this section.) Other areas of study in communication may include courses in computer information systems, critical thinking, and public speaking.

### **Domain 4: Health and Wellness (2-6 quarter units)**

To encourage the pursuit of lifelong leisure activities and wellness, the study of health and wellness must include at least two separate physical activity courses totaling a minimum of 1 quarter unit; and one course in personal health or nutrition. Additional units may include other areas of health, nutrition, and physical fitness.

### **Domain 5: Electives**

Electives from the previous four domains may be selected to complete the general education minimum requirements of 68 quarter units.

## **LOMA LINDA UNIVERSITY GENERAL EDUCATION COURSES OFFERED AT LOMA LINDA UNIVERSITY**

General education courses offered by the schools are listed below in Domains 1-4.

Descriptions for general education courses are available in Section IV – The Courses – of this CATALOG.

**Domain 1: Religion and Humanities (28-32 quarter units)****Humanities**

- AHCJ 225 History of Radiation and Imaging 1890-1940 (3)
- AHCJ 226 History of Radiation and Imaging 1940-Present Day (3)
- AHCJ 422 History of Disability (3)
- AHCJ 545 Legal and Ethical Issues in the Health Professions (3)
- ARTA 205 The Language of Art (2-4)
- CMSD 217 Beginning Sign Language (3)
- DNHY 408 Professional Ethics (2)
- DNHY 409 Jurisprudence (2)
- ENGL 478 Theory and Applications of Linguistics (3)
- HUMN 404 Survey of Health Care Narrative (2)
- HUMN 406 Representations of Healing in Ethnic Literature (2, 3)
- HUMN 407 Medical Humanities (2, 3)

**Religion**

- RELE 447 Religion and Society (2-4)
- RELE 455 Christian Understanding of Sexuality (2, 3)
- RELE 456 Personal and Professional Ethics (2, 3)
- RELE 457 Christian Ethics and Health Care (2, 3)
- RELR 404 Christian Service (1, 2)
- RELR 408 Christian Perspectives on Marriage and the Family (2, 3)
- RELR 409 Christian Perspectives on Death and Dying (2, 3)
- RELR 415 Christian Theology and Popular Culture (2, 3).
- RELR 427 Crisis Counseling (2, 3)
- RELR 429 Cultural Issues in Religion (2, 3)
- RELR 448 Church and Community Leadership (2, 3)
- RELR 475 Art of Integrative Care (2, 3)
- RELT 404 New Testament Writings (2, 3)
- RELT 406 Adventist Beliefs and Life (2, 3)
- RELT 415 Philosophy of Religion (2, 3)
- RELT 416 God and Human Suffering (2, 3)
- RELT 423 Loma Linda Perspectives (2-3) (meets religion requirement)
- RELT 425 Contemporary Religious Issues (2, 3)
- RELT 426 Jesus (2, 3)
- RELT 436 Adventist Heritage and Health (2, 3)
- RELT 437 Current Issues in Adventism (2, 3)
- RELT 440 World Religions (2, 3)
- RELT 444 Christian Mission (2, 3)
- RELT 447 Cross-cultural Ministry (2, 3)
- RELT 464 Paul's Message in Romans (2, 3)
- RELT 464 Paul's Message in Romans (2-3)
- RELT 474 Love and Sex in the Bible (2, 3)
- RELT 475 Spirituality and the Contemporary Christian (2, 3)
- RELT 476 The Bible and Ethics (2, 3)

## **Domain 2: Scientific Inquiry and Analysis (24-32 quarter units)**

### **Natural Sciences**

- AHCJ 101 Introductory Chemistry (4)
- AHCJ 102 Introductory Organic Chemistry (4)
- AHCJ 103 Introductory Biochemistry (4)
- AHCJ 111 Introductory Physics (4)
- AHCJ 112 Introductory Physics (4)
- AHCJ 235 Essentials of Human Anatomy and Physiology (4)
- AHCJ 235L Essentials of Human Anatomy and Physiology Laboratory (1)
- AHCJ 241 Microbiology (2.5)
- AHCJ 242 Microbiology (2.5)
- AHCJ 250 Human Anatomy and Physiology I (5)
- AHCJ 251 Human Anatomy and Physiology II (5)
- AHCJ 351 Statistics for the Health Professions (3)
- AHCJ 402 Pathology I (4)
- AHCJ 403 Pathology II (3, 4)
- AHCJ 418 Physiology I (4)
- AHCJ 471 Statistics and Research for Health Professionals I (3)
- AHCJ 472 Statistics and Research for Health Professionals II (3)
- AHCJ 475 Health Care Research and Statistics (4)
- BCHM 306 Introduction to Organic and Biochemistry (6)
- CMSD 304 Hearing Science (4)
- CMSD 376 Anatomy of Speech-Hearing Mechanism (4)
- DNHY 390 Introductory Statistics (2)
- ENVH 414 Introduction to Environmental Health (3)
- EPDM 414 Introduction to Epidemiology (3)
- STAT 414 Introduction to Biostatistics I (3)
- STAT 415 Computer Applications in Biostatistics (1)
- STAT 464 Survey and Advanced Research Methods (4)

### **Social Sciences**

- AHCJ 305 Infectious Disease and the Health Care Provider (1)
- AHCJ 315 Psychosocial Aspects of Health Care (3)
- AHCJ 324 Psychosocial Models and Interventions (2)
- AHCJ 325 U. S. Health Care Delivery System (2)
- AHCJ 328 Wholeness Portfolio I (1)
- AHCJ 331 Human Resource Management (3)
- AHCJ 407 Financial Management (2)
- AHCJ 408 Health Care Management (4)
- AHCJ 415 Educational Psychology for Health Professionals (3)
- AHCJ 421 Psychology of Physical Disability (2)
- AHCJ 461 Research Methods (2, 3)
- AHCJ 498 Wholeness Portfolio II (1)
- AHCJ 575 Couples, Families, and Disabilities (3)
- ANTH 304 Biological Anthropology (4) (meets diversity requirement)

ANTH 306 Language and Culture (4) (meets diversity requirement)  
 ANTH 315 Cultural Anthropology (4) (meets diversity requirement)  
 ANTH 316 Archaeology (4)  
 ANTH 436 Cultural Contexts of Religion (4) (meets diversity requirement)  
 ANTH 448 Medical Anthropology (4) (meets diversity requirement)  
 CMSD 377 Bilingualism and Biculturalism I (2) (meets diversity requirement)  
 DNHY 414 Personal Finance (2)  
 ENVH 422 Principles of Geographic Information Systems (4)  
 HPRO 431 Psychology and Sociology of Sport (3)  
 PHCJ 401 Essentials of Public Health (4)  
 PSYC 226 Lifespan Development (4)  
 PSYC 305 Psychological Foundations of Education (4)  
 PSYC 404 Psychological Tests and Measurements (3)  
 PSYC 405 Psychology of Human Relations (2,3)  
 PSYC 460 The Exceptional Individual (3)  
 PSYC 479 Human Neuropsychology (4)

### **Domain 3: Communication (9-13 quarter units)**

AHCJ 144 Professional Literacy for Nonnative Readers (3)  
 AHCJ 308 Professional Communications (1, 2)  
 AHCJ 311 Medical Terminology (2)  
 AHCJ 405 Dynamics of Learning and Teaching (2)  
 AHCJ 426 Introduction to Computer Applications (2)  
 AHCJ 432 Database Management (2)  
 AHCJ 433 Database Management II (2)  
 AHCJ 464 Group Process and Dynamics (3)  
 AHCJ 465 Seminars in Leadership (2)  
 AHCJ 569 Computers and Electronics for Clinicians (3)  
 DNHY 499 Research Writing (2)  
 ENGL 300 Research Writing for Health Care Professionals (2)  
 STAT 439 Fundamentals of Microcomputer Usage (1)  
 WRIT 324 Writing for Health Care Professionals (2)

### **Domain 4 Health and Wellness (2-6 quarter units)**

DTCS 301 Human Nutrition (3)  
 DTCS 311 Human and Clinical Nutrition for Nursing (4)  
 DTCS 312 Clinical Nutrition for Nursing (2)  
 HPRO 414 Personal Health and Fitness (4)  
 HPRO 415 Consumer Health (3)  
 HPRO 416 Health through the Lifespan (4)  
 NUTR 474 Nutrition and Fitness (3)  
 PEAC 110 Independent Activities (0.5)

### **Domain 5: Electives**

Electives from Domains 1-4 may be selected to complete the general education minimum requirements of 68 quarter units.

## **LOMA LINDA UNIVERSITY GENERAL EDUCATION COURSES—ONLINE AND BOOKLET**

A complete listing of courses offered each academic term at this University to meet general education domain requirements is included on the Loma Linda University Web site at <[llu.edu/central/ssweb](http://llu.edu/central/ssweb)> under the course schedules.

By linking from Course Schedules to General Education Brochure and Course Descriptions, the student has access also to the entire list of general education courses and course descriptions. This list is also available at the above Web site as a printable booklet — "Loma Linda University General Education Philosophy, Requirements, and Courses."

## **SCHOOL AND PROGRAM-SPECIFIC GE REQUIREMENTS**

For additional information about specific general education requirements, see the desired schools and programs—Section III of this CATALOG.

## Student Life

The information on student life contained in this CATALOG is brief. The most current *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies, and is available to each registered student. Students need to familiarize themselves with the contents of the *Student Handbook*. Additional information regarding policies specific to a particular school or program within the University is available from the respective school.

### FROM UNIVERSITY TO STUDENT

Loma Linda University was established to provide education in a distinctively Christian environment. Students are expected to respect the standards and ideals of the Seventh-day Adventist Church. Prospective students have the freedom to choose or reject University or school standards, but the decision must be made before enrollment. Application to and enrollment in Loma Linda University constitute the student's commitment to honor and abide by the academic and social practices and regulations stated in announcements, bulletins, handbooks, and other published materials; and to maintain a manner that is mature and compatible with the University's function as a professional institution of higher learning.

It is inevitable that the student will come under question if academic performance is below standard; student duties are neglected; social conduct is unbecoming; or attitudes demonstrate deficiencies such as poor judgment, moral inadequacy, or other forms of immaturity.

Procedures for evaluation of academic and nonacademic performance—as well as for the student to exercise his/her right of appeal—are described in the current CATALOG and in each school's section of the *Student Handbook*. Grievances regarding both academic and nonacademic matters must be processed according to these published grievance procedures. After a student files an appeal or grievance, the faculty assesses the student's fitness for a career in the chosen profession and recommends to the dean appropriate action regarding the student's continuance or discontinuance.

Prospective students who have questions concerning the University's expectations should seek specific information prior to enrollment.



## **WHOLE PERSON HEALTH**

The University regards the student from a cosmopolitan and comprehensive point of view. It is cosmopolitan in that historically the University's global mission has promoted bonds and opportunities in education and service without regard to gender, or to national, racial, or geographical origin. It is comprehensive in that the University's concern for the welfare of the student traditionally has been an integrated concern for assisting the student toward whole person health—balanced development of spiritual, social, physical, and mental health. Cultivating the health of any one part enhances the health of all parts. Neglecting or abusing the health of one harms the health of all. Before one can experience whole person health, there must be a practical appreciation of the interdependent interaction of each part of the whole.

Students from all schools of Loma Linda University may congregate and participate in the multifaceted programs offered that involve the holistic concept of social, intellectual, physical, emotional, and spiritual wellness. These programs support Loma Linda University's motto, "To make man whole."

### **Spiritual health**

In addition to personal quiet times, opportunities for the student to further develop rich, personal spiritual resources are provided in scheduled religious exercises and activities and in informal association with others who cherish spiritual values. Religion classes as well as weekly chapel services are part of the required curriculum.

### **Social health**

Situated within easy access of the ocean, mountains, and desert, the University provides numerous opportunities for students to complement their formal learning through participation in a wide variety of recreational, cultural, and other activities. A variety of University-, school-, and group-sponsored events encourages students to relax and become better acquainted with one another. Through these activities and events, students can enrich their group interaction and leadership experiences, increase their enjoyment of and interest in fields outside their profession, develop their talents, enhance wholesome and memorable association with others, and cultivate supportive and lifelong social relationships.

### **Mental health**

The University promotes mental health by encouraging students to study and practice principles of sound psychological health and to access state-of-the-art counseling and mental health services, as needed.

### **Physical health**

The University promotes physical fitness by encouraging recreational interests and by providing courses in field exercises, body building, and health instruction. An effort is exerted to interest each student in some recreational and health-building activity that may be carried over to enhance future life.

## RECREATION/WELLNESS: THE DRAYSON CENTER



The Drayson Center serves as the focal point for recreation and wellness at Loma Linda University. Encompassing 100,000 square feet, the facility offers a plethora of fitness options to promote physical, intellectual, social, emotional, and spiritual wholeness. The Drayson Center showcases a 21,000 square-foot multipurpose gymnasium that can accommodate three full-size basketball courts, five volleyball courts, or nine badminton courts. Circling the gymnasium's interior is an elevated three-lane running track. Five racquetball courts and six outdoor tennis courts are available for play. Aerobics studios and cardiovascular rooms can accommodate anything from pilates, cycling, and Zumba classes, to strength training, sports conditioning, and bodybuilding—and everything in between.

An outdoor aquatics center includes a heated ten-lane lap pool, leisure pool, and jacuzzi, along with a 22-foot high water slide and recreational pool. Saunas are installed in the fully-equipped men's and women's locker rooms. A 400,000 square-foot outdoor multipurpose recreational area hosts four softball fields, a half-mile track, a beach volleyball court, and numerous picnic and game areas.

The Drayson Center also offers personal training services, massage therapy, and a variety of leisure classes, such as ballet and karate. Two conference rooms are available for hosting meetings, exhibitions, and banquets. The Drayson Center's XRtainment Zone turns video and computer games into fun and entertaining exercise for children. This full-service facility serves to promote health and wellness to Loma Linda University students, staff, faculty, and the surrounding community.

### THE STUDENT HEALTH SERVICE

Professional services are rendered by the Student Health Service, which provides basic care to students. The Student Health Service is located in the Center for Health Promotion in Evans Hall, corner of Stewart and Anderson streets. The hours are Monday through Thursday, 8 a.m.-5 p.m.; Friday, 8 a.m.-2 p.m. Services are free to students.

## **LOMA LINDA UNIVERSITY STUDENT HEALTH PLAN**

The University-sponsored Student Health Plan is designed to provide comprehensive medical coverage for the student and his/her eligible dependent(s). It is not an insurance program. The plan includes coverage for hospital care, surgery, emergency care, prescription drugs, and more. Generally, to be eligible for reimbursement under the provisions of the plan, expenses must be incurred while coverage is in effect. Expenses incurred before plan coverage becomes effective or after plan coverage has terminated will not be covered. This plan will only provide medical coverage on an excess basis. This means that all medical expenses must first be submitted to any other available source of health care coverage. There is no vision or dental coverage available. Please see the Loma Linda University Web site for Student Health Services for a complete explanation of the Student Health Plan (<llu.edu/central/studenthealth>).

### **Enrollment**

The enrollment form must be returned to Risk Management as specified in order to gain access to the services provided.

### **Preferred provider plan**

The health plan has been developed as a PPO (preferred provider) plan. Benefits for services utilized outside the preferred provider structure will be reduced.

### **Plan year**

The plan benefit year is a fiscal year and runs from July 1 through June 30.

### **Pre-existing condition exclusion**

If a student or patient has not maintained continuous "creditable coverage" under another health plan during the twelve months prior to the student's date of enrollment, or prior to the coverage effective date, the following pre-existing condition exclusion will apply: This plan will not cover any medical condition, illness, or injury for which medical advice, diagnosis, care, or treatment was recommended or received by the student or patient during the six months prior to the student's date of enrollment or during the six months prior to the effective date of health plan coverage. Treatment includes receiving services and supplies, consultations, diagnostic tests, or prescribed medications. This exclusion will apply for twelve months from the coverage effective date, or date of enrollment if the individual was enrolled at the time of enrollment to the University, unless such an individual remains treatment free during the six-month term beginning with the date of enrollment or effective date of coverage. If the individual remains treatment free during this six-month term, the pre-existing condition exclusion will apply only during this six-month period. This exclusion will not apply to pregnancy-related medical expenses or to medical treatment for a newborn or adopted child. (A student who was covered by another health plan prior to enrollment at this University should read the following section entitled "Health Insurance Portability and Accountability Act.")

A student who has a pre-existing condition should check with any prior insurer to obtain complete information regarding his/her rights to COBRA coverage during this pre-existing condition exclusion period.

### **Health Insurance Portability and Accountability Act (HIPAA)**

If a student has been covered under a medical plan during the past twelve months, all or part of the pre-existing condition exclusion may be waived when s/he comes under the University plan. In order for a determination to be made regarding the student's coverage, the former insurance company or employer

must provide to Risk Management a certificate verifying the previous coverage. If the student has any pre-existing medical conditions, it is imperative that this certificate be returned to Risk Management along with the health plan enrollment form.

## Eligibility

A student is eligible for benefits if s/he:

- Is attending Loma Linda University as a graduate or undergraduate student; and
- Is a degree-track student. A student who is accepted into a degree program and who is registered for more than 0 units will be charged the enrollment fee regardless of the number of units for which s/he is registered.
- Is a nondegree student registered for more than 4 units. A student who is not accepted into a degree program but who is registered as a nondegree student for more than 4 units will be charged the enrollment fee. However, a nondegree student registered for 4 units or fewer will not be charged the fee and will not be eligible to buy into the Student Health Plan.
- Was previously covered under the plan and is on an approved leave of absence from his/her academic program.
- Is an IP-only student. A student who is working on "In Progress" courses and who is not registered for any other units will be charged the enrollment fee.

## Additional information regarding eligibility

- A student who drops all units before the deadline will not be charged for or covered by the plan. Any student who is charged the enrollment fee and drops all units before the last day for a full refund (generally one week after the first day of classes) will receive a full refund of the enrollment fee and will have no access to any University benefits. Please refer to the Student Finance 100-percent refund policy.
- LLUAHSC employees who are "full-time, benefit eligible" will not be charged the enrollment fee. The fee will not apply, regardless of whether or not employees are using the education benefit. Spouses of employees who are using the employee education benefit will be charged the enrollment fee.
- Students participating in an off-campus or online program will not be charged the enrollment fee unless specifically required by the program.
- An eligible student's coverage will become effective on the first day of class or student orientation, whichever occurs first.

## Buy-in provision

Under the following provisions, a student may obtain coverage under this health plan or extend coverage to a spouse or dependent children each quarter. In order to receive any coverage under this plan, a student must apply for coverage during an open-enrollment period—within thirty days of a status change (i.e., within thirty days of marriage or within thirty days of the birth of a child) and pay the appropriate quarterly student contribution, as outlined below:

1. Spouse/Dependent children. If a student is covered under this plan, s/he may extend health plan coverage to his/her spouse or dependent child(ren).

2. Leave of absence (LOA). If a student has been covered under the plan up until immediately prior to leaving school on an approved leave of absence (LOA), s/he may extend coverage under the plan for the length of the approved LOA, up to a maximum extension of one year.
3. Continuation coverage. If a student has been covered under this plan but no longer meets the eligibility requirements (for example, s/he did not attend classes during any quarter, including Summer Quarter), s/he would be able to continue coverage for his/her eligible dependents for up to one quarter through this buy-in provision.

The open-enrollment period for eligible students and dependents is the last two weeks of each calendar quarter. Buy-in coverage will be effective from January 1 to March 31, April 1 to June 30, July 1 to September 30, and October 1 to December 31. No invoices or reminders are sent to students who are buying into the plan. The Department of Risk Management cannot add Student Health Plan fees to the student's account. All payments must be made by check or money order. A newborn child must also be enrolled in the plan within thirty days of birth or adoption in order to receive any coverage under this plan. There is no automatic or temporary coverage provided for any dependents, including adopted or newborn children.

Extension/Continuation coverage—A fee of \$390 per quarter for the student plus one of the amounts below for dependents is charged for extension/continuation coverage:

- One dependent (spouse or child) of a covered student—\$420 per quarter
- Two or more dependents—\$840 per quarter

### **Prescription drug coverage**

Each enrolled student will be given a CVS/Caremark health care identification card, which can be used at any participating pharmacy displaying the CVS/Caremark decal. The cost of the prescription will be billed directly to the plan after the student pays a copayment. Prescriptions filled through CVS/Caremark will be limited to a maximum of a thirty-day supply. The copayment amounts will be \$15 for generic drugs and \$30 for brand-name\* drugs that are dispensed at the health plan's preferred pharmacies: the LLUMC Pharmacy, the Campus Pharmacy (located in the Loma Linda Market), the Faculty Professional Pharmacy (located in the Faculty Medical Offices), and the LLU Community Pharmacy.

If the prescription is filled at any other participating CVS/Caremark pharmacy, there will be a \$25 copayment for generic products or a \$40 copayment for brand-name\* drugs. Prescriptions not filled by the CVS/Caremark system will not be covered under the plan. There is a \$5,000 maximum deductible per individual per fiscal plan year.

\*The copayment when a name brand is purchased because no generic substitute is available; however, if a student chooses a name brand over a generic drug, the student will be responsible for the generic copayment plus any difference in cost between the two medications.

### **Utilization review**

All services that require preadmission review or prior authorization must be processed through the Department of Risk Management. The types of services that require prior authorization include:

- Hospital admissions
  - Scheduled admissions must be authorized prior to entrance to the hospital. In the case of emergency admissions, notification must be made the next business day; or if admission occurs on the weekend, within 48 hours.

- All outpatient surgeries
- Home health services, skilled nursing facilities
- Orthotics and purchase or rental of durable medical equipment

Please refer to the plan document for a complete description of required authorizations. Participants in this plan must follow the preadmission review process in order to receive full hospitalization benefits. If a participant does not follow the preadmission review process, hospitalization benefits will be reduced by 50 percent.

In order to fully understand plan benefits, students need to obtain a University Student Health Plan Document, which describes all of the plan coverage, limitations, and exclusions. Questions regarding the plan should be directed by telephone to the Department of Risk Management at 909/558-4386.

### **MALPRACTICE COVERAGE**

Students are covered by malpractice insurance while acting within the course and scope of any approved clinical assignment.

### **DISABILITY INSURANCE**

All students in the School of Medicine and the School of Dentistry are automatically enrolled in a disability insurance program while enrolled at this University. This program provides limited disability insurance for students while in the program and also allows for conversion to an individual disability insurance policy at the time of graduation. Details of this program are available from the School of Medicine or the School of Dentistry.

### **COUNSELING AND HEALTH SERVICES**

#### **Loma Linda University Student Counseling Program**

The University Counseling Center offers a variety of private, confidential services to students and their families—including individual, premarital, marital, and family counseling; as well as medication treatment. Counselors use practical, problem-solving strategies to help students deal more effectively with stresses of school and personal life in a healthy and healing way.

The program is staffed by members of Loma Linda University's Department of Psychiatry, which includes psychiatrists, psychologists, licensed clinical social workers, and marriage and family therapists.

To schedule an appointment or for more information, call 909/558-6028 or campus extension 66028. Full-time students receive up to nine free visits.

The University Student Counseling Center is located at 11374 Mountain View Avenue (Dover Building) in Loma Linda.

#### **Loma Linda Student Assistance Program**

The Loma Linda Student Assistance Program (LLSAP) provides professional and caring assessment and treatment for a variety of personal, family, work, and school-related issues. The LLSAP clinicians will develop a treatment plan that may include free short-term counseling. All LLSAP services are free of charge.

If more extensive treatment is appropriate, the client is referred to a community therapist who specializes in the student's area of concern and who is covered by the student's health plan. All

information is confidential. Community therapists and LLSAP clinicians will not release information without the written consent of the student, with the exception of matters that fall under mandatory reporting laws.

The LLSAP, the only nationally accredited student assistance program in California, has provided state-of-the-art services to students since it was established in 1990.

Appointments may be scheduled during office hours by calling on-campus extension 66050 or 909/558-6050: Monday through Wednesday, 8 a.m.-5 p.m.; Thursday, 8 a.m.-7 p.m.; Friday, 8 a.m.-1 p.m. Additional appointment times may be available upon request.

The program is located in the Hartford Building, 11360 Mountain View Avenue, Suite A, Loma Linda.

## **Loma Linda University Student Health Services**

Loma Linda University Student Health Services is committed to providing quality care to students and assisting with students' special needs. Services provided by the qualified team of physicians, nurses, and support staff include primary care, women's health, immunizations, health education, counseling or referral to counseling services, and referral to specialty services.

Student Health Services is located in Evans Hall, room 111. The hours of operation are Monday through Thursday, 8 a.m.-12 noon., 1 p.m.-5 p.m.; Friday, 8 a.m.-1 p.m. To schedule an appointment or for more information, call 909/558-8770.

## **GOVERNING PRACTICES**

At Loma Linda University, nonacademic policies have been established that help foster a fulfilling University experience. Students are expected to uphold these policies, which govern nonacademic student life on and off campus. Information in this section of the CATALOG, as well as in Section III and in the *Student Handbook* pertains to requirements governing all students. The student is reminded of individual responsibility to be fully informed of the general and specific requirements of his/her school and program.

### **Identification number and card**

All accepted students will be assigned a unique University identification number. This seven-digit number will be used on all correspondence and noted on all payments to the University. A University identification card using this identification number and a bar code will be issued to each student after s/he completes initial registration and financial clearance.

The identification card allows access to various student services, including the libraries, Student Health, recreation facilities (i.e., the Drayson Center), parking, etc. Also, the bar code on the card allows currently enrolled and financially cleared students to charge against their accounts at the Campus Bookstore and campus cafeterias, and for ticket sales available through the Student Services office. In subsequent quarters, the card's bar code is automatically reactivated at each registration upon financial clearance.

For further information regarding these identification cards, please contact Student Services.

### **Residence hall**

The University is coeducational and accepts both single and married students. Any single student who prefers to live on campus may do so. Students are expected to live on campus unless they are:

- married,
- twenty-one years of age or older,

- in a graduate program, or
- living with their parents.

Students who wish to live off campus but who do not meet one of the foregoing requirements may petition the vice president for student services for a possible exception. This should be done well in advance of registration to allow the student adequate time to plan. Additional information about campus housing can be obtained from the housing Web site at <llu.edu/central/housing>.

The student must keep the University informed of his or her current address and telephone number and other contact numbers.

### **Marriage**

A student who marries or changes marital status during the academic year must provide the school with advance written notification of the change in status in order to keep school records correct and up to date. Students should make every effort to schedule their wedding ceremonies during academic recesses.

### **Name change**

Currently enrolled students may change their names on University records when they provide evidence (e.g., certified copy of a marriage certificate) that the name change is official. In addition to filing a Request for Change of Name on University Records form with the Office of University Records, the student must present a current ID card or other form of picture ID with his or her name as it appears on University records, along with official documentation of the name change.

Name changes must be processed no later than six months prior to graduation if the new name is to appear on the diploma.

### **Professional apparel**

Clinic and laboratory apparel are distinctive articles of dress specified by the department or school and are to be worn only in the manner prescribed and under the conditions specified in the school or department dress code. Student uniforms are to be maintained in clean, presentable condition. Information on the required professional dress is provided in Section III of this CATALOG and in the University *Student Handbook*.

### **Personal appearance**

Students in the classroom or clinical environment must exhibit personal grooming consistent with expectations of the health care institution, the profession, the school, and the University. Specific guidelines regarding grooming and attire are provided in Section III of this CATALOG and in the University *Student Handbook*.

### **Personal property**

The school assumes no responsibility for the loss of the student's personal property, instruments, or other items by theft, fire, or unknown causes. The student is expected to assume responsibility for the safekeeping of personal belongings.

### **Cars and transportation**

Because the student is responsible for transportation arrangements and costs for special projects and off-campus clinics, it is advantageous for the student to have access to a car.

The University enforces traffic rules and regulations as provided for by the State of California Vehicle Code. It is the sole responsibility of the driver of any vehicle on University property to become familiar with these regulations. Drivers are held responsible for any infraction of the regulations. Copies of the brochure entitled "Loma Linda University Traffic and Parking Regulations" are available at the Department of Security.

Vehicles used by students on campus must be registered with the Department of Security. Returning students must go to the Department of Security annually in September to renew registration.

## **Confidentiality**

The Health Insurance Portability and Accountability Act (HIPAA) of 1996 requires that all health care professionals maintain the highest level of confidentiality in matters pertaining to clients. Discussions or written assignments relating to client information, either health related or personal, may not include identifying data. Clients' privacy and rights are to be protected.

Failure to maintain confidentiality could result in legal action. For additional information, see "Introduction to HIPAA" at [home.mc.llumc.edu/Departments/LLUHS-Departments/HIPAA-Information/HIPAA-Help/Introduction-to-HIPAA/Index.html](http://home.mc.llumc.edu/Departments/LLUHS-Departments/HIPAA-Information/HIPAA-Help/Introduction-to-HIPAA/Index.html).

## **Substance abuse**

As a practical application of its motto, "To make man whole," Loma Linda University is committed to providing a learning environment conducive to the fullest possible human development. Because the University holds that a lifestyle free of alcohol, tobacco, and recreational/illegal drugs is essential for achieving this goal, it maintains policies that foster a campus environment free of these substances.

All students are expected to refrain from the use of tobacco, alcohol, or recreational or illegal mind-altering substances. Possession or use of these substances may be cause for dismissal.

For details regarding the University's drug-free environment—as well as information regarding prevention, detection, assessment, treatment, relapse prevention, confidentiality, and discipline—see the Loma Linda University *Student Handbook*, Section V, University Policies: Alcohol, controlled substances, and tobacco policy.

## **Sexual harassment**

Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the well-being, educational experience, or careers of students, faculty, employees, and patients.

Because of the sensitive nature of situations involving sexual harassment and to assure speedy and confidential resolution of these issues, students should contact the office of the dean in their respective schools.

A more comprehensive statement of the policy regarding sexual harassment and sexual standards can be found in the Loma Linda University *Student Handbook*, Section V, University Policies.

## **Employment**

It is recommended that students limit work obligations (outside employment for income) that divert time, attention, and strength from the arduous tasks of class preparation, clinical practice, and/or training in their chosen career. A student wishing to work during the school year should consult the Office of the Dean of the school in which s/he is enrolled regarding employment restrictions or prohibitions.

### **Employment for international students**

International students must obtain written authorization from International Student and Scholar Services before accepting any on-campus employment. Off-campus employment requires prior issue of a work permit by the Bureau of Citizenship and Immigration Services. F- and J-visa students must limit their employment to twenty hours or less per week while registered for courses and while classes are in session during three of four quarters in an academic year. Regulations allow full-time work (forty hours or less per week) during school breaks and summer vacations (if students' programs allow summer quarters off). For questions, please telephone International Student and Scholar Services at 909/558-4955.

### **ACADEMIC AUTHORITY**

The Office of the Dean of the school in which the student is enrolled is the final authority in all academic matters, with the exception of general education requirements, and is charged with the interpretation and enforcement of academic requirements. Any exceptions or changes in academic requirements, graduation requirements, or grades are not valid unless approved by the dean. Any actions taken by individual faculty members with regard to these matters are advisory only and are not binding on the school or the University unless approved by the dean.

### **ACADEMIC INTEGRITY**

The academically dishonest act considers that academic dishonesty intentionally violates the community of trust upon which all learning is based, intentionally compromises the orderly transfer of knowledge from teacher to student, and is inconsistent with good professional and moral behavior. Accordingly, the penalty for academic dishonesty is severe.

Acts of dishonesty include but are not limited to:

- theft;
- falsifying or changing grades or other academic records;
- plagiarism or excessive paraphrasing of someone else's work;
- knowingly giving, obtaining, or falsifying information during examinations or other academic or professional practice assignments;
- using unauthorized aids during examinations;
- loud and disruptive behavior during lectures, demonstrations, or examinations;
- excessive unexcused absences from classes or from clinical assignments.

"Examinations" are defined as regularly scheduled tests, quizzes (scheduled or unscheduled), final examinations, comprehensive assessments, take-home tests, open-book tests, and any other assignment given by an instructor or preceptor whether for a grade, points toward a grade, or for zero points (e.g., a learning exercise).

Instructors and students are responsible for reporting instances of academic dishonesty for investigation. An instructor may take immediate action during an examination or other point-generating activity in order to maintain the integrity of the academic process. Substantiated violations are to be brought before the designated disciplinary body for action. Disciplinary action may include receiving a failing grade on the examination or assignment, receiving a failing grade in the course, suspension, or permanent dismissal from the program.

## CONDUCT

Students are expected to conduct themselves in a professional manner during didactic and clinical training. Professional conduct includes (but is not limited to) punctuality; and respect for other people, their property, and their right to learn. It also includes an appropriate respect for those in authority. Students of Loma Linda University are expected to behave in a manner that will not bring criticism upon themselves, the program, the school, or the University.

Because students may be exposed to patients' relatives and friends in any public place, and because their conversations and their attitudes have an effect on those around them, students are asked to observe the following:

- Any information given to the student by a patient or contained in a medical record must be held in strict confidence. Therefore, the discussion of a patient's diagnosis and treatment or other clinically related topics should be extremely guarded. A patient's family and community people may be listening and may incorrectly interpret the things discussed. Careless talk may lead to malpractice litigation.
- A joking or casual attitude toward illness and medical treatment should not be displayed since it may seem uncaring and be disturbing to those who are ill and suffering, as well as to the family members.
- Student and staff behavior in professional situations may be the deciding influence for or against Christian beliefs, values, and a health-enhancing lifestyle.

An in-depth description of the professional conduct expected of students is contained in the Loma Linda University *Student Handbook*.

## GRIEVANCE PROCEDURE

Grievances related to sexual harassment, racial harassment, or discrimination against the disabled shall be pursued in accordance with University policies specifically relating to these items. Grievances related to academic matters or other issues covered by specific policies shall be made pursuant to the policies of the school in which the student is enrolled. A student who questions whether the process provided by the school has followed the policy of the school in regard to his/her grievance may request the Office of the Provost conduct a review of the process used by the school in responding to his/her academic grievance.

Students who believe that an error has been made or that they have been dealt with in an inappropriate manner by an office or nonacademic department of the University such as records, student finance, student affairs, health services, Drayson Center, etc., may seek correction by the following steps:

1. The student may put his/her complaint in writing and provide it to the head of the department or office involved. The student may request an appointment and discuss this matter with the department head. The department head will make a decision and provide a written answer to the student within fourteen days of receiving the student's written complaint or meeting with the student, whichever is later. If the answer is not satisfactory to the student, s/he may—
2. Put the complaint in writing and send it to the dean of student affairs for review. The matter will be considered at the next meeting of the dean's council, and the student will be informed in writing of the council's response within seven days of the council's consideration of the complaint.

## **COPYRIGHT VIOLATIONS**

The copyright law of the United States (Title 17, USC) governs the making of photocopies or other reproductions of copyrighted material. Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for or later uses a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement. This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

## **COMMUNICATION DEVICES**

All communication devices must be set to "off" or "vibrate" during class, laboratory, clinic, or chapel. No cell phones, PDAs, calculators, laptops, or other electronic or communication items may be used in the classroom, testing facility, or laboratory unless specifically a part of that activity and approved by the faculty member in charge.

# Academic Policies and Information

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. In this section (Section II) are the University regulations. See Section III for regulations that pertain to each school and program.

## REGISTRATION

Registration dates are published on the Web at <llu.edu/ssweb/registration.html>. The Web should be checked for specific dates of registration, since these dates vary during some quarters due to holiday schedules. Posted deadlines for registration and change of registration are in effect and binding.

After consultation with their academic advisor, students register online. Registration procedure includes entering classes online and clearing finance. Students are advised to print the Request for Clearance Submitted form from the Web in order to retain written documentation that they have requested financial clearance. Upon completion of registration, the student must obtain an ID card at the University Office of Student Affairs (first quarter registration only).

A late registration period of at least a week prior to the beginning of the quarter and extending to five days after the quarter begins is provided, during which a late-registration fee of \$50 will be charged, unless the course is offered as an intensive that requires registration before the end of the first day of class.

Students may not attend class without being registered. No credit is granted for academic work performed during any quarter without registration.

## Change in registration

A change in registration requires filing a Registration Change Request (Add/Drop) form with the Office of University Records. Students receive written verification each time a change of program is officially approved. Students are advised to retain this written verification as documentation of their registration.

A student may add courses that follow the general University calendar during the first seven calendar days of the quarter. Courses that follow the general University calendar may be dropped during the first fourteen days of the quarter without academic penalty. Course changes after the fourteenth day of the quarter affect the permanent grade record. Students may withdraw from a course prior to the fourteen calendar days before the final examination week, after which time withdrawals are no longer permitted.

## Study load

Usually an academic study load is defined in terms of credit units. A full undergraduate load is considered to be 12 or more units per quarter; a full graduate load is considered to be 8 units per quarter.

The normal course load, including all course work for which a student may be registered at this or another institution, is 16 quarter units for an undergraduate student and 12 quarter units for a graduate student. Full-time study loads are those specified by the departments for each program. Students of exceptional ability may register for additional course work upon recommendation of the department and consent of the dean.

A person who is not enrolled in regular classes but who is occupied in research, dissertation, or thesis, is classified as a student. By filing an Academic Load Validation form every quarter at registration, the academic load may be validated for loan deferment.

## STUDENT LEVEL

Students enrolled in a professional program in which they are classified as freshman, sophomore, junior, or senior will be classified according to the level of the course work they are taking (e.g., a student with a previous baccalaureate degree pursuing another baccalaureate degree would be classified as a sophomore while taking sophomore-level courses, etc.).

Students enrolled in block programs are classified according to the level of the block in which they are enrolled (e.g., master's-1st, 2nd, or 3rd year; or freshman, sophomore, junior, senior, as is appropriate for the degree program; or PY1 [professional year 1]).

## COURSE NUMBERS

Courses are numbered as:

001-099	nondegree-applicable credit
101-299	lower division
301-499	upper division
501-599	graduate
601-699	graduate: seminar, research, thesis, or dissertation
701-899	professional or clinical
901-999	extension with credit; continuing education units, if preceded by letter prefix ending with "CE" (e.g., ASCE 916); without academic credit; or undergraduate certificate clinical affiliation/practicum courses

500-level course work may not apply toward a baccalaureate degree unless the instructor approves it, and both deans (dean of the school offering the course and dean of the school in which the student is enrolled) give permission; and provided the credit does not apply toward both an undergraduate and a graduate degree. Approval is not needed if the course is part of a coordinated program.

No courses numbered in the 700s, 800s, or 900s may apply toward a baccalaureate degree.

## UNIT OF CREDIT

Credit is recorded in quarter units. One unit represents a minimum of ten class hours in lecture or thirty hours in laboratory practice.

## ATTENDANCE

Regular attendance at all appointments (class, clinic, laboratory, chapel) is required beginning with the first day of each term. A pattern of absence, excused and unexcused, will be referred to the school's designated academic authority for consideration and action.

Excused absences are defined as follows:

- Illness, verified by a physician's statement or official statement from Student Health Service submitted to the school's designated academic authority;
- Participation in an institution-sponsored activity (verified by a written statement from a faculty sponsor);
- Recognizable emergency approved by the school's designated academic authority.

Tardiness is disruptive, distracting, and inconsistent with professional behavior. Students who arrive after the beginning of class may be counted absent.

Information regarding the school's designated academic authority can be obtained from the Office of the Dean.

### **COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)**

The College Level Examination Program (CLEP), a national program of credit by examination, offers persons of all ages and backgrounds new opportunities to obtain recognition for college-level achievement, no matter how acquired.

As of July 2001, general examinations are no longer offered; however, the policy remains in effect for students who took general examinations prior to that date. No credit is granted for the CLEP general examinations in English composition, mathematics, or science courses requiring a laboratory.

As of July 1, 2004, in order to receive Loma Linda University credit, students must complete all examinations for CLEP credit within six months after having received their initial degree compliance report. A student will be allowed to challenge a given course by examination only once. CLEP scores will be accepted at C or better until percentiles are available from CLEP. Credit is granted for scores at or above the 50th percentile for the subject examinations, and at the 65th percentile for general examinations in the humanities, natural sciences, and social sciences/history.

### **CREDIT BY EXAMINATION**

For certain courses offered by the University, a student in an undergraduate degree program may earn credit by passing an equivalency examination administered by the appropriate school and department. Such an examination is at least equal in scope and difficulty to a final examination in the course and may include materials supplied by CLEP or other agencies.

A graduate program should be used to acquire new knowledge. Since the purpose of credit by examination is to validate prior knowledge, graduate credit may not be earned by examination. If a required course in the degree program is a repeat of prior learning, the student may request a waiver, thus making it possible to take elective courses that would increase knowledge.

A student currently enrolled in a degree program at this University who desires credit by equivalency examination petitions the dean of the school offering the course, and, upon approval, pays a testing fee. See Schedule of Charges in the Financial Information section for examination fee.

Equivalency examinations may not duplicate credit already earned through course work, including courses taken for audit.

A grade of CR (Credit) is given only after the student has completed one quarter, or the equivalent, at this University; and has earned 12 units of credit with a grade point average of at least 2.0 in undergraduate courses.

Units earned by equivalency may not be used as part of the enrolled load.

Equivalency examinations must be taken before the final quarter of residency.

The maximum amount of credit that may be earned by equivalency examination is determined by each school but may not exceed a maximum of 20 percent of the units required for the degree or certificate.

### **COURSE WAIVER**

Certain course requirements in a program may be waived on the basis of previously completed course work, experience, or licensure. An examination for waiver credit, if required, may be taken only once and must be taken before the last quarter of the program of study. Waiver of a specific course requirement does not reduce the number of units required for a program or residency. A waiver examination does not carry academic credit and cannot be used to make up for a course in which an unsatisfactory grade was received. For examination fee, see Schedule of Charges in the Financial Information section.

Permission to waive a course requirement in the School of Pharmacy requires prior approval of the department chair and consent of the dean.

### **INDEPENDENT STUDY**

Independent study may be undertaken subject to the consent of the department chair and/or the Office of the Dean. The student is responsible for completion of the Directed/Independent Study Title Request form in addition to the regular registration. University policy limits directed study to 12 quarter units of undergraduate credit and 8 units of graduate credit in a degree program. Individual programs may further limit these units. The Office of the Dean should be consulted regarding limits on credit earned through independent study. Independent study is to be completed in adequate time before graduation to allow recording in the Office of University Records.

### **EXTENSION STUDY**

To be acceptable for credit, an extension course must be evaluated as to its equivalence to an accepted course. To assure that the course will transfer to Loma Linda University, the student should contact the Office of University Records prior to taking the course. Registration for extension study requires prior approval of the department chair and consent of the dean.

### **SCHOLASTIC STANDING**

#### **Grades and grade points**

The following grades and grade points are used in this University. Each course taught in the schools has been approved for either a letter grade and/or an S/U grade.

A	4.0	Outstanding performance.
A-	3.7	
B+	3.3	
B	3.0	Very good performance for undergraduate credit; satisfactory performance for graduate credit.
B-	2.7	
C+	2.3	
C	2.0	Satisfactory performance for undergraduate credit. Minimum performance for which credit is granted toward a degree in the School of Nursing or the School of Allied Health Professions.
C-	1.7	Minimum performance for which credit is granted toward a degree in the School of Dentistry, the School of Pharmacy, or the School of Public Health.
D+	1.3	

D	1.0	Minimum performance for which undergraduate credit is granted, except as indicated above.
F	0.0	Failure—given for not meeting minimum performance.
S	none	Satisfactory performance—counted toward graduation. Equivalent to a C grade or better in undergraduate courses, or a B grade or better in graduate courses. An S grade is not computed in the grade-point average. A student may request a grade of S in only a limited amount of course work as determined by the school. This is done by the student's filing with the Office of University Records the appropriate form prior to fourteen calendar days before the final examination week. Once filed, the grade is not subject to change.
U	none	Unsatisfactory performance—given only when performance for an S-specified course falls below a C grade level in an undergraduate course or a B grade level in a graduate course. Similar filing procedures as given for S grade above are required. The U grade is not computed in the grade-point average.
S/N	none	Satisfactory performance in a clock hour course. Not included in total units. Same grading criteria as the S grade given for a credit hour course.
U/N	none	Unsatisfactory performance in a clock hour course. Not included in total units. Same grading criteria as the U grade given for a credit hour course.
CR	none	Credit for Credit by Examination. Counted toward graduation/units earned but not units attempted. Such credit cannot be counted for financial aid purposes.
NC	none	No credit for Credit by Examination. Does not count for any purpose.
W		<p>Withdrawal—given for withdrawal from a course prior to fourteen calendar days before the final examination week. Withdrawals during the first fourteen calendar days of a quarter or the first seven calendar days of a five-week summer session are not recorded if the student files with the Office of University Records the appropriate form prior to the cut-off date.</p> <p>Withdrawals outside this time frame, upon recommendation of the dean, may be removed at the discretion of the vice president for academic affairs. In the case of nontraditionally scheduled courses, a "W" notation will be given for withdrawal from a course prior to completion of 80 percent of the course, excluding the final examination period.</p> <p>Withdrawals during the first 20 percent of a course, excluding the final examination period, are not recorded if the student files with the Office of University Records the appropriate form prior to the date when this 20 percent of the course is completed.</p> <p>A student may withdraw only once from a named cognate course that s/he is failing at the time of withdrawal.</p>

- UW Unofficial Withdrawal—indicates that the student discontinued class attendance after the close of registration but failed to withdraw officially.
- I Incomplete—given when the majority of the course work has been completed and circumstances beyond a student's control result in the student being unable to complete the quarter. An "I" notation may be changed to a grade only by the instructor before the end of the following term (excluding the summer sessions for those not in attendance during that term). Incomplete units are not calculated in the grade-point average.
- By use of the petition form—available online at <llu.edu/central/ssweb/registration.page>—the student requests an "I" notation from the instructor, stating the reason for the request and obtaining the signatures of the instructor, the department chair, and the associate dean. The form is left with the instructor. The instructor reports the I notation on the grade-report form, as well as the grade the student will receive if the deficiency is not removed within the time limit. The petition form is then filed with the Office of University Records along with the grade report form. The notation "I" is not granted as a remedy for overload, failure on final examination, absence from final examination for other than an emergency situation, or a low grade to be raised with extra work.
- IP In Progress—indicates that the course has a duration of more than a single term and will be completed by the student no later than the final term of the course, not to exceed five quarters for independent study and research courses (original quarter of registration plus four additional quarters). The student's final grade will be reported on the instructor's grade report at the end of the term in which the course is completed. If the course work is not completed within the five-quarter time limit, a grade of U will be given.
- AU Audit—indicates registration for attendance only, with 80 percent class attendance considered a requirement. A request to change a credit course to audit or an audit course to credit may be made no later than the fourteenth calendar day after the beginning of a quarter, or the seventh calendar day after the beginning of the five-week summer session. (This does not apply to short summer courses lasting only a week or two.)
- AUW Audit Withdrawal—given for withdrawing from a course, or to indicate that the 80 percent class attendance requirement was not met.

## ACADEMIC STANDING

The following classifications are based on scholastic performance, as defined by each school within the University: regular standing or academic probation.

## VETERANS BENEFITS

Under Title 38 of the U.S. Code, Loma Linda University is approved for the training of veterans and other eligible persons. Information regarding eligibility for these programs may be obtained by calling 888/GIBILL1 or 888/442-4551. Application for benefits must be made directly to the Veterans Administration (VA) and may be done via the Web.

The Office of University Records serves as the certifying official for Loma Linda University. Students should contact the certifying official prior to their first enrollment certification.

Students receiving veteran's benefits who fail for three consecutive quarters to maintain the cumulative grade point average (G.P.A.) required for graduation will have their benefits interrupted, and the VA office will be notified.

School of Medicine students must maintain satisfactory grades for all required courses for the year in which they are currently enrolled. If a grade in a required course reflects unsatisfactory progress, the School of Medicine student will not be certified until his/her probationary status (usually one year) has been removed.

For more information, open links to the VA Web site ("Students" or "Prospective Students") on the University Web page at <llu.edu>.

## PRIVACY RIGHTS OF STUDENTS IN ACADEMIC RECORDS

Under the Family Education Rights and Privacy Act (FERPA), students have full rights of privacy with regard to their academic records, including their grade reports. Grades are available to the student online at <llu.edu/central/ssweb>. The Office of University Records sends one copy of the student grade report to the school.

The campus is authorized under FERPA to release "directory information" concerning students. The University has classified the following as student directory information which may be released: name, address (permanent and local), picture, marital status, birth date, school, program, class, previous college, and telephone number, unless the student specifically requests in writing that the information not be released. Directory information will only be released by the academic dean's office of the school in which the student is enrolled. All requests for directory information received by all other offices of the University will be transferred to the appropriate school office.

## GRADE CHANGE

Faculty members are responsible for evaluating and assigning grades. A grade may not be changed except when an error has been made in arriving at or recording a grade. Such changes are permissible up to the end of the succeeding term.

The faculty member must obtain the dean's signature on the Change of Grade form after the initial grade has been entered.

## REPEATING A COURSE

Once grades have been posted for a course, a student wishing to improve his/her grade must repeat the course. When repeating a course, the student must attend class and laboratory sessions as ordinarily required and take all regularly scheduled examinations. The amount of tuition paid for repeated courses is determined by the school. Both the original and the repeat grades will appear on the student's permanent record, but only the repeat grade is computed in the G.P.A. and included in the total units earned. *A student may repeat a course only once, and no more than two courses may be repeated in a student's degree program.*

## PERSONAL LEAVE OF ABSENCE

A leave of absence is defined as being away from school for the remainder of the quarter, to a maximum of one year, without the intent to return. The appropriate program withdrawal form must be obtained from the University Web site and approved by the dean or his/her designee prior to the student's departure. Stipulations for re-entry are given to the student in writing. The student should consult the Office of the Dean regarding the possibility of maintaining health coverage and continuous registration during the leave period.

## WITHDRAWAL

To withdraw from a course(s), the student must complete a Registration Change Request (Add/Drop) form. If a student finds it necessary to withdraw from a degree or certificate program, the dean (or his/her designee) must be notified in writing. The student then arranges for formal withdrawal from the program by filing a Program Withdrawal form from the University Web site. The Change of Program form or the Registration Change Request (Add/Drop) form should be completed as soon as possible after the student determines that s/he cannot complete the quarter. These forms must be filed no later than fourteen days prior to the end of the quarter.

Courses dropped during the first two weeks of the term are not included in the student's permanent record.

If a student is discontinuing the entire program, the date the Program Withdrawal form is properly submitted to the Office of University Records will be the date of withdrawal used to calculate tuition refunds. Tuition is refunded according to the practice outlined in the Financial Information section of this CATALOG. Failure to file the Program Withdrawal form may result in avoidable charges to the student's account. *The tuition refund policy for off-campus students is listed under the applicable school in Section III of this CATALOG.*

## ADMINISTRATIVE WITHDRAWAL

Students who fail to make arrangements for a leave of absence or continuing registration may be administratively withdrawn from school. After one quarter, if the student has not re-enrolled, s/he will be inactivated.

## FACILITATING THE TRANSFER OF CURRENTLY REGISTERED STUDENTS

The following steps apply to processing an application for a student who is currently registered at Loma Linda University:

1. The student submits application (online or paper) to a new program that is not part of a joint/combined degree arrangement.
2. The Office of University Records prominently flags the transcript as being from a currently registered student.
3. The flagged University transcript is forwarded to the new program for evaluation.
4. The new program contacts a designated person in the home school/program to obtain relevant information about the student without revealing that an application is under consideration.
5. If the new program decides to accept the student, the acceptance letter instructs the student to take one of the following actions—
  - Send a letter/deposit accepting the offer of admission and process a Total Withdrawal form or a Leave of Absence form for the program s/he is leaving, or

- Decline the offer of admission.
6. The home program has an opportunity to speak with the student when s/he attempts to get an advisor's signature on the Total Withdrawal form.
  7. The Office of University Records updates the student's program in Banner upon processing of the Total Withdrawal form for the old program and the student's acceptance into the new program.

## **ACADEMIC RESIDENCE**

A student must meet the residence requirements indicated for a particular degree or certificate.

## **CATALOG IN EFFECT FOR DEGREE REQUIREMENTS**

Subject to department approval, students may complete degree requirements outlined in any CATALOG in effect during the time they are enrolled as accepted students in a school. However, students who have been on leave of absence for more than one year, or who failed to register without leave of absence (consult Office of the Dean regarding number of quarters) may be required to re-enter the program under the CATALOG in effect at the time of re-entry, with the exception of students who are on leave from a school to pursue a medical or dental degree at this University. Such students may complete their program under their original CATALOG.

## **GRADUATION**

The responsibility for meeting graduation requirements rests primarily upon the student. Therefore, students should read and understand the requirements as set forth in this CATALOG and consult carefully with their advisor to plan a sequence of courses each term that fulfills these requirements. A student's program of study is governed by the requirements listed in the University CATALOG at the time of admission; however, when circumstances demand, the University reserves the right to make changes with reference to admission, registration, tuition and fees, attendance, curriculum requirements, conduct, academic standing, candidacy, and graduation.

The undergraduate who plans to graduate must submit an Undergraduate Intent to Graduate form two quarters prior to graduation. The form is available online at <[llu.edu/ssweb/documents/intgrad.pdf](http://llu.edu/ssweb/documents/intgrad.pdf)>.

## **COMMENCEMENT EXERCISES**

The candidate completing requirements in the Spring Quarter is expected to be present at the commencement exercises and receive the diploma in person. Permission for the degree to be conferred in absentia is contingent upon the recommendation of the dean to the provost and can be granted only by the provost. If a candidate has not satisfactorily fulfilled all requirements, the University reserves the right to prohibit participation in commencement exercises.

## **DIPLOMA**

When the profession is named in the degree title, or when the degree is indicated by the school name, no other designation is included on the official diploma issued to the graduate. When the profession or major is not named in the degree title, the profession or specialization is also indicated on the official diploma.

## Financial Policies and Information

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Accounts with other schools or with this University must be settled before enrollment will be allowed or services offered. Registration is not complete until tuition and fees for each term are paid; therefore, the student should be prepared to make these payments during scheduled registration periods for each academic year. Tuition and fees may vary from amounts shown. Please refer to the Student Account Disclosure statement for additional student account financial information (<[llu.edu/assets/central/ssweb/studentfinance/documents/disclosure.pdf](http://llu.edu/assets/central/ssweb/studentfinance/documents/disclosure.pdf)>).

### STUDENT FEES

#### Enrollment fees

Students attending this University will be charged an enrollment fee, based on the criteria indicated below. Neither the fee in total nor any portion of the fee will be waived under any circumstances. Other school-specific charges—such as technology fees, laboratory fees, etc.—may also appear on the student account. The following criteria govern the enrollment fee:

1. Students who are accepted into a degree program and registered will be charged the enrollment fee, regardless of the number of units for which they are registered.
2. Students who are not accepted into a degree program but who are registered as nondegree students for more than four units will be charged the enrollment fee.
3. Students who are working on "In Progress" courses and who are not registered for any other units will be charged the enrollment fee.
4. A student who is charged the enrollment fee but who drops all units before the deadline for a full refund (generally one week after the first day of classes), will receive a full refund of the enrollment fee and will have no access to any University benefits. Please refer to the percent refund policy.
5. LLUAHSC employees who are "full-time, benefit eligible" will not be charged the enrollment fee, whether they are using their education benefit or not. Spouses of employees who are using the employee benefit will be charged the enrollment fee.
6. Students participating in an off-campus or online program will not be charged the enrollment fee unless the program specifically requires this fee.
7. Other school-specific fees will be charged independent of the enrollment fee.

Note: The student enrollment fee includes health coverage.

#### Other fees

Late registration fee	\$50
Late payment fee	\$50
Returned check fee	\$25
Lost withdrawal check reissue fee	\$15
Returned direct deposit fee	\$15

## GENERAL PRACTICES

### Tuition payments/refunds

Students who have not paid the balance due for registration, or who have not been awarded financial aid sufficient to cover the balance—will be charged a \$50 late payment fee. Tuition and fees are due and payable in full to complete registration each term. If a student withdraws from a per-unit course or program, or from a block program up to 60 percent into a term, tuition will be refunded on a pro rata basis. Students who drop a course from a block program of courses will not receive a refund (please refer to the quarterly registration and refund dates <[llu.edu/ssweb/0terms/regdates.html](http://llu.edu/ssweb/0terms/regdates.html)>).

### Monthly statement

The amount of the monthly statement is due and payable in full upon presentation of the statement. A student unable to meet this requirement must make proper arrangements with the director of student finance. An account that is more than thirty days past due is subject to a finance charge of .833 percent per month (10 percent per year). Failure to pay scheduled charges or to make proper arrangements will be reported to the respective school and may cause the student to be considered absent, discontinued, or ineligible to take final examinations. Students may also request that monthly statements be sent to a parent or sponsor.

### Financial clearance

The student is expected to keep a clear financial status at all times. Financial clearance must be obtained—

- each term in order to complete registration;
- before obtaining access to University services;
- before marching for graduation;
- before receiving a certificate or diploma;
- before requesting a transcript, statement of completion, or other certification to be issued to any person, organization, or professional board.

All University registration holds must be cleared before quarterly financial clearance can be granted.

To obtain financial clearance from the Student Loan Collections Office, students with campus-based student loans must be current on all scheduled loan-account payments and must have fully completed a loan exit interview, after ceasing to be enrolled for at least half time at this University. If the student's loan accounts are not current, or an exit interview has not been fully completed, a hold will be placed by the Student Loan Collection Office on transcript, diploma, or degree verification; and P1E requests and other services may be denied. Please note that all student loans are reported to a credit bureau organization on a monthly basis. If a student fails to comply with the terms and conditions of the promissory note, the Student Loan Collection Office will accelerate the loan(s), place the student loan(s) in collection with an outside agency, and demand immediate payment of the entire unpaid balance—including principal, interest due, late fees, other fees, collection costs, attorney costs, and legal costs.

### Payments

Bankcard, ACH, check, wire transfer, and cash payments are accepted. Checks should be made payable to Loma Linda University and should indicate the student's ID number to ensure that the correct account is credited. In case a payment is returned, there will be a \$25 returned item fee assessed. Payments are

accepted in person at Student Finance, by mail, through the Student Service Center drop box, and online at <llu.edu/central/ssweb/studentfinance>. Account refunds, resulting from financial aid, tuition refunds, or other payments may be credited back to any bankcard used, to the extent of the card payment made, before a refund check or direct deposit will be issued.

Please note that student identification cards are required for enrolled students to obtain service at the Student Service Center. (LLUAHSC employees may present their employee ID cards in lieu of student ID.)

## DEPOSITS

### Acceptance deposit

Upon notification of acceptance, the student makes the required deposit (see school or program for specific deposit amount). This amount is deducted from the tuition and fees due at registration, or is forfeited if the student does not enroll.

### Room and key deposit

Residence hall room and key deposits for Daniells Complex and for Lindsay Hall are forfeited after August 15 if occupancy does not follow for the Autumn Quarter. At the close of the term of residence, both the room deposit and the key deposit are refunded after the dean's inspection and clearance and the student's return of the key.

### International Student Deposit

Loma Linda University requires that international students must be prepared to provide an advance deposit and must provide documentation that additional funds will be forthcoming to meet school expenses. The deposit will be held by the University during the program of study and will be applied to the last quarter's tuition charge. Alternatively, the deposit may be refunded, less any outstanding balance on the account, if the student is denied a visa or terminates his/her program.

## HOUSING

If a student is interested in on-campus/residential housing, application may be made online at <llu.edu/central/housing>.

## INTERNATIONAL STUDENTS

International applicants (non-U.S. citizens and non-U.S. permanent residents) must meet all admissions requirements for the chosen program before an offer of acceptance can be issued. This includes providing evidence of their ability to meet estimated living expenses and all financial obligations to the University that will occur during their program.

Loma Linda University requires that international students must be prepared to provide an advance deposit and must provide documentation that additional funds will be forthcoming to meet school expenses. The deposit will be held by the University during the program of study and will be applied to the last quarter's tuition charge. Alternatively, the deposit may be refunded, less any outstanding balance on the account, if a student is denied a visa or terminates his/her program.

After acceptance into the chosen program, the office of International Student and Scholar Services will contact international applicants and guide them through the appropriate procedures. For questions, please call International Student and Scholar Services at 909/558-4955.

## **HEALTH SERVICE**

A student enrolled in a certificate or degree program is automatically covered by the Student Health Plan provisions. Nondegree students taking more than four units are also covered by the plan. A nondegree student may request and pay for health plan coverage if s/he is a part-time student who has been accepted into a Board-approved (degree or certificate) program and is currently registered for up to and including 4 units. For further information, see the Student Health Plan in the Student Life section of this CATALOG.

## **STUDENT AID**

The University participates in grant, scholarship, and loan programs. Financial assistance is available to students from University and government loan funds and other special trust funds. A needs-analysis system approved by the federal government is used to evaluate the need for financial aid. A parental contribution factor is considered for dependent students.

It is necessary for students who are seeking financial assistance to file the Free Application for Federal Student Aid (FAFSA) as soon as possible for the current academic year.

### **Loans**

Loans are available to both undergraduate and graduate students who are eligible to participate in government loan programs. Loans are restricted to citizens of the United States and certain eligible noncitizens. Certain funds are interest free while a student is enrolled at least half time. Inquiries about loans should be made to the Office of Financial Aid.

### **Work-study program**

Work opportunities may be available to students after financial need is determined by the Office of Financial Aid. The majority of funding for on-campus employment is provided by the United States government for United States citizens and certain eligible noncitizens.

### **Financial aid applications**

To apply for financial aid for the 2011-2012 academic year (Summer Quarter through Spring Quarter), the student must complete a FAFSA. FAFSA applications are available online at <fafsa.ed.gov>. The FAFSA application must be renewed annually.

Cal Grant deadline is March 2.

## **VETERANS BENEFITS**

Under Title 38 of the U.S. Code, Loma Linda University is approved for the training of veterans and other eligible persons. Information regarding eligibility for these programs may be obtained by calling 888/GIBILL1 or 888/442-4551. Application for benefits must be made directly to the Veterans Administration (VA) and may be done via the Web. The Office of University Records serves as the certifying office for Loma Linda University. Students should contact the certifying official prior to their first enrollment certification.

Students receiving veteran's benefits who fail for three consecutive quarters to maintain the cumulative grade point average (G.P.A.) required for graduation will have their benefits interrupted, and the VA office will be notified.

School of Medicine students must maintain satisfactory grades for all required courses for the year in which they are currently enrolled. If a grade in a required course reflects unsatisfactory progress, the School of Medicine student will not be certified until his/her probationary status (usually one year) has been removed.

For more information, open links to the VA Web site ("Students" or "Prospective Students") on the University home Web page at <llu.edu>.

## **WICHE**

The University participates in the student exchange program of the Western Interstate Commission for Higher Education (WICHE). Eligibility requirements vary among states. Interested students should apply to their state's certifying officer for further information.

The name and address of the certifying officer can be obtained from the Western Interstate Commission for Higher Education, 3035 Center Green Drive Suite 200, Boulder, CO., 80301. Web page: <wiche.edu/psep>.

Inquiry may also be made at the Office of Student Financial Aid. The application deadline is October 15 prior to the year aid is needed.

# III

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School of Medicine

School of Nursing

School of Pharmacy

School of Public Health

School of Religion

School of Science and Technology

Faculty of Graduate Studies

## School of Allied Health Professions

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## Dean's Welcome

Welcome to the School of Allied Health Professions at Loma Linda University. Here you will receive a quality education from a committed faculty and staff. Regardless of the discipline you have chosen to study, we believe we offer an environment that fosters academic excellence, professional competence, and spiritual development.

Our close and effective connection with Loma Linda University Medical Center enables both students and faculty to stay on the cutting edge of health care practice. The school's more than 1,300 clinical affiliations throughout the United States offer a wide variety of experience options designed to develop a well-rounded health care professional.

In the School of Allied Health Professions, we are committed to your education and professional development; and we believe that it is more than just clinical competence—it is our emphasis on the development of the caring and compassionate professional—that sets us apart.



A handwritten signature in cursive script that reads "Craig R. Jackson".

Craig R. Jackson, J.D., M.S.W.  
Dean

## School Foundations

The School of Allied Health Professions was established in 1966 (under the name School of Health Related Professions, 1966-1971) to consolidate the administration of individual curricula initiated earlier in the University: medical technology, 1937; physical therapy, 1941; medical radiography, 1941; occupational therapy, 1959; health information management (formerly medical record administration), 1963.



Curricula added since the school was established are nuclear medicine technology, 1970; radiation therapy technology, 1970; cardiopulmonary sciences (formerly respiratory therapy), 1971; nutrition and dietetics, 1972; medical sonography, 1976; special imaging technology, 1976; cytotechnology, 1982; coding specialist, 1987; occupational therapy assistant, 1988; physical therapist assistant, 1989; emergency medical care, 1993; surgical technology, 1995; physician assistant, 2000; rehabilitation sciences, 2001; polysomnography, 2002; radiologist assistant, 2003; medical dosimetry, 2003; orthotics and prosthetics, 2007; health administration, 2008; cardiac electrophysiology technology, 2009. The curriculum in speech-language pathology and audiology, renamed communication sciences and disorders in 2009, was initiated in 1965 under the auspices of the College of Arts and Sciences of La Sierra University (formerly Loma Linda University, La Sierra campus). The program was transferred to the School of Allied Health Professions in 1987. Particulars governing programs currently offered are detailed in this section of the CATALOG following information that pertains to students schoolwide.

# Mission and Goals

## OUR MISSION

The School of Allied Health Professions is dedicated to fulfilling the mission of Loma Linda University through academic and clinical training of allied health professionals. The school prepares competent health professionals in a Christian environment that emphasizes the healing and teaching ministry of Jesus Christ "to make man whole."

To meet local, national, and international allied health care needs, we seek to serve:

1. Students choosing to become health care professionals.
2. Individuals in need of medical care or health promotion programs.
3. Faculty and staff committed to working with students in a Christian educational setting.

## OUR GOALS

The goals of the School of Allied Health Professions are to:

1. Provide an environment in which the student may develop responsibility for integrity, ethical relationships, and empathic attitudes that contribute to the welfare and well-being of patients.
2. Help the student accept responsibility for integrity, ethical relationships, and empathic attitudes that can contribute to the welfare and well-being of patients.
3. Help the student develop a background of information and attitudes conducive to interprofessional understanding and cooperation.
4. Encourage the student to cultivate habits of self-education that will foster lifelong growth.
5. Engender and nurture in the student the desire to serve humankind—and, in particular, to serve as needed in the medical centers sponsored by the Seventh-day Adventist Church, both in this country and elsewhere.

The eight student learning outcomes adopted by Loma Linda University and the School of Allied Health Professions are:

1. Students understand and apply the University philosophy of wholeness in their personal and professional lives.
2. Students understand the importance of integrating the University's Christ-centered values in their personal and professional lives.
3. Students demonstrate critical thinking.
4. Students develop a commitment to discovery and lifelong learning.
5. Students demonstrate effective communication skills in English.
6. Students demonstrate effective use of technology appropriate to the discipline.
7. Students understand the importance of embracing and serving a diverse world.
8. Students demonstrate the importance of collaborating with others within and across disciplines.

## **Evaluation of Mission and Student Learning Outcomes—Wholeness Portfolio**

Portfolio is a tool by which students develop and personally achieve student learning outcomes established by Loma Linda University. The school conducts an evaluation program that includes courses, validation of writing, and standardized measures related to wholeness. The evaluation courses—Wholeness Portfolio I, II, as well as Graduate Wholeness Portfolio—are intended to be a means of integrating the wholeness concept into the lives of the students and of assessing the outcome of their educational process. The portfolio faculty and staff assist students in understanding and modeling the mission of Loma Linda University and the School of Allied Health Professions.

Each portfolio course is in progress for three-to-four quarters, during which time the student is developing a portfolio based on Loma Linda University's eight student learning outcomes. The final portfolio provides the student with an organized, goal-driven documentation of growth and achieved competence of abilities in a personal and professional realm of skills.

An Associate in Science degree program student completes the one-year wholeness portfolio; all other undergraduate students complete Wholeness Portfolio I and II over a two-year period. Each graduate student completes a graduate portfolio.

## General Regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III gives the general setting for the programs of each school and the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

### ADMISSIONS POLICIES AND INFORMATION

The program admissions committees of the University intend that an applicant to any of the schools is qualified for the proposed curriculum and is capable of profiting from the educational experience offered by this University. The admissions committees of the school accomplish this by examining evidence of scholastic competence, moral and ethical standards, and significant qualities of character and personality. Applicants are considered for admission only on the recommendation of the program in which study is desired.

In selecting students, the Admissions Committee of the School of Allied Health Professions looks for evidence of self-discipline, personal integrity, and intellectual vigor. The committee also looks for evidence that students possess the capabilities required to complete the full curriculum in the allotted time and to achieve the levels of competence required. Acceptance of the applicant into any program is contingent on the recommendation of the department conducting the program.

An interview with faculty is required by most programs. Loma Linda University was established to provide education in a distinctively Christian environment, and its students are expected to adopt Christian ethical and moral standards as a basis for their conduct. It must be understood further that, in harmony with the University's emphasis on health and the health professions and the practices of the supporting church, applicants who use tobacco, alcoholic beverages, or narcotics should not expect to be admitted.

Loma Linda University is committed to equal opportunity and does not discriminate against qualified persons on the basis of handicap, gender, race, color, or national or ethnic origin in its educational and admissions policies, financial affairs, employment programs, student life and services, or any University-administered program. It does, however, retain the right to give preference in student admissions to qualified Seventh-day Adventist applicants. While this right is retained, it should be emphasized that admission is not limited exclusively to Seventh-day Adventist applicants.

### APPLICATION AND ACCEPTANCE

#### Where to write

Correspondence about admission to all programs and requests for application information should be addressed to the Office of Admissions and Records, School of Allied Health Professions, Loma Linda University, Loma Linda, CA 92350.

#### Apply early

One class is admitted annually to most of the professional programs. Most programs begin with the Autumn Quarter. Exceptions are noted in the respective programs of this CATALOG.

Late applications are considered as long as space is available. Notifications generally are sent between January 1 and May 15, depending on the completeness of information provided and the date of application. Applicants should inquire at the Office of Admissions and Records if notice of action is not received by April 15 for occupational therapy and physical therapy, and by May 15 for other programs.

### **Application review process**

All completed applications are first reviewed by the department chair and faculty. A recommendation on each application is then submitted to the school's Admissions Committee, which makes the final decision regarding acceptance.

### **Procedure**

The procedure for application and acceptance is given below. All correspondence and documents are to be sent to the Office of Admissions and Records, School of Allied Health Professions, Loma Linda University, Loma Linda, CA 92350.

1. File the complete application form (including recommendations, if received), accompanied by the \$60 application fee.
2. Request that transcripts of all college course work be sent to the school. High school transcripts are required of all applicants in order to verify graduation and completion of high school mathematics.
3. Upon receipt of the notice of acceptance, return the required deposit and the card provided to confirm acceptance.
4. Provide health records or certificates, as required.

### **Online application**

Applications are available online at <llu.edu/central/apply>.

### **Applicant's records**

The application and all records submitted in support of the application become the property of the University.

## **ENTRANCE REQUIREMENTS**

### **Subject/diploma requirements**

High school and college subject requirements for each program are outlined in the respective programs. Students are required to furnish evidence of completion (official transcript) of high school in order to be granted admission to undergraduate programs in any of the schools of the University. A high school diploma or its equivalent, the GED, is required.

### **Grade requirement**

Eligibility for consideration by the Admissions Committee is based on a grade point average of at least 2.0 (on a 4.0 scale) for all course work (science and nonscience subjects computed separately) presented in fulfillment of entrance requirements for all programs in the school. A grade point average considerably higher than the minimum is expected because of the nature of the studies in many professional programs

and the competition for the limited number of openings. In general, grade point averages between 2.5 and 3.0 are considered minimal, depending on the program. A minimum grade of C (2.0) is required for all college transfer courses.

### **Transcripts**

Transcripts (the documents by which institutions officially convey the grades and credits earned in specific subjects and the stage of completion of curriculum requirements) are accepted only when sent directly to the University by the issuing institution. Transcripts received by Loma Linda University become the property of the University and will not be released to the student or forwarded to any other institution upon request of the student.

### **Academic probation**

Students whose cumulative G.P.A. at the end of any quarter is less than the minimum required by the school or program will be placed on academic probation, and the number of units for subsequent registrations will be restricted to a maximum determined by the school or program. A student on academic probation jeopardizes his or her standing in a degree or certificate program.

## Student Life

The information on student life contained in this CATALOG is brief. The most current *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies; and is available to each registered student. Students need to familiarize themselves with the contents of the *Student Handbook*. Additional information regarding policies specific to a particular school or program within the University is available from the respective school.

### PROFESSIONAL STANDARDS

#### Personal grooming

Good taste indicates that haircut, hairstyling, and personal grooming be neat and conservative rather than ostentatious.

Grooming and style should also be practical so that the student can perform assigned duties without embarrassment or inconvenience. Specifically:

- Men's hair must be neatly trimmed and not fall below the collar. Ponytails, spikes, and dreadlocks are not acceptable.
- Mustaches and beards, if worn, must be neat and closely trimmed.
- Women's hair, if long, may be required to be tied back. Spikes and dreadlocks are not acceptable.
- The wearing of hats indoors is not acceptable.
- Words, pictures, and/or symbols displayed on clothing should be consistent with a Christian institution and sensitive to a diverse student population.
- Excessive make-up and fragrances are not appropriate.
- Rings, if worn, should be low profile and limited to one finger per hand. Male students are not allowed to wear ear ornaments. If worn by women, ear ornaments are limited to simple studs and should not drop below the bottom of the earlobes. Such ornaments are limited to one per ear. Rings or ornaments in other anatomical sites are not acceptable.
- Fingernails should be maintained in a professional manner, closely trimmed, and should not interfere with patient safety and comfort during treatments. Nail polish, if worn, should be of a subdued color.

# Academic Policies and Information

Students are responsible for informing themselves of the policies and regulations pertinent to registration, matriculation, and graduation; and for satisfactorily meeting these requirements.

## ACADEMIC RESIDENCE

In order to graduate from Loma Linda University with a bachelor's degree, a student must complete at least 32 of the last 48 units, or a minimum of 45 total units of course work, at this University. A minimum grade of C (2.0) or better is required for all B.S. and postbaccalaureate degrees.

## GRADUATION CEREMONIES

Graduation events include formal ceremonies identified as conferring of degrees, awarding of diplomas, and recognition of candidates for degrees. Other related graduation events include the baccalaureate and vespers services. The conferring of degrees ceremony(ies) occurs at the close of the Spring Quarter and includes an academic procession, the formal conferring of degrees by the president, and the presentation of diplomas by the dean of the school. Candidates who complete the requirements for degrees and certificates are invited, with families and friends, to attend and participate in these important and colorful events.

To be eligible to participate in graduation events, candidates must have completed all requirements for the degree, including prerequisites and/or corequisites, as specified by the school. In certain degree programs, upon authorization of the dean, exceptions will be made for candidates who:

- Have only clinical experience requirements to complete and can project completion by the end of the calendar year;
- Can complete remaining degree requirements by the end of the Summer Quarter; or
- Are in a block program.

The still in-progress course work may not exceed 8 units for graduate students or 12 units for undergraduate students. A student who completes the requirements for a degree or certificate (other than clinical experience) at the end of the Summer, Autumn, or Winter quarter is invited to participate in the subsequent June commencement events. The official date of graduation on the diploma is ordinarily the last day of the term in which the requirements for a degree are completed.

Superior academic performance and achievement in scholarship and leadership are recognized in the printed graduation program for persons who complete their baccalaureate degree and who at the end of the quarter preceding their final term have acquired a cumulative grade point average for all college work (includes course work taken at other colleges/universities, except for remedial courses), as follows:

- 3.5 Graduation cum laude
- 3.8 Graduation magna cum laude
- 3.9 Graduation summa cum laude

Although the official commencement program indicates names of graduates who qualify for honors on the basis of their grade point average as of the end of the quarter preceding their final term, the subsequently issued diploma and transcript may indicate graduation with honors if the student's final quarter record has increased the grade point average sufficiently to qualify for honors at that time.

## SCHOLASTIC STANDING

### Repeating a course

A student who receives an unsatisfactory grade in a required course and is required by the faculty to do additional work may request permission of the faculty to pursue one of the following plans. In either plan, the student must register and pay the applicable tuition.

1. Review the course work under supervision and take a make-up examination (usually not given before a minimum of two weeks of study). A passing grade resulting from a repeat examination will be limited to a C (2.0). (See the Schedule of Charges in the Financial Information section of this CATALOG for the tuition rate for tutorial course work.)
2. Repeat the course, attend class and/or laboratory, and take the final course examination. Full tuition will be charged whether regular or occasional attendance is required. (See the Schedule of Charges in the Financial Information section of this CATALOG for the tuition rate.)

A student who receives an unsatisfactory grade in a required clinical experience course and is required by the faculty to do additional work must reregister and pay the applicable fee. (See the Schedule of Charges in the Financial Information section of this CATALOG for the fee for repeat of clinical experience.)

Both the original and repeat grades are entered in the student's permanent academic record, but only the repeat grade is computed in the grade-point average. A course may be repeated only once.

### Promotion and probation

Each student's record is reviewed quarterly by the faculty. Promotion is contingent on satisfactory academic and professional performance and on factors related to aptitude, proficiency, and responsiveness to the established aims of the school and of the profession. As an indication of satisfactory academic performance, the student is expected to maintain the following grade-point average:

- 2.0 Associate and baccalaureate degree programs
- 2.5 Master's degree program
- 3.0 Doctoral degree program

A student whose grade point average in any term falls below the minimum required for the degree, or who receives in any professional or required course a grade less than a C (2.0), or whose clinical performance is unsatisfactory is automatically placed on academic probation. Continued enrollment is subject to the recommendation of the department. If continued enrollment is not recommended, the case is referred to the Administrative Council of the school for final action.

If continued enrollment is recommended, the student will be required to institute a learning assistance plan within the first two weeks of the following quarter and meet regularly scheduled appointments with the academic advisor. The learning assistance plan should: identify the problem, identify and list the goals, state the time frame, and include student and advisor signatures and date.

A student who is on academic probation and fails to make the minimum required grade point average the following quarter or fails to have an overall minimum grade point average after two quarters will have disqualified him-/herself from the program.

**Standard of student progress (time framework)**

After initial enrollment in a program, students must complete program requirements within the following time frames:

A.S. degree	3 years
B.S. degree	5 years
Master's degree	5 years
Doctoral degree	7 years

## Allied Health Studies

The Department of Allied Health Studies provides a variety of administrative and support services to the school's academic departments, including: development, marketing, admissions, computer support and training, portfolio, and financial services. In addition, the Department of Allied Health Studies supports programs offered at distance education sites, online, and in conjunction with other schools of the University.

### FACULTY

Kent Chow  
Noha S. Daher  
G. Charles Dart, Jr.  
Intithar S. Elias  
Helen R. Martinez  
Esther M. Huecker  
Craig R. Jackson  
Theresa M. Joseph  
Everett Lohman III  
Dulce L. Pena  
Gail T. Rice  
Borge Schantz  
Ernest R. Schwab  
Paige Shaughnessy  
Antonio Valenzuela  
Ardis E. Wazdataskey  
Grenith J. Zimmerman

### ADVISORY COMMITTEE

Craig R. Jackson  
Edd J. Ashley  
Liane H. Hewitt

### EXTENDED CAMPUS PROGRAMS

Students may contact the program director for information about distance learning programs.

#### **Radiation Technology, B.S. (Fresno, California)**

ARTHUR W. KROETZ, Program Director

#### **Health Information Administration, B.S. (online)**

MARILYN H. DAVIDIAN, Program Director

#### **Rehabilitation Science (conjoint Ph.D.)**

GRENITH ZIMMERMAN, Program Director

## **LEARNING RESOURCE/CENTER FOR PREHOSPITAL CARE, EDUCATION AND RESEARCH (CPCER)**

JEFFREY T. GRANGE, Medical Director, Center for Prehospital Care, Education, and Research (CPCER);

Director, LLUMC Emergency Medical Services, Department of Emergency Medicine

JEFFREY L. BENDER, Director, Center for Prehospital Care, Education, and Research (CPCER)

BRETT MCPHERSON, Manager, Center for Prehospital Care, Education, and Research (CPCER);

Manager, Discoveries Project, Loma Linda University Medical Center

EHREN NGO, Director, Bachelor of Science degree Emergency Medical Care Program, Department of

Cardiopulmonary Sciences, School of Allied Health Professions

EVELYN MASSEY, Program Director, Life Support Education, Department of Cardiopulmonary Sciences,

School of Allied Health Professions

ELIZABETH L. LYNCH, Primary Investigator, Convertible Use Rapidly Expandable (CURE) Center

Project, Loma Linda University Medical Center

The Bachelor of Science degree Emergency Medical Care (EMC) Program and Life Support Education (LSE), in conjunction with the LLUMC Emergency Department (ED), constitute the Center for Prehospital Care, Education, and Research (CPCER). The center seeks to advance the mission of Loma Linda University Adventist Health Sciences Center (LLUAHSC)—"To make man whole." Bringing together the educational and research resources of Loma Linda University and the educational and ethical resources of LLUMC—a tertiary care center, children's hospital, and Level 1 trauma center—the Center for Prehospital Care, Education, and Research is uniquely equipped to benefit the prehospital and critical care EMS community that serves the 3.3 million residents who populate a vast, geographically diverse region spanning one-quarter of the state of California by:

- Giving emergency and critical care EMS health care providers access to quality education that focuses on personal, spiritual, intellectual, and professional development; and up-to-date, quality patient care.
- Providing and expanding on comprehensive and ethical research focused on fostering professionalism and leadership, while continually building the body of knowledge that guides EMS practice and quality patient care.
- Developing leaders with decision-making skills that reflect spiritual, moral, ethical, and compassionate insights.
- Developing and enhancing managers capable of addressing today's dynamic health care industry with regard to finance and economic viability, resource management, technology, and quality patient care.

## **LIFE SUPPORT EDUCATION (LSE)**

Life Support Education (LSE) is a program in the School of Allied Health Professions. The program offers a variety of American Heart Association (AHA) classes for health care and non-health care professionals. Courses are approved by the California Board of Nursing and the California Medical Board for continuing education (CEU or CME) units.

The LSE program is located in the University Arts building at 24887 Taylor Street, Suite 102, Loma Linda, CA 92354; telephone: 909/558-4977.

## Courses offered

### **Basic Life Support (BLS)**

This course is designed for persons who need information about basic airway management and first responder basic management of cardiac arrest in adults, children, and infants.

#### *Prerequisite*

Proof of current AHA BLS card if renewing certificate. Candidate includes anyone who needs to know how to perform CPR in a health care setting. Required manual must be brought to class. Participants must study the textbook and the CD prior to class attendance.

For more information, call LSE: telephone 909/558-4977; or visit <llu.edu/life-support-education>.

### **Advanced Cardiac Life Support (ACLS)**

This course is designed to certify/recertify medical professionals as ACLS providers and to increase their skills in advanced management of cardiac arrest, airway management, arrhythmia recognition, and team dynamics.

#### *Prerequisite*

Proof of current AHA BLS card if certifying for the first time, or proof of current AHA BLS and ACLS card if renewing. Candidate must be a health care provider whose activities demand proficiency in ACLS skills. Required manual must be brought on the day of class. Self-assessment test is highly recommended. Participants must study the textbook and the CD prior to class attendance.

For more information, call LSE: telephone 909/558-4977; or visit <llu.edu/life-support-education>.

### **Pediatric Advanced Life Support (PALS)**

This course is designed to certify/recertify medical professionals who need information about the recognition and advanced management of cardiac arrest, shock, and airway management in infants and children.

#### *Prerequisite*

Proof of current AHA BLS card if certifying for the first time, or proof of current AHA BLS and PALS card if renewing. Candidate must be a health care provider whose activities demand proficiency in PALS skills. Required manual must be brought on the day of class. Self-assessment test is highly recommended. Participants must study the textbook and the CD prior to class attendance.

For more information, call LSE: telephone 909/558-4977; or visit <llu.edu/life-support-education>.

### **Neonatal Resuscitation Program (NRP)**

This course is designed to certify/recertify medical professionals as NRP providers and to renew/update their skills in the management of neonatal resuscitation. The skills testing complies with the guidelines of the American Academy of Pediatrics and the American Heart Association.

#### *Prerequisite*

Proof of current NRP card when renewing. Candidate must be a health care provider whose activities demand proficiency in NRP skills. Required manual must be brought on the day of class. Self-assessment test is highly recommended. Participants must study the textbook and the CD prior to class attendance.

For more information, call LSE: telephone 909/558-4977; or visit <llu.edu/life-support-education>.

### **Heartsaver First Aid and Heartsaver CPR/AED**

This class is for non-health care and health care providers who need to renew/update their CPR and first aid management skills.

#### ***Prerequisite***

For health care and non-health care providers whose activities demand proficiency in CPR and first aid skills. Required manual must be brought on the day of class. Participants must study the textbook and the CD prior to class attendance.

For more information, call LSE: telephone 909/558-4977; or visit <llu.edu/life-support-education>.

### **LSE terms and conditions**

#### **Registration**

Register a month before class date. Class starts promptly at scheduled time. Anyone more than 15 minutes late will be asked to reschedule. Registration closes when classes are full. If student registered online, s/he must bring printed registration confirmation on the day of class.

#### **Certification**

American Heart Association certificates are provided upon course completion for BLS, ACLS, Heartsaver CPR/AED, Heartsaver First Aid, PALS, and PEARS. NRP certification is provided by the American Association of Pediatrics.

#### **Required cards for AHA courses**

	Required cards for provider	Required cards for renewal
BLS		BLS
ACLS	BLS	BLS, ACLS
PALS	BLS	BLS, PALS
PEARS	BLS	BLS
NRP		NRP

#### **Books**

Students must bring required book(s) to class. Anyone without the required book(s) will not be granted admission and will be rescheduled. Rescheduling fees apply. Books can be purchased at the Life Support Education office or online.

#### **Fees**

A 72-hour notice is required for full refunds, cancellations, and rescheduling of classes. If less than a 72-hour notice is given, a \$25 processing fee applies for ACLS, PALS, and NRP classes. A \$10 processing fee will be charged for PEARS, ECG and pharmacology, BLS, Heartsaver CPR, and first aid. *No refunds will be given for no-shows.*

A \$25 fee will be charged for retesting ACLS, PALS, and NRP; a \$10 fee will be charged for PEARS and BLS retesting. Retesting is not allowed prior to 48 hours after the class date.

#### **CME/CEU/ICEMA**

The California Medical Association, California Board of Nursing, and Inland Counties Emergency Medical Agency (ICEMA) have approved ACLS, PALS, and NRP provider courses for 16 continuing

education units and renewal courses for 8 continuing education units. PEARS has been approved for 8 continuing education units. No continuing education units for BLS and first aid are applied. *CME Category 1. CEP No. 100403. California CEP No. 62-0004. Pharmacy.*

## Financial Policies and Information

The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy in regard to reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs in regard to these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees for the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### GENERAL FINANCIAL PRACTICES

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year.

Previous accounts with other schools or this University must have been settled.

### SCHEDULE OF CHARGES (2011-2012)

(Subject to change by Board of Trustees action)

NOTE: Tuition rates are effective Summer Quarter through the following Spring Quarter.

#### Tuition information: by department

Column 1	YEAR	academic year/class
Column 2	UNITS	total units for academic year
Column 3	TUITION	total tuition for academic year
Column 4	STATUS	specified degree or certificate, full-time, part-time, or track

#### Allied Health Sciences

##### *Rehabilitation Science—Doctor of Philosophy*

Units and tuition vary, depending upon units transferred into Loma Linda University.

YEAR	UNITS	TUITION	STATUS
1	24	14,880	

##### *Health Care Administration*

YEAR	UNITS	TUITION	STATUS
1	63	31,311	

##### *Healthcare Professions Education—Master of Science—Units Vary*

Units and tuition vary, depending upon units transferred into Loma Linda University

YEAR	UNITS	TUITION	STATUS
Multi Year	48	27,600	

***Healthcare Professions Education—Certificate—Units Vary***

Units and tuition vary, depending upon units transferred into Loma Linda University

YEAR	UNITS	TUITION	STATUS
Multi Year	27	15,525	

**Cardiopulmonary Science*****Emergency Medical Care—Progression Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	40	19,880	
2	38	18,886	

**CPCER—Center for Prehospital Care, Education, and Research**

For contact information about CPCER certificate program and tuition, see LEARNING RESOURCE/RESEARCH CENTER-Center for Prehospital Care, Education, and Research (CPCER)

**Respiratory Care*****Respiratory Care—Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	53	26,341	
2	59	29,323	

***Respiratory Care—Certificate***

YEAR	UNITS	TUITION	STATUS
1	45	22,365	
2	36	17,892	

***Respiratory Care—Postprofessional Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
New	55	27,335	
Cont	10	4,970	

**Clinical Laboratory Science*****Phlebotomy\*—Certificate***

YEAR	UNITS	TUITION	STATUS
	5	1,865	

***Cytotechnology—Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	56	27,832	
2	45	22,365	

***Cytotechnology—Certificate***

YEAR	UNITS	TUITION	STATUS
1	56	27,832	
2	12	5,964	

***Clinical Laboratory Science—Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	63	31,311	
2	63	31,311	Track A, B, C

**Communication Sciences and Disorders*****Communication Sciences and Disorders—Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	47-60	23,359-29,820	
2	38-63	18,886-31,311	

***Communication Sciences and Disorders—Master of Science Transitional Program***

YEAR	UNITS	TUITION	STATUS
1	47	23,359	
2	34	21,080	
3	26	16,120	

***Communication Sciences and Disorders—Master of Science***

YEAR	UNITS	TUITION	STATUS
1	33	20,460	
2	26	16,120	

**Health Information Management*****Health Information Administration—Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	53	26,341	
2	47	23,359	
Part-time	Units and tuition vary.	497 per unit	

***Health Information Administration—Certificate***

YEAR	UNITS	TUITION	STATUS
Cert	Units may vary, depending upon units transferred into Loma Linda University.	497 per unit	

***Health Information Administration—Health Information Technology (HIT) Progression Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1, 2	Units may vary, depending upon units transferred into Loma Linda University.	497 per unit	

***Health Information Administration Executive—Certificate***

YEAR	UNITS	TUITION	STATUS
1	42	14,700	

***Coding Specialist—Certificate***

YEAR	UNITS	TUITION	STATUS
1	10	2,430	
2	16	3,888	
3	6	1,458	

**Nutrition and Dietetics*****Nutrition and Dietetics—Bachelor of Science***

YEAR	UNITS	TUITION	STATUS
1	51	25,347	
2	48	23,856	

***Nutrition and Dietetics—Coordinated Program—Bachelor of Science and Master of Science***

YEAR	UNITS	TUITION	STATUS
1	51	25,347	
2	48	23,856	
3	48	29,760	
4	4	2,480	

***Nutrition and Dietetics—Coordinated Program—Master of Science***

(for bachelor's degree graduates in nonnutrition areas)

YEAR	UNITS	TUITION	STATUS
1	49	24,353	
2	49	30,380	
3	30	18,600	

***Nutrition and Dietetics—Master of Science (Didactic Program)***

YEAR	UNITS	TUITION	STATUS
1	39	24,180	
2	34	21,080	

**Care Management—Master of Science**

YEAR	UNITS	TUITION	STATUS
1	18	11,160	
2	24	14,880	
3	6	3,720	

**Occupational Therapy****Entry Level—Master of Occupational Therapy**

YEAR	UNITS	TUITION	STATUS
1	67	33,299	
2	48	23,856	
3	30	18,600	

**Track—Master of Occupational Therapy**

YEAR	UNITS	TUITION	STATUS
1	65	32,305	
2	45	22,365	
3	30	18,600	

**Progression—Master of Occupational Therapy**

(applies only to graduated LLU OTA students)

YEAR	UNITS	TUITION	STATUS
1	63	31,311	
2	47	23,359	
3	30	18,600	

**Postprofessional—Master of Occupational Therapy**

Units and tuition vary, depending on units transferred into Loma Linda University.

YEAR	UNITS	TUITION	STATUS
1	26	16,120	
2	16	9,920	

**Doctor of Occupational Therapy**

Units and tuition vary.

YEAR	UNITS	TUITION	STATUS
1	23	14,260	
2	24	14,880	
3	11	6,820	

**Physical Therapy****Physical Therapist Assistant—Associate in Science**

YEAR	UNITS	TUITION	STATUS
1	57	21,261	
2	6	2,238	

***Physical Therapist Assistant—Associate in Science—two-year track***

YEAR	UNITS	TUITION	STATUS
1,2,3	Units may vary.	373 per unit	

***Postprofessional—Master of Physical Therapy***

YEAR	UNITS	TUITION	STATUS
1	33	18,579	
2	12	6,756	

***Entry-Level—Doctor of Physical Therapy***

YEAR	UNITS	TUITION	STATUS
1	74	38,554	
2	64.5	33,605	
3	28.5	14,849	

***Postprofessional—Doctor of Physical Therapy***

YEAR	UNITS	TUITION	STATUS
1	36	20,268	
2	9	5,067	

***Postprofessional—Doctor of Physical Therapy—64-unit track***

YEAR	UNITS	TUITION	STATUS
1	31	17,453	
2	33	18,579	

***Postprofessional—Doctor of Science***

YEAR	UNITS	TUITION	STATUS
1	33	18,579	
2	39	21,957	
3	12	6,756	

***Progression—Doctor of Physical Therapy***

YEAR	UNITS	TUITION	STATUS
1	74	38,554	
2	64.5	33,605	
3	28.5	14,489	

***Entry Level Master of Science—Orthotics and Prosthetics***

YEAR	UNITS	TUITION	STATUS
1	48	23,856	
2	66	32,802	
3	40	19,880	

***Postprofessional Master of Science—Orthotics and Prosthetics***

YEAR	UNITS	TUITION	STATUS
1	33	18,579	
2	12	6,756	

**Physician Assistant Sciences***Physician Assistant—Master of Physician Assistant*

YEAR	UNITS	TUITION	STATUS
1	56	34,720	
2	57	35,340	
3	8	4,960	

**Radiation Technology***Medical Radiography—Associate in Science*

YEAR	UNITS	TUITION	STATUS
New	38	14,174	
Cont	23	8,579	

*Medical Sciences—Bachelor of Science*

YEAR	UNITS	TUITION	STATUS
1,2	Units may vary depending upon units transferred into Loma Linda University.		

*Radiation Therapy—Certificate*

YEAR	UNITS	TUITION	STATUS
New	27	16,740	
Cont	3	1,860	

*Diagnostic Medical Sonography—Certificate*

YEAR	UNITS	TUITION	STATUS
New	18	11,160	Track 1 General/Vascular
Cont 1	17	10,540	Track 1
Cont 2	3	1,860	Track 1
New	19	11,780	Track 2 Cardiac
Cont	3	1,860	Track 2

*Medical Dosimetry—Certificate*

YEAR	UNITS	TUITION	STATUS
New	30	18,600	Track A Physics
Cont	10	6,200	Track A
New	20	12,400	Track B Rad. Therapist
Cont	10	6,200	Track B

*Nuclear Medicine Technology—Certificate*

YEAR	UNITS	TUITION	STATUS
New	15	9,300	
Cont	5	3,100	

***Special Imaging Technology—CT and MRI***

YEAR	UNITS	TUITION	STATUS
New	18	11,160	

***Special Imaging Technology—Certificate in Computed Tomography (CT)***

YEAR	UNITS	TUITION	STATUS
New	10	6,200	

***Special Imaging Technology—Certificate in Magnetic Resonance Imaging (MRI)***

YEAR	UNITS	TUITION	STATUS
New	12	7,440	

***Radiation Sciences—Master of Science***

YEAR	UNITS	TUITION	STATUS
1	18	11,160	
2	24	14,880	
3	7	4,340	

***Imaging Informatics—Certificate***

YEAR	UNITS	TUITION	STATUS
1	18	8,949	
2	6	2,982	

***Radiologist Assistant—Master of Science degree student entering with A.A./A.S.***

YEAR	UNITS	TUITION	STATUS
1	42	20,874	
2	39	24,180	
3	30	18,600	

***Radiologist Assistant Track 2—Master of Science degree student entering with B.S./B.A.***

YEAR	UNITS	TUITION	STATUS
1	39	24,180	
2	29	17,980	

***Cardiac Electrophysiology—Certificate***

YEAR	UNITS	TUITION	STATUS
1	44.5	15,798	
2	8	2,840	

***Cardiac Electrophysiology—Associate in Science***

YEAR	UNITS	TUITION	STATUS
1	47.5	17,718	
2	10	3,730	

NOTE: Tuition excludes enrollment fee.

## Supplies

Estimated annual expense of \$600-\$1,500 for supplies (textbooks, professional apparel, materials), depending on program and year of study.

## Special tuition charges

50 CMSD 589 Remediation/Advance Directed Teacher, CMSD 599 Remediation/Externship

Remediation Clinic: Students who do not complete the required skill set within one quarter of assigned clinical experiences may need to register for additional clinical work. In this case, registration for remedial clinic is required for a minimum of 1 unit at the regular tuition rate.

## Special charges

60	Application
30	Reapplication
100	Acceptance deposit, nonrefundable (applied on tuition)
200	Acceptance deposit for CMSD MS and TM, non refundable
350	Acceptance deposit for D.P.T. degree, nonrefundable (applied on tuition)
500	Acceptance deposit for M.P.A. degree, nonrefundable (applied on tuition)
50	Late registration charge (if student registers later than one full week before the first day of the term; see University calendar for specific dates.
25	Returned check charge
50	Late payment charge, if loan funds are not received by registration and loan application was made less than thirty days before registration; if check is returned by bank (in addition to \$25 charge); or if student gave a postdated check at registration.
200	Application fee for PPMPT

## ON- AND OFF-CAMPUS STUDENT HOUSING

Students may go to <llu.edu/central/housing> for housing information and a housing application form.

## AWARDS AND SCHOLARSHIPS

Awards for scholastic attainment and leadership ability have been made available to students whose performance and attitudes reflect well the ideals and purposes of the school.

### School-wide Scholarships

#### SAHP Endowment Scholarship Fund

The SAHP Endowment Scholarship Fund is given to students who require financial aid assistance in order to attend the school. Recipients are chosen by the SAHP dean's office.

#### Hervig Scholarship Fund

The Robert and Ruth Hervig School of Allied Health SDA Scholarship Fund is given to students enrolled in the school who are members of the Seventh-day Adventist Church and exhibit a Christian lifestyle.

**Selma Andrews Award**

The Selma Andrews Award is open to all students of the school. Students are encouraged to apply to their departments for scholarships from this fund. There is no application deadline.

**Cardiopulmonary Sciences****American Medical Response**

The American Medical Response (AMR) Scholarship is given to a student who demonstrates excellence in the clinical practice of emergency medical service (EMS) and outstanding academic achievement in the Emergency Medical Care Program. Preference is given to current or past employees of AMR.

**Emergency Medical Care Alumni Scholarship**

The Emergency Medical Care Alumni Scholarship Award is presented to a student who has shown exceptional quality of work in the Emergency Medical Care Program and related projects, with contributions to the emergency medical care community through acts of diversity, service, or volunteerism.

**Faculty Award**

The Faculty Award is presented to a student from the Emergency Medical Care B.S. degree and the Respiratory Care B.S. degree programs who has shown promise of outstanding professional achievement and whose performance is in harmony with the objectives and goals of the University.

**Louisa Jezerinac Cardiopulmonary Scholarship Award**

The Louisa Jezerinac Cardiopulmonary Scholarship Award is given to a student whose patient care exemplifies the qualities of compassion and dedication.

**Robert L. Wilkins Memorial Fund**

The Robert L. Wilkins Memorial Fund was established to honor the memory of alumnus and longtime faculty member Dr. Robert L. Wilkins. This scholarship is given to a student with financial need, is in good standing with the department and has an interest in research and/or teaching.

**William von Pohle Memorial Respiratory Care Clinical Excellence Award**

The William von Pohle Memorial Respiratory Care Clinical Excellence Award is given each year to the respiratory care student in his/her senior year who demonstrates excellence in clinical practice and case presentations, as well as an attitude consistent with the mission of Loma Linda University.

**Clinical Laboratory Science****Affiliate Recognition Award**

The Affiliate Recognition Award is presented to a senior clinical laboratory science student for outstanding performance, cooperation, and motivation during the clinical practicum year. Selection is based on recommendation of the clinical faculty.

**Chair's Award**

The Chair's Award is given to a senior clinical laboratory science student and to a cytotechnology student in recognition of outstanding scholarship and leadership qualities that are in harmony with the objectives and goals of the University. Selection is based on the recommendation of the faculty.

**Clinical Laboratory Science (CLS) Scholarship**

The clinical laboratory science (CLS) endowment fund is presented to CLS students on the basis of scholarship and promise of professional achievement.

**Faculty Award**

The Faculty Award is presented to a senior clinical laboratory science student and to a cytotechnology student who have shown promise of outstanding professional achievement and who intend to pursue a career in the area of medical technology or cytotechnology. Selection is based on recommendation of the faculty.

**Marlene Ota Scholarship**

The Marlene Ota Scholarship is awarded to a cytotechnology student who has demonstrated integrity, leadership, and academic excellence.

**Moncrieff Scholarship Award**

The Moncrieff Scholarship Award is presented annually to a clinical laboratory science student who has demonstrated superior scholarship; professional dedication; financial need; and such personal attributes as dependability, integrity, and initiative.

**Walsch-Loock Scholarship Award**

The Walsch-Loock Scholarship Award is presented annually to a clinical laboratory science student on the basis of scholarship, promise of professional achievement, and financial need.

**Communication Sciences and Disorders****Evelyn Britt Promising Student Award**

The Evelyn Britt Promising Student Award is presented to students preparing for graduate work in speech-language pathology and audiology. It recognizes students who show promise of scholastic and professional achievement.

**Outstanding Senior Award**

The Outstanding Senior Award is given to a student who has performed well academically, developed good clinical skills, and contributed to creating a positive learning environment within the department.

**Dean's Award**

The Dean's Award is given annually in recognition of academic excellence and commitment to the objectives of the school.

**President's Award**

The President's Award is given annually in recognition of superior scholastic attainment and active participation in the student community, within the framework of Christian commitment. A recipient is selected from each school of the University.

## **Health Information Management**

### **Elizabeth M. Guerra Scholarship**

The Elizabeth M. Guerra Student Aid Endowment Fund is given to a senior in the bachelor's degree program with a grade-point average of at least 3.5. The student must demonstrate a dedication to the profession of health information management, good leadership skills and good personal qualities, in the determination of the faculty of the HIM department.

### **Audrey Shaffer Endowment**

In the interest of promoting student involvement in the international mission of Loma Linda University, the Audrey Shaffer Endowment provides travel expenses for student clinical and affiliation experiences in health care facilities outside the United States. Candidates must demonstrate academic excellence and leadership qualities. Recommendations from department faculty and students are required.

### **Faculty Award**

The Faculty Award is presented to students who have shown promise of leadership, scholarship, and potential contribution to their chosen profession. One award is given annually to students graduating from the programs in health information administration and health information systems.

### **Health Information Management Student Awards**

The Health Information Management Student Awards are given by classmates to the graduating students who have shown promise of leadership, scholarship, and potential for contribution to their chosen profession.

### **Margaret B. Jackson Scholarship Award**

The Margaret B. Jackson Scholarship Award is presented by the department to a senior on the basis of scholarship, promise of outstanding professional achievement, and financial need.

### **Sally Jo Davidian Scholarship**

The Sally Jo Davidian Scholarship is presented to a student who demonstrates professionalism, leadership potential, scholastic achievement, and financial need. Preference is given to single mothers returning to college.

### **Smart Corporation Scholarship Award**

The Smart Corporation Scholarship Award is presented to a health information administration student on the basis of scholarship and financial need.

## **Nutrition and Dietetics**

### **Fred Lambert Memorial Scholarship Award**

The Fred Lambert Memorial Scholarship Award is given annually to a junior who has demonstrated outstanding potential for success as an administrative dietitian. The award will be given based on academic success, involvement in social and professional activities, personal promotion of the profession and image of the administrative dietitian, and submission of an essay discussing how the food service administrator can contribute to the mission of the Seventh-day Adventist Church.

**Kathleen Keen Zolber Scholarship**

The Kathleen Keen Zolber Scholarship Award is given by the department to selected juniors in recognition of scholarship and promise of outstanding professional achievement.

**Lydia Sonnenberg Scholarship Award**

The Lydia Sonnenberg Scholarship Award is presented annually to selected junior students. Selection is based on academic performance, as well as demonstrated skill and interest in publishing nutrition information for the public.

**Martha Miller Scholarship Award**

The Martha Miller Scholarship Award is given annually to a sophomore or junior student based on scholarship, demonstrated financial need, and promise of outstanding professional achievement.

**Nutrition and Dietetics Alumni Association Scholarship Award**

The Nutrition and Dietetics Alumni Association Scholarship Award is given annually to a senior student who has demonstrated outstanding academic performance and promise of expertise in professional achievement.

**Nutrition and Dietetics Faculty Award**

The Nutrition and Dietetics Faculty Award, presented to selected junior students, is based on scholarship, promise of professional achievement, and demonstrated financial need.

**Ruth Little Nelson Scholarship Award**

The Ruth Little Nelson Scholarship Award is presented to selected students in the junior year. Selection is based on scholarship; leadership; financial need; and such personal attributes as integrity, dependability, and initiative.

**Winifred Van Pelt Schmitt Scholarship Endowment**

The Winifred Van Pelt Schmitt Scholarship Endowment provides scholarships to nutrition and dietetics students who have demonstrated financial need, satisfactory progress toward a degree, and professional progress.

**Occupational Therapy****Daniel Alan Gibson Memorial Scholarship Award**

The Daniel Alan Gibson Memorial Scholarship Award is given to M.O.T. degree students based on financial need, and recognizes commitment to focus on physical dysfunction/orthopaedics in occupational therapy.

**Edwinna Marshall Scholarship Award**

The Edwinna Marshall Scholarship Award is given annually to M.O.T. degree students based on financial need, and recognizes potential for leadership and education in the field of occupational therapy.

**Faculty Award**

The Faculty Award is presented to a graduating student who has shown promise of outstanding professional achievement and whose performance is in harmony with the objectives of the University.

**Hamid Javaherian Memorial Award**

The Hamid Javaherian Award is given to a student in the second or third year of the Doctor of Occupational Therapy Program who exemplifies compassion, leadership, program innovation, and dedication to the community in the spirit of occupational justice.

**Inland Counties Occupational Therapy Association of California Award**

The Inland Counties Occupational Therapy Association of California Award is presented to senior OT students in recognition of excellent academic and clinical performance.

**Lynn Arrateig Memorial Scholarship Award**

The Lynn Arrateig Memorial Scholarship Award is given annually to an M.O.T. degree student based on financial need, and recognizes commitment to the practice of pediatrics or geriatrics in the field of occupational therapy.

**Occupational Therapy Alumni Association Award**

The Occupational Therapy Alumni Association Award recognizes outstanding scholastic and professional achievement in occupational therapy.

**Occupational Therapy Endowment Scholarship Award**

The Occupational Therapy Endowment Scholarship Award is given annually to students based on scholarship, financial need, and promise of professional achievement.

**Rose Bucher Memorial Scholarship**

The Rose Bucher Memorial Scholarship Award is given to M.O.T. degree students based on financial need and recognized commitment and creativity in the practice of occupational therapy.

**Physician Assistant Program****PA Faculty Award**

The PA Faculty Award is presented to a physician assistant student who has shown promise of outstanding professional achievement and whose performance is in harmony with the objectives and goals of the University.

**Spirit of LLU Physician Assistant Award**

The Spirit of LLU Physician Assistant Award recognizes students who have dedicated themselves to their professional goal, persevering with good humor in the face of adversity; have shown compassion for and sensitivity to others; have a positive attitude; and have served as positive ambassadors for this program throughout their PA program training.

**The Chair's Award**

The Chair's Award is presented to a senior PA student in recognition of outstanding performance and professional deportment in both the didactic and clinical phases of the program. The recipient is an individual who has consistently demonstrated qualities that are in harmony with the goals of the department and the University.

**Physician Assistant Alumni Award**

Recipients of the Physician Assistant Alumni Award demonstrate the following criteria: sound judgment in resolving student issues, willingness to lead activities or study groups, mature and responsible behavior, good rapport with peers and faculty/staff, and recent involvement in community service.

**Association of Schools of Allied Health Professions Scholarship for Excellence Award**

The Association of Schools of Allied Health Professions Scholarship is presented to the student who is recognized for outstanding performance in the allied health professions, who is achieving excellence in his/her academic program, and who has significant potential to assume future leadership roles in an allied health profession.

**The Rising Star Award**

The Rising Star Award is presented to the student whose overall performance exemplifies the following criteria: advancing the physician assistant profession, entrepreneurship in invention or learning, noteworthy performance in research, outstanding community service, interest in mentoring patients, and contributing to the department and/or University.

**Physical Therapy****Faculty Award**

The Faculty Award is presented to a senior who has shown promise of outstanding professional achievement, and whose performance is in harmony with the objectives and goals of the University.

**Jonna Hughes Memorial Scholarship**

The Jonna Hughes Memorial Scholarship was established by Dr. Billy Hughes to continue his mother's tradition of service. The scholarship benefits female physical therapy students who have risen above personal circumstances to fulfill a life in service to others.

**Fred B. Moor Award**

The Fred B. Moor Award is presented to a senior who has demonstrated exceptional clinical skills and knowledge in the care of physical therapy patients.

**Physical Therapy Alumni Association Achievement Award**

The Physical Therapy Alumni Association Achievement Award recognizes outstanding scholastic attainment and active participation in physical therapy student activities and community involvement.

**Physical Therapy Alumni Association Scholarship Award**

The Physical Therapy Alumni Association Scholarship Award recognizes the student with the highest scholastic attainment in professional studies.

**Randall C. Isley Memorial Award**

The Randall C. Isley Memorial Award recognizes a graduating PTA student who demonstrates scholarship, outstanding compassion, and inspiration in his/her pursuit of PTA as a second career.

**Ron Hershey Student Endowment**

The Ron Hershey Student Endowment provides scholarship funds for students who demonstrate financial need and who exemplify the Christian qualities of love, patience, caring, humility, and a striving for excellence.

**Thomas G. Burke Memorial Scholarship Award**

The Thomas G. Burke Memorial Scholarship Award recognizes the outstanding student dedicated to the pursuit of a second career.

**Radiation Technology****Faculty Award**

The Faculty Award is given by the department in recognition of superior scholarship.

**Walter L. Stilson Award**

The Walter L. Stilson Award is given to a student in each clinical facility who has shown promise of outstanding professional achievement and whose performance is in harmony with the objectives of the University.

**ADDITIONAL REQUIREMENTS**

For additional policies governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

# Cardiac Electrophysiology Technology—AH

A.S., Certificate

ALAN ALIPOON, Program Director

## FACULTY

Alan Alipoon

Joseph A. Giron

Rose Morgan

Electrophysiology is a subspecialty of cardiology that focuses on treating heart rhythm abnormalities. The cardiac electrophysiology technologist will assist the cardiologist during invasive procedures, including diagnostic electrophysiology studies, arrhythmia mapping, catheter ablation for supraventricular and ventricular tachycardias; and for pacemaker, implantable cardioverter defibrillator (ICD), and cardiac resynchronization therapy device implantations.

## THE PROGRAM

The Cardiac Electrophysiology Technology Program leads either to a University certificate or to an Associate in Science degree.

The Associate in Science degree in cardiac electrophysiology is based on one year of prerequisites completed at any regionally accredited college or university. The four quarters of course work at Loma Linda University begin with the Autumn Quarter of the sophomore year. Course work includes clinical experience at affiliated cardiac electrophysiology departments. The Associate in Science degree is primarily face to face with some Web-enhanced courses.

The four-quarter certificate in cardiac electrophysiology is available to those currently working in the cardiac electrophysiology profession (with documented experience by their medical director) or another health-related profession (such as respiratory, radiography, or nursing). Progression through the certificate curriculum is primarily online with few face-to-face meetings on the Loma Linda University campus.

## ACCREDITATION

The Cardiac Electrophysiology Technology Program is approved by the Board of Trustees of Loma Linda University.

Loma Linda University is regionally accredited by the Western Association of Schools and Colleges (WASC), 985 Atlantic Avenue, Suite 100, Alameda, CA 94501; telephone: 510/748-9001; FAX: 510/748-9797; Web: <[www.wascweb.org](http://www.wascweb.org)> or <[wascsr@wascsr.org](mailto:wascsr@wascsr.org)>.

## CPR CERTIFICATION

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health care provider level. This may be completed prior to beginning the program of study or be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

## STUDENT LEARNING OUTCOMES

Upon completion of the program, the graduate should be qualified to:

1. Demonstrate clinical competence.
2. Communicate effectively.
3. Develop critical-thinking and problem-solving skills.
4. Demonstrate the values and attitudes of an entry-level cardiac electrophysiology technologist.

## ADMISSION

Minimum G.P.A. is 2.4. Prerequisites (listed below) should be completed.

### Prerequisite

Religion: 4 units per year of attendance at a Seventh-day Adventist college or university

High school algebra or intermediate algebra in college

Anatomy and physiology

Introductory chemistry or high school chemistry

Introductory physics or high school physics, recommended

Choose one from the following: general psychology, general sociology, cultural anthropology

English composition, complete sequence

Electives to meet the minimum total requirement of 39 quarter (51 semester) units for the A.S. degree

Autumn Quarter		Cert	AS
AHCJ 326	Fundamentals of Health Care		2.0
AHCJ 328	Wholeness Portfolio I		1.0
CEPT 245	Cardiovascular Anatomy and Physiology	3.0	3.0
CEPT 248	Cardiovascular Patient Assessment	2.0	2.0
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I	2.0	2.0
CEPT 258	Fundamentals of Biomedical Science	2.0	2.0
CEPT 261	Cardiac Electrophysiology Science I	3.0	3.0
CEPT 275	Cardiovascular Pharmacology	3.0	3.0
CEPT 321	Cardiac Electrophysiology Clinical Practicum I	0.5	0.5
Totals		15.5	18.5

Winter Quarter		Cert	AS
AHCJ 402	Pathology I	4.0	4.0
CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II	2.0	2.0
CEPT 262	Cardiac Electrophysiology Science II	3.0	3.0
CEPT 271	Cardiology Diseases and Therapeutics I	2.0	2.0
CEPT 281	Cardiac Electrophysiology Procedures I	3.0	3.0
CEPT 322	Cardiac Electrophysiology Clinical Practicum II	1.5	1.5
Totals		15.5	15.5

<b>Spring Quarter</b>		<b>Cert</b>	<b>AS</b>
AHCJ 305	Infectious Disease and the Health Care Provider	1.0	1.0
CEPT 263	Cardiac Electrophysiology Science III	3.0	3.0
CEPT 272	Cardiology Diseases and Therapeutics II	2.0	2.0
CEPT 282	Cardiac Electrophysiology Procedures II	3.0	3.0
CEPT 285	Cardiology	3.0	3.0
CEPT 323	Cardiac Electrophysiology Clinical Practicum III	1.5	1.5
Totals		13.5	13.5

<b>Summer Quarter</b>		<b>Cert</b>	<b>AS</b>
CEPT 324	Cardiac Electrophysiology Clinical Practicum IV	2.0	2.0
CEPT 345	Case Studies in Cardiac Electrophysiology	2.0	2.0
CEPT 348	Cardiac Electrophysiology Seminar	3.0	3.0
REL_ 4__	Upper Division Religion	2.0	2.0
RELE 457	Christian Ethics and Health Care		2.0
Totals		9.0	11.0
<b>Overall Totals</b>		<b>53.5</b>	<b>58.5</b>

## **CERTIFICATION**

Upon completion of the program, students will be eligible for certification from the International Board of Heart Rhythm Examiners (IBHRE).

## Clinical Laboratory Science—AH

B.S.

RODNEY M. ROATH, Chair, Department of Clinical Laboratory Science

KATHERINE G. DAVIS, Program Director

MONIQUE K. GILBERT, Clinical Coordinator

PAUL C. HERRMANN, Medical Director

### FACULTY

Craig E. Austin

Grace T. Baker

Nove Basical-Oliver

Terry K. Belcher

James A. Brandt

Linda S. Buckert

Helen E. Clark

Louis J. Cota

Katherine G. Davis

Betty M. Fitzsimmons

Monique K. Gilbert

Sally P. Greenbeck

Paul C. Herrmann

Ronald H. Hillock

J. Kapua Hollands

Ronald S. Johnson

Susie M. Johnson

Jasmine H. Kaloshian

Tuyhoa T. Le

John E. Lewis

Glenis D. Linas

Thuan H. Nguyen

James M. Pappas

Shashank Patel

Rodney M. Roath

Teri J. Ross

Mojgan Sassounian

Stuart B. Schneider

Linda J. Shain

Patricia A. Williams

Jane N. Zappia

A student who has an interest in science, an investigative mind that enjoys the challenge of solving problems quickly and accurately, and a desire to help others should consider a career as a clinical laboratory scientist.

Clinical laboratory scientists examine and analyze body fluids, tissues, and cells. They look for bacteria, parasites, or other microorganisms; analyze the chemical content of fluids; match blood for transfusions; and test for drug levels in the blood to show how a patient is responding to treatment.

Clinical laboratory scientists perform complex chemical, biological, hematological, immunologic, microscopic, and bacteriologic tests. They use, maintain, and troubleshoot sophisticated laboratory equipment that is used to perform diagnostic tests. The clinical laboratory scientist possesses the scientific and diagnostic skills required for DNA and biomolecular technology and genetic engineering applications, analyzes these test results, and discusses them with the medical staff.

## **OPPORTUNITIES**

Employment of clinical laboratory workers is expected to parallel the growth of other health care occupations through the year 2014, particularly as the volume of laboratory tests increases with population growth and with the development of new technology. Employment opportunities are excellent, with current vacancy rates of 16 percent. The twenty-first century is offering clinical laboratory scientists new avenues for test development, experimental design, administration, and education. Clinical laboratory scientists work in hospitals or similar medical facilities, clinical and reference laboratories, home health diagnostics, transfusion services, physicians' offices, and private medical clinics. Employment is also available in pharmaceutical and biotechnology companies, health information systems, DNA technology and genetic engineering corporations, research laboratories, federal government agencies, forensics and crime investigation, veterinary hospitals, U.S. Public Health Service facilities, areas of medical product development, and customer and patient education.

## **THE PROGRAM**

The two-year Clinical Laboratory Science Program includes clinical training and culminates in a Bachelor of Science degree. Prerequisite courses may be taken at any accredited college or university and are completed during the freshman and sophomore years. Accepted students transfer into the program at the junior year level, which begins in August during the postsummer session. After satisfactory completion of the program, the student is awarded a Bachelor of Science degree and is eligible to take the national board examination and to become a licensed clinical laboratory scientist in California.

The ten-month junior year includes lecture and laboratory. Emphasis is on the basic clinical science courses, including theory and correlations.

The ten-month senior year is a clinical practicum that provides professional clinical experience in the hospital laboratory environment. Emphasis is on technical proficiency, application of theory to patient care, laboratory organization, and managerial skills.

Senior students must coordinate their time with the operation of Loma Linda University Medical Center's clinical laboratory and with supplemental affiliate training laboratories in the community.

## **CLINICAL AFFILIATIONS**

Multiple clinical affiliations enrich the student's clinical training by providing exposure to procedures in different types of medical facilities. During the forty-week clinical practicum, supplemental training may be scheduled at any of the following clinical sites:

### **Primary affiliation**

Loma Linda University Medical Center  
Loma Linda, California

## Supplemental affiliations

LifeStream  
San Bernardino, California

Community Hospital of San Bernardino  
San Bernardino, California

Hoag Hospital  
Newport Beach, California

Jerry L. Pettis Memorial Veterans Medical Center  
Loma Linda, California

Kaiser Permanente Medical Center  
Fontana, California

## TRANSPORTATION TO SCHEDULED ASSIGNMENTS

Transportation to training laboratories is the responsibility of the student. Depending on the clinical assignment, commuting times may be up to two hours one way. Senior students must coordinate their time with the operational schedules of the Loma Linda University Medical Center Clinical Laboratory and affiliate laboratories in the community. The senior schedule is a full-time week (forty clock hours) arranged on a Monday-through-Friday, day shift schedule. On occasion, days or times outside of this typical schedule may be necessary to allow students exposure to unique procedures. A special calendar schedule, different from the University academic calendar, is followed.

## ACCREDITATION

The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 North River Road, Suite 720, Rosemont, IL 60018; telephone: 773/714-8800; FAX: 773/714-8886; email: <naacinfo@naacsl.org>; Web site: <naacsl.org>.

The program also satisfies the requirements in medical technology of the American Society of Clinical Pathologists' Board of Registry for Medical Technology, P.O. Box 12277, Chicago, IL 60612-0277. The program is approved by the California Department of Public Health (CDPH), Laboratory Field Services (LFS), 850 Marina Bay Parkway, Richmond, CA 94804-6403; telephone: 510/873-6327. <cdph.ca.gov/programs/lfs>

## PROFESSIONAL CERTIFICATION AND LICENSURE

Completion of the required sequence of academic course work and directed professional experience prepares the graduate to take the certifying examination of the ASCP Board of Certification and obtain licensure by the state of California. Information regarding the examination can be obtained from the program director.

In 1999, the program name was changed from medical technology to clinical laboratory science.

## DEPARTMENT GOALS

1. To provide opportunity, instruction, and guided experience by which the student may acquire the basic knowledge and attain the skills essential to the practice of a chosen profession.
2. To help the student accept responsibility for integrity, ethical relationships, and empathic attitudes that can contribute to the welfare and well-being of patients.
3. To help the student develop a background of information and attitudes conducive to interprofessional understanding and cooperation.
4. To encourage the student to cultivate habits of self-education that will foster lifelong growth.
5. To engender and nurture in the student the desire to serve mankind, and in particular, to serve as needed in the medical centers sponsored by the Seventh-day Adventist Church both in the United States and abroad.

## STUDENT LEARNING OUTCOMES

1. Demonstrate basic knowledge and technical ability essential to the practice of clinical laboratory science.
2. Practice professionalism through ethical behavior and attitudes.
3. Demonstrate leadership and administrative skills in laboratory practice and the community, consistent with the mission of the School of Allied Health Professions.
4. Adhere to rules and regulations promoting workplace and patient safety and continuous quality improvement (CQI).
5. Exhibit analytical and critical thinking skills necessary to succeed in laboratory medicine.

## PROGRAM OBJECTIVES

The Clinical Laboratory Science Program endeavors to present a complete educational experience that culminates in a Bachelor of Science degree. The education and clinical experience obtained in this program will give the student the eligibility to take the clinical laboratory scientist examination offered by the ASCP Board of Certification and other entities approved by the state of California. The bachelor's degree in clinical laboratory science is granted independently of any external certification or licensing examinations. The graduate will demonstrate professional entry-level competencies in chemistry, hematology, immunohematology, immunology, and microbiology; as well as their respective subsections.

## HOW TO APPLY

Applications to the Clinical Laboratory Science Program are accepted beginning December 1. Early submission of application is recommended. Applications continue to be reviewed and accepted until the program is filled. Preference will be given to applicants whose completed applications and transcripts are received by March 1. Complete an online application at <llu.edu/central/apply>.

Applicants must complete prerequisite course work at any accredited college before being admitted to the School of Allied Health Professions; projected course work that will be completed before beginning the program will be considered in the application process.

## ACADEMIC PROGRESSION

A minimum grade of C (2.0) is required for all courses in the program; C- grades are not acceptable. A student who receives a grade of less than C in any academic course that is part of the professional curriculum is automatically placed on probation. A student who receives an "Unsatisfactory" in any

segment of a clinical practicum is automatically placed on clinical probation. In probation or in clinical probation, continued enrollment for the next quarter, term, or rotation segment is subject to the recommendation of the department.

If continued enrollment is not recommended, the department will notify the student in writing. If continued enrollment is recommended, the student will be required to institute a learning assistance program contract and meet regularly scheduled appointments with the academic advisor. A student on probation is automatically dismissed from the program if a second grade of less than C is received in any academic course that is part of the professional curriculum, or if a second Unsatisfactory is received during any subsequent rotation segment. A student on clinical probation is automatically dismissed from the program if a second Unsatisfactory is received during any subsequent rotation segment. Readmission to the program will require reapplication.

### **CPR CERTIFICATION**

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experiences. This certification must be completed at the American Heart Association health care provider level. Certification may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts Building, 24887 Taylor Street, Suite 102.

### **ADMISSION**

To be eligible for admission, applicants must have completed a minimum of 96 quarter units or 64 semester units at an accredited college or university. A minimum grade of C (2.0) is required for all transfer courses; C- grades are not acceptable for transfer. A minimum G.P.A. of 2.75 for science is recommended. Prerequisites and transfer patterns may be viewed at <llu.edu/allied-health/sahp/transfer>.

### **Prerequisite**

Humanities and religion—20 quarter or 14 semester units total, selected from at least three of the humanities and religion areas:

Art/Music (performing arts limited to 2 quarter units)

Civilization/History, foreign language, literature, philosophy, religion—

a maximum of 8 quarter units of religion may be applied to the above 20 quarter/14 semester units; for students who attended or are enrolled in an Adventist college, 4 quarter units of religion are required per year attended

College mathematics (algebra or higher level)

General chemistry with laboratory, complete sequence

Organic chemistry with laboratory, complete sequence

\* Introductory physics with laboratory, complete sequence (must include principles of light and electricity)

\* General biology with laboratory, one course

Cultural diversity or cultural anthropology (one course); (select remainder of social sciences units to total of 10 quarter units from at least two of these areas: anthropology, economics, geography, political science, psychology, sociology)

English composition, complete sequence; select remainder of communication units to total 9 quarter units from these courses: computers, public speaking, critical thinking

Health education, personal health, or nutrition (one course)

Two physical education courses

Electives, as necessary, to meet the minimum total requirement of 96 quarter units; recommended: anatomy and physiology, biochemistry, cellular or molecular biology, genetics, speech, computer applications, critical thinking

For total unit requirements for graduation, see Division of General Studies (Section II).

\*Students planning to apply to advanced degree programs should verify current admission requirements.

#### Junior Year, Post-Summer Session

Units

CLSM 105	Procedures in Phlebotomy	4.0
CLSM 309	Quantitative Analysis (Chemical)	4.0
Totals		8.0

#### Autumn Quarter

Units

AHCJ 328	Wholeness Portfolio I	Course spans entire academic year.	1.0
AHCJ 418	Physiology I		4.0
CLSM 307	Medical Parasitology		3.0
CLSM 321	Hematology I		4.0
CLSM 325	Clinical Immunology		3.0
CLSM 331	Biochemistry		5.0
Totals			20.0

#### Winter Quarter

Units

CLSM 322	Hematology II		4.0
CLSM 327	Clinical and Pathogenic Microbiology I		5.0
CLSM 332	Clinical Chemistry I		4.0
CLSM 341	Immunoematology I		3.0
RELE 457	Christian Ethics and Health Care		2.0
Totals			18.0

#### Spring Quarter

Units

CLSM 303	Urine and Body Fluid Analysis I		1.0
CLSM 328	Clinical and Pathogenic Microbiology II		5.0
CLSM 333	Clinical Chemistry II		4.0
CLSM 342	Immunoematology II		3.0
CLSM 396	CLS Junior Seminar		2.0
RELT 423	Loma Linda Perspectives		2.0
Totals			17.0

#### Senior Year, Post-Summer Session

Clinical practicum begins concurrently; see section below.

Units

CLSM 435	Immunoassay and Molecular Diagnostic Techniques		3.0
Totals			3.0

<b>Autumn Quarter</b>			Units
AHCJ 498	Wholeness Portfolio II	Course spans entire academic year.	1.0
CLSM 451	Clinical Laboratory Management I		2.0
CLSM 496	Clinical Laboratory Science Seminar I		1.0
REL_4__	Upper Division Religion		2.0
Totals			6.0

<b>Winter Quarter</b>			Units
CLSM 452	Clinical Laboratory Management II		2.0
CLSM 497	Clinical Laboratory Science Seminar II		1.0
REL_4__	Upper Division Religion		2.0
Totals			5.0

<b>Spring Quarter</b>			Units
CLSM 453	Clinical Laboratory Management III		2.0
CLSM 498	Clinical Laboratory Science Seminar III		2.0
Totals			4.0

<b>Senior Year Clinical Practicum</b>			Units
CLSM 471	Clinical Practicum I	A twelve-week clinical rotation in the areas of hematology, urinalysis, and parasitology.	6.0
CLSM 411	Urine and Body-Fluid Analysis II (1)	Corequisites	9.0
CLSM 414	Clinical Parasitology (2)		
CLSM 422	Hematology III (6)		
Totals			15.0

<b>Senior Year Clinical Practicum</b>			Units
CLSM 472	Clinical Practicum II	A twelve-week clinical rotation in the areas of microbiology and immunohematology.	6.0
CLSM 413	Diagnostic Microbiology (6)	Corequisites	9.0
CLSM 442	Immunohematology III (3)		
Totals			15.0

<b>Senior Year Clinical Practicum</b>			Units
CLSM 473	Clinical Practicum III	A twelve-week clinical rotation in the areas of chemistry, immunology, and special procedures	6.0
CLSM 434	Clinical Chemistry III (5)	Corequisites	9.0
CLSM 455	Special Procedures (4)		
Totals			15.0
<b>Overall Totals</b>			<b>126.0</b>

# Coding Specialist—AH

## Certificate

DEBRA HAMADA, Program Coordinator

### FACULTY

Diana Medal

Terri L. Rouse

### ADVISORY COMMITTEE

Barbara Pinkowitz, Chair

Susan Armstrong

Angela Barker

Evelia Campos

Carel Hanson

Tanya McCandish

Diana McWaid-Harrah

Diana Medal

Beverly Miller

Patricia Small

Health care facilities need coders who accurately select ICD-9-CM codes, CPT codes, and DRG and APC assignments for diagnostic and surgical information recorded in health records. In most instances, financial reimbursement is directly tied to these numeric codes. The statistical information generated from these codes is also used in research, quality improvement in patient care, education, and administrative decision making.

## OPPORTUNITIES

Coding specialists are in demand in acute care and ambulatory care facilities, physicians' office practices, and long-term care facilities. A variety of government agencies require coding expertise as well. The need for accurate, skilled coders is acute in California and throughout the nation. Information about job opportunities is provided to alumni as it becomes available.

## THE PROGRAM

The Coding Specialist Program certificate is nine quarters in length. Classes meet one night a week. The last two quarters of the program consist of an internship-like laboratory experience—HLC5 961, 962 Coding Practicum I, II. These practicums meet one- to-two times per week. Prior to beginning coding courses, the student is introduced to health care records, confidentiality, ethics, and pharmacology.

## PROFESSIONAL CERTIFICATION

Upon successful completion of the program, the student is eligible to take the national entry-level certification examination of the American Health Information Management Association.

## **PROGRAM OBJECTIVES**

Upon completion of the program, the graduate should be qualified to:

1. Use with understanding the instructions in format, organization, and mechanics of the ICD-9-CM, CPT, and E & M coding systems.
2. Code with accuracy and consistency.
3. Analyze medical records to identify significant medical conditions and surgical procedures; correctly select the principal diagnosis and procedure; and appropriately sequence other diagnoses, complications, and procedures.
4. Supervise health data collection and processing through coding, indexing, and maintaining disease and operation statistics.
5. Develop policies and procedures for coding, including a plan for coding quality.
6. Follow federal, state, and professional association guidelines for coding in the health care environment.
7. Understand the concepts of the prospective payment system and perform diagnostic-related group and ambulatory patient classification assignments using decision trees and computerized patient-data groupers.
8. Delineate the difference between optimization of coding in compliance with governmental regulations and fraudulent coding.

## **ACCREDITATION**

The Coding Specialist Program is approved by the Approval Committee for Certificate Programs (ACCP), a joint committee of the American Association for Medical Transcription (AAMT), and the American Health Information Management Association (AHIMA).

## **Prerequisite**

In addition to high school graduation/GED, the following prerequisites/courses must be completed at an accredited college or university:

Human anatomy and physiology  
Medical terminology  
Introduction to computer applications

## **Corequisite**

Essentials of human diseases

## **SPECIAL COURSE WORK/CREDIT**

Credit for life experience may be offered through waiver or equivalency examination.

<b>Required</b>		<b>Units</b>
HLCS 236	Pharmacology	3.0
HLCS 239	Introduction to Health Records Science	3.0
HLCS 242	Coding I	4.0
HLCS 243	Coding II	4.0
HLCS 245	Coding III	4.0
HLCS 254	Evaluation and Management Coding for Billing and Reimbursement	3.0
HLCS 257	Coding Special Topics	3.0
HLCS 961	Coding Practicum I	2.0
HLCS 962	Coding Practicum II	2.0
RELE 457	Christian Ethics and Health Care	2.0
		Totals 30.0
		<b>Overall Totals 30.0</b>

A minimum grade of C (2.0) is required for all courses in the program.

## Communication Sciences and Disorders—AH

B.S., M.S. (transitional, traditional)

KEIKO KHOO, Department Chair

PAIGE SHAUGHNESSY, Program Director for Master of Science and Transitional Programs

KAREN MAINESS, Program Director for Bachelor of Science Program

JENNIFER ST. CLAIR, Coordinator for Clinical Education

BRIAN SHARP, Coordinator for Externship Placement

### FACULTY

Terry D. Douglas

Keiko I. Khoo

Jean B. Lowry, Professor Emeritus

Karen J. Mainess

Brian D. Sharp

Paige Shaughnessy

Jennifer St. Clair

The Communication Sciences and Disorders Program prepares students for careers in the profession of speech-language pathology or audiology. Speech-language pathologists (SLPs) evaluate and treat children and adults who have communication, swallowing, and/or cognitive communication disorders. Difficulties in the areas of speech, language, fluency, swallowing, and voice are associated with a variety of disorders, including developmental delay, hearing impairment, cleft palate, cerebral palsy, stroke, and head injury. Audiologists are involved in prevention, identification, assessment, and rehabilitation of hearing disorders. Students who choose these professions should have an interest in working with people.

### OPPORTUNITIES

The entry level for speech-language pathology is the master's degree. The entry level for audiology is the doctoral degree. Employment opportunities for speech-language pathologists and audiologists are found in speech and hearing clinics, public schools, hospitals, universities, health departments, skilled nursing facilities, home health agencies, rehabilitation centers, industry, research institutes, and private practice. These environments allow for considerable flexibility. There is ample opportunity for employment as a speech-language pathologist.

Employment opportunities for speech-language pathology assistants (SLPA) include working under the supervision of a speech-language pathologist primarily in schools. Students pursuing the Bachelor of Science degree may work towards meeting eligibility requirements for registration in the state of California as a speech-language pathology assistant.

### STUDENT PROFESSIONAL ASSOCIATION

Students are eligible for membership in the National Student Speech-Language-Hearing Association (NSSLHA). Students are encouraged to become members, read the journals, and participate in the many activities sponsored by the local chapter. Information about NSSLHA can be found at <nsslha.org>. Students are also encouraged to become student members of the California Speech-Language-Hearing Association (CSHA).

## **COMMUNICATION SCIENCES AND DISORDERS—B.S.**

The curriculum leading to the Bachelor of Science degree in communication sciences and disorders begins with the Autumn Quarter of the junior year. The freshman and sophomore years, which are taken at an accredited college or university prior to coming to Loma Linda University, provide the fundamentals of a liberal education. The emphasis in the junior and senior years is on preprofessional courses and may include practical experience.

Upon completion of the Bachelor of Science degree, students are prepared to seek admission to a graduate program in speech-language pathology or related disciplines. Students are encouraged to take CMSD 267 SLPA Fieldwork during their senior year in order to qualify for the speech-language pathology assistant license, issued by the California Speech-Language Pathology and Audiology Board.

### **Student learning outcomes**

Students who graduate with a Bachelor of Science degree in communication sciences and disorders will meet the following University outcomes:

1. Understand and apply Loma Linda University's philosophy of wholeness to their personal and professional lives.
2. Understand the importance of integrating the University's Christ-centered values into their personal and professional lives.
3. Demonstrate critical thinking.
4. Develop a commitment to discovery and life-long learning.
5. Demonstrate effective oral and written communication skills.
6. Demonstrate effective use of technology appropriate for the degree level and discipline.
7. Understand the importance of embracing and serving a diverse world.
8. Demonstrate the importance of collaborating with others within and across disciplines.

Students will also meet the following program-specific outcomes:

1. Demonstrate knowledge of basic human communication processes.
2. Demonstrate introductory knowledge of the major types of human communication disorders and swallowing disorders.
3. Demonstrate introductory knowledge of assessment and intervention procedures for the major types of human communication disorders and swallowing disorders.
4. Demonstrate a commitment to ethical and compassionate service.
5. Demonstrate introductory knowledge of processes used in discipline-related research.

## **Admission to the Bachelor of Science degree curriculum**

### **Prerequisite**

#### *Domain I*

#### **Humanities and Religion (28-32 quarter units)**

A minimum of 12 quarter units if the student is required to take 16 units of religion from a Seventh-day Adventist university before graduation\*

A minimum of 20 quarter units if the student is required to take 8 units of religion from Loma Linda University before graduation\*

Humanities—selected from at least three of the following content areas: civilization/history, fine arts, literature, modern language, performing/visual arts (not to exceed 4 quarter credits), or philosophy

\*Specific religion courses offered at Loma Linda University are required for graduation. The student's academic advisor will assist him/her in determining how many religion courses will be needed, which religion courses should be taken, and which academic quarters it would be advisable to take these courses.

### *Domain II*

#### **Scientific Inquiry and Analysis (24-32 quarter units)**

**Natural Sciences** (minimum of 12 quarter units): The credits in natural sciences must be selected from two of the following content areas--biology, chemistry, geology, mathematics, physics, and statistics.

Mathematics requirement: Four semesters of high school advanced mathematics or intermediate algebra taken in college will meet the University's mathematics requirement; however, the student will not receive academic credit for the course work. College algebra will meet the University's mathematics requirement. In addition, the student will receive academic credit for the course.

One physical science required (can be physics, geology, chemistry, physical science, astronomy, or physical geography)

One biological science required (can be anatomy and physiology, biology, or life science)

**Social Sciences** (minimum of 12 quarter units): Choose from anthropology, economics, geography, political science, psychology, or sociology

General psychology required

Human growth and development, developmental psychology, or child development required

Elective units to complete 12 quarter units minimum: Choose from anthropology, economics, geography, political science, psychology, and sociology

### *Domain III*

#### **Communication (9-13 quarter units)**

English: Course work must include a complete sequence in English composition that meets the baccalaureate degree requirements of a four-year college or university (e.g., English 101 and 102)

Speech: One speech or interpersonal communication course required

Computer courses: Not required, but course work taken in this category would be counted in this domain

### *Domain IV*

#### **Health and Wellness (2-6 quarter units)**

Personal health or nutrition: One course required

Physical activity: Must include at least two separate physical activity courses totaling a minimum of 1 quarter credit

### *Electives*

At Loma Linda University, the student begins the bachelor's degree curriculum in communication sciences and disorders with 96 quarter units (64 semester units). Students who transfer from a community college may transfer a maximum of 105 quarter units (70 semester units). All other credits must come from a senior college. Acceptance into the program to complete the bachelor's degree does not guarantee students all the academic credits needed to graduate. Some students may need to complete additional academic course work in general education while enrolled at this University in order to meet graduation requirements.

### **Application**

The application for the Bachelor of Science degree in communication sciences and disorders is available online. Official transcripts of all academic records from colleges, universities, and professional or technical schools must be provided. For complete instructions, please go to <[llu.edu/central/apply](http://llu.edu/central/apply)>. Online applications open October 1. Applications for the Bachelor of Science degree close June 1.

### **Minimum grade required for graduation**

A minimum grade of C (2.0) is required for a course to count towards graduation.

### **Clinical experience**

Supervised clinical practicum is recommended but not required in the curriculum leading to the Bachelor of Science degree. Completion of specific courses precedes placement for practicum. Clinical practicum is available for students who have a G.P.A. of 3.0 or above in the major courses.

### **Wholeness portfolio**

Undergraduate students in the School of Allied Health Professions develop a portfolio during the junior and senior years. Students register for Wholeness Portfolio I (AHCJ 328) during the junior year and Wholeness Portfolio II (AHCJ 498) during the senior year. The purpose of the portfolio is to allow students to demonstrate their work towards achieving the outcomes set forth by the University. These outcomes were developed to aid the student in achieving personal and professional balance in the spiritual, intellectual, social/emotional, and physical domains.

### **CLEP**

CLEP tests must be taken within one quarter of receiving the degree compliance report; otherwise, the course must be repeated.

### **Student progress review**

Each student's progress in the bachelor's degree curriculum is reviewed quarterly. Students are provided written feedback with recommendations for remediation if there are concerns about academic or clinical performance.

### **Speech-language pathology assistant**

Students pursuing the Bachelor of Science degree may work towards meeting eligibility requirements for registration in the state of California as a speech-language pathology assistant (SLPA).

## Requirements

Although SLPAs typically receive an associate degree with a specialty in speech-language pathology, students who have completed a bachelor's degree in speech-language pathology or communication sciences and disorders may qualify for the California state-issued SLPA registration after achieving a grade of "P" (pass) in CMSD 267 SLPA Fieldwork (2 units), offered at Loma Linda University.

Students generally make arrangements to register for CMSD 267 in their last undergraduate quarter of study (Spring Quarter of the senior year). Further information about SLPA registration can be obtained on the Web at <[www.speechandhearing.ca.gov](http://www.speechandhearing.ca.gov)>. Select "Applicants," then "SLP Assistants."

Cognates		Units
AHCJ 328	Wholeness Portfolio I	1.0
AHCJ 471	Statistics and Research for Health Professionals I	3.0
AHCJ 472	Statistics and Research for Health Professionals II	3.0
AHCJ 498	Wholeness Portfolio II	1.0
REL_ 4__	Upper Division Religion	2.0
RELR 4__	Upper Division Relational	2.0
RELE 457	Christian Ethics and Health Care (2)	Choose one course 2.0-3.0
RELT 406	Adventist Beliefs and Life (2)	
RELT 423	Loma Linda Perspectives (2)	
RELT 436	Adventist Heritage and Health (2)	
RELT 437	Current Issues in Adventism (2)	
Totals		

Junior Year		Units
AHCJ 305	Infectious Disease and the Health Care Provider    Can be taken Junior or Senior year	1.0
CMSD 217	Beginning Sign Language	3.0
CMSD 284	Introduction to Speech-Language Pathology and Audiology	3.0
CMSD 318	Transcription Phonetics	3.0
CMSD 324	Language Disorders of Children	4.0
CMSD 334	Phonological and Articulation Disorders	4.0
CMSD 376	Anatomy of Speech-Hearing Mechanism	4.0
CMSD 388	Communication across the Lifespan	4.0
CMSD 426	Behavior Management Applications with Special Populations	4.0
CMSD 445	Techniques for ESL and Accent Modification	2.0
CMSD 485	Clinical Methods in Speech-Language Pathology	4.0
CMSD 486	Diagnostic Methods in Speech-Language Pathology	4.0
PSYC 460	The Exceptional Individual	3.0
Totals		43.0

Available electives (may not be taught every year)		Units
AHCJ 311	Medical Terminology	2.0
AHCJ 326	Fundamentals of Health Care	2.0
CMSD 267	Speech-Language Pathology Assistant Fieldwork	2.0
CMSD 377	Bilingualism and Biculturalism I	2.0
Totals		8.0

Senior Year		Units
CMSD 304	Hearing Science	4.0
CMSD 314	Language Analysis for Speech-Language Pathology	4.0
CMSD 417	Acoustic and Physiological Phonetics	3.0
CMSD 424	Adult Language Pathology	4.0
CMSD 434	Disorders of Fluency	2.0
CMSD 435	Voice Disorders	2.0
CMSD 444	Organic Speech Disorders	4.0
CMSD 454	Hearing Problems and Basic Audiometry	4.0
CMSD 464	Hearing Loss and Speech Communication	3.0
CMSD 467	Speech-Language Pathology and Audiology Practicum	1.0
CMSD 477	Bilingualism and Biculturalism II	2.0
CMSD 488	Autism Spectrum Disorders	4.0
		Totals
		37.0
		Overall Totals
		192.0

## COMMUNICATION SCIENCES AND DISORDERS—M.S. (TRANSITIONAL)

The transitional Master of Science degree in communication sciences and disorders is designed for individuals who have a bachelor's degree from an accredited college or university, with a major in a field other than speech-language pathology or communication disorders. Any individual with a bachelor's degree from an accredited institution who meets minimum requirements may apply for admission to the transitional Master of Science degree curriculum. This curriculum permits completion of undergraduate course work (generally completed in one year of full-time study) prior to enrolling in graduate-level courses. Individuals who are admitted to the transitional master's degree curriculum do not need to reapply for admission to the regular master's degree curriculum. Part-time study is not an option.

The transitional master's degree curriculum is three years in length. In the first year of the program, students complete course work that provides the necessary foundation for graduate-level courses. The second and third years include graduate course work and clinical work that prepare students for professional practice.

Upon completion of the transitional Master of Science degree, graduates are eligible for the preliminary speech-language pathology services credential (California Commission on Teacher Credentialing) and the temporary license in speech-language pathology (California Department of Consumer Affairs). Graduates are also prepared to seek employment as clinical fellows, working towards the certificate of clinical competence (through the Council for Clinical Certification of the American Speech-Language-Hearing Association).

### Student learning outcomes

Students who complete the transitional Master of Science degree curriculum will meet the following University outcomes:

1. Understand and apply Loma Linda University's philosophy of wholeness to their personal and professional lives.
2. Understand the importance of integrating Loma Linda University's Christ-centered values into their personal and professional lives.

3. Demonstrate critical thinking.
4. Develop a commitment to discovery and life-long learning.
5. Demonstrate effective oral and written communication skills.
6. Demonstrate effective use of technology appropriate for the degree level and discipline.
7. Understand the importance of embracing and serving a diverse world.
8. Demonstrate the importance of collaborating with others within and across disciplines.

Students will also meet the following program-specific outcomes:

1. Demonstrate knowledge of basic human communication and swallowing processes.
2. Demonstrate knowledge of the nature of speech, language, hearing, and communication disorders and differences and swallowing disorders.
3. Demonstrate knowledge of principles and methods of prevention, assessment, and intervention procedures for people with communication and swallowing disorders.
4. Demonstrate skill in conducting evaluations in each of the following areas/disorders: articulation and phonology; fluency, voice; hearing; swallowing; cognitive-linguistic communication; social aspects of communication; and, communication modalities.
5. Demonstrate skill in conducting intervention with the following areas/disorders: articulation and phonology; fluency, voice; hearing; swallowing; cognitive-linguistic communication; social aspects of communication; and, communication modalities.
6. Demonstrate interaction and personal qualities consistent with the standards of the profession.
7. Demonstrate knowledge of processes used in discipline-related research and the integration of research principles into evidence-based clinical practice.

## Admission

The admissions committee considers the following qualifications in making admission decisions: personal statement, overall G.P.A., last two years' G.P.A., professional potential, personal interviews, and letters of recommendation. Admission decisions fit into one of three categories: regular admission, alternate status, or denial of admission.

**Regular admission.** Admission may be granted to applicants who: (1) submit a literate personal statement that includes a statement of professional motivation and reasons for selecting Loma Linda University; (2) submit three letters (preferably academic) of recommendation; (3) demonstrate professional potential and present well during the interview; (4) have no undergraduate deficiencies; and (5) meet the scholarship requirements for admission to the graduate program, with a minimum G.P.A. of 3.3. Students admitted to the transitional master's degree curriculum must maintain a 3.3 G.P.A. during the first year of study in order to enroll in graduate-level courses.

**Alternate status.** When the class is full or when the application is being held for spring grades, alternate status may be given to applicants who qualify for regular admission.

**Denial of admission.** Admission may be denied for a variety of reasons, including: illiterate personal statement; recommendation letters that cite significant reservations; or low G.P.A. Admission is unlikely if the last two years' G.P.A. is below 3.5.

## Application

Online applications open October 1. Applications close March 1.

The application for the transitional Master of Science degree in the Communication Sciences and Disorders Program is available online at <llu.edu/central/apply>. Official transcripts of all academic records from colleges, universities, and professional or technical schools must be provided. For complete instructions, please go to <llu.edu/central/apply>.

Applications and all supporting information (transcripts, letters of recommendation, etc.) must be submitted by March 1 to be included in the first round of selection. Later applications will be considered only as space is available.

## Degree requirements

Students who have been accepted into the transitional Master of Science degree curriculum are already recognized as academic achievers.

Expectations for these students are high. Candidates for the master's degree are expected to:

1. Meet academic and professional standards of excellence.
2. Exhibit the highest quality of work in the classroom and the clinic, and as a graduate assistant.
3. Demonstrate excellence in follow through, completing all assignments and commitments in the agreed-upon time frame.
4. Show initiative and support for volunteer and extracurricular professional/student organizations.
5. Exhibit interaction and personal qualities consistent with professionalism.

In addition, degree requirements include:

1. A minimum of one quarter in residence as a graduate student.
2. A minimum grade average for graduate work of B (3.0)—with no course grade below C (2.0)—on all work for the master's degree, as well as a minimum G.P.A. of 3.3 in undergraduate course work as a prerequisite to enrollment in graduate course work;
3. A minimum of 47 quarter units of foundational courses-- including: CMSD 514, 515, 520, 521, 522, 529, 531, 533, 536, 537, 538, 539, and 577--completed prior to enrollment in graduate-level course work.
4. A minimum of 54 quarter units of CMSD graduate credit, excluding externship (8 units), directed teaching (8 units), and religion (3 units minimum).
5. Evidence of having completed 400 clock hours of clinical practice, including 25 clock hours of observation (375 clock hours of direct client/patient contact, with 325 of these hours being at the graduate level).
6. Completion of written comprehensive examinations.
7. Completion of the California Basic Education Skills Test (CBEST).
8. Completion of the graduate portfolio.

## California Basic Educational Skills Test (CBEST)

The California Commission on Teacher Credentialing requires that all students pursuing a credential pass the California Basic Education Skills Test (CBEST). The CBEST must be passed before beginning the graduate curriculum, or within the first quarter. The CBEST is a measure of reading, writing, and mathematics proficiency and is required by law for anyone applying for a credential in the public schools

of California and Oregon. This test is given by National Evaluation Systems, Inc., Box 340880, Sacramento, CA 95834-0880, 916/928-4001. Additional information may be found at <www.cbest.nesinc.com>.

### **Clinical practicum**

Students pursuing the transitional Master of Science degree in the Communication Sciences and Disorders Program begin clinical practicum during the Summer Quarter following the first year.

### **Student progress review**

Each student's progress in the graduate curriculum is reviewed quarterly and upon completion of the undergraduate course work. The student must maintain a G.P.A. of 3.3 in the first year to be eligible to enroll in graduate courses. Written feedback is provided, along with recommendations for remediation, if needed.

## **COMMUNICATION SCIENCES AND DISORDERS—M.S.**

The program leading to the Master of Science degree in communication sciences and disorders offers preparation for careers in the professional practice of speech-language pathology, provides a basis for graduate study and research at a more advanced level, and encourages the development of critical thinking and independence. The clinical services of the Department of Communication Sciences and Disorders, Loma Linda University Medical Center, and affiliated practicum sites provide opportunity to obtain breadth of experience in a variety of settings. The program provides opportunity for the graduate:

- to satisfy all academic and clinical requirements for the American Speech Language-Hearing Association's certificate of clinical competence, the California Speech-Language Pathology Services credential, and the California license in speech-language pathology; or
- to prepare for doctoral study or careers in related fields.

The Master of Science degree curriculum in communication sciences and disorders is accredited by the Council on Academic Accreditation (CAA) in Audiology and Speech-Language Pathology (CAA). The curriculum is approved by the California Commission on Teacher Credentialing (CTC) to prepare students for the appropriate California public school credential. The curriculum consists of completing required graduate-level courses, supervised clinical practice, and comprehensive examinations.

Acceptable undergraduate preparation includes a bachelor's degree in speech-language pathology or in communicative disorders. Undergraduate prerequisite course work completed at an institution other than Loma Linda University by applicants who have a bachelor's degree in a field other than speech-language pathology or communication disorders is considered on an individual basis. In general, prerequisite course work completed at California state schools where undergraduate courses in CSD are required is acknowledged. CBEST scores are required prior to admission or within the first quarter of study (see Program of Study below).

### **Student learning outcomes**

Students who graduate with a Master of Science degree in communication sciences and disorders will meet the following University outcomes:

1. Understand and apply Loma Linda University's philosophy of wholeness to their personal and professional lives.

2. Understand the importance of integrating Loma Linda University's Christ-centered values into their personal and professional lives.
3. Demonstrate critical thinking.
4. Develop a commitment to discovery and life-long learning.
5. Demonstrate effective oral and written communication skills.
6. Demonstrate effective use of technology appropriate for the degree level and discipline.
7. Understand the importance of embracing and serving a diverse world.
8. Demonstrate the importance of collaborating with others within and across disciplines.

Students will also meet the following program-specific outcomes:

1. Demonstrate knowledge of basic human communication processes.
2. Demonstrate knowledge of the major types of human communication disorders and swallowing disorders.
3. Demonstrate knowledge of the principles and methods of prevention, assessment, and intervention for people with communication and swallowing disorders.
4. Demonstrate skills in prevention, assessment, and intervention for people with communication and swallowing disorders.
5. Demonstrate knowledge of processes used in research and the integration of research principles into evidence-based clinical practice.
6. Demonstrate skill in using sound scientific principles to conduct research.
7. Demonstrate a commitment to ethical and compassionate service.

## Admission

The admissions committee considers the following qualifications in making admission decisions: personal statement, overall G.P.A., last two years' G.P.A., professional potential, personal interview, and letters of recommendation. Admission decisions fit into one of three categories: regular admission; alternate status; denial of admission.

**Regular admission.** Admission may be granted to applicants who (1) submit a literate personal statement that includes a statement of professional motivation and reasons for selecting Loma Linda University; (2) submit three letters (preferably academic) of recommendation; (3) demonstrate professional potential and present well at the interview; (4) have no undergraduate deficiencies; and (5) meet the scholarship requirements (minimum overall G.P.A. of 3.3).

**Alternate status.** When the class is full or when the application is being held for spring grades, alternate status may be given to applicants who qualify for regular admission.

**Denial of admission.** Admission may be denied for a variety of reasons, including: illiterate personal statement; recommendation letters that cite significant reservations; or low G.P.A.. Admission is unlikely if the major G.P.A. is below 3.5.

## Application

Online applications open October 1. Applications close December 15.

The application for the Master of Science degree in communication sciences and disorders is available online at <llu.edu/central/apply>. Official transcripts of all academic records from colleges, universities, and professional or technical schools must be provided. Complete instructions are available at <llu.edu/central/apply>.

Applications and all supporting information (transcripts, letters of recommendation, etc.) must be submitted by December 15 to be included in the first round of selection. Later applications will be considered only as space is available.

Applications received after December 15 are reviewed in the order received. Typically, the class fills by the December 15 deadline. Qualified late applicants may be placed on the "alternates list."

### **Degree requirements**

Students who have been accepted into the Master of Science degree curriculum in the Communication Sciences and Disorders Program are already recognized as academic achievers.

Expectations for these students are high. Candidates for the master's degree are expected to:

1. Meet academic and professional standards of excellence.
2. Exhibit the highest quality of work in the classroom and the clinic, and as a graduate assistant.
3. Demonstrate excellence in follow through, completing all assignments and commitments in the agreed-upon time frame.
4. Show initiative and support for volunteer and extracurricular professional/student organizations.
5. Exhibit interaction and personal qualities consistent with professionalism.

In addition, degree requirements include:

1. A minimum of one quarter in residence as a graduate student.
2. A minimum grade average for graduate work of B (3.0)—with no course grade below C (2.0)—on all work for the master's degree.
3. A minimum of 72 quarter units of CMSD graduate credit, including externship (8 units), directed teaching (8 units), and religion (3 units minimum).
4. Evidence of having completed 400 clock hours of supervised clinical practice, including 25 clock hours of observation (375 clock hours of direct client/patient contact, with 325 of these hours being completed at the graduate level).
5. Completion of written comprehensive examinations.
6. Completion of the California Basis Education Skills Test (CBEST).
7. Completion of the graduate portfolio.

### **California Basic Educational Skills Test (CBEST)**

The California Commission on Teacher Credentialing requires that all students pursuing a credential pass the CBEST. The CBEST must be passed before beginning the graduate curriculum, or within the first quarter. The CBEST is a measure of reading, writing, and mathematics proficiency and is required by law for anyone applying for a credential in the public schools of California or Oregon. This test is given by National Evaluation Systems, Inc., Box 340880, Sacramento, CA 95834-0880, 916/928-4001. Additional information may be found at <[www.cbest.nesinc.com/](http://www.cbest.nesinc.com/)>.

### **Clinical practicum**

Students pursuing the Master of Science degree in communication sciences and disorders begin clinical practicum during the first quarter of the first year. All students are expected to enroll in clinical practicum each quarter during the first year. Externship and advanced directed teaching are completed during the second year.

## **Comprehensive examinations**

The comprehensive examinations (administered within the department) are a culminating event in the graduate program and are designed to evaluate students' broad-based knowledge across the disorders.

Comprehensive examinations allow students, in essay format, to demonstrate their ability to synthesize and apply what has been learned. Students who have demonstrated satisfactory performance in course work and clinical placements at the end of the first year of graduate study are given approval to take the comprehensive examinations in the second year.

The comprehensive examinations are designed to elicit a broad, integrative sample of the student's knowledge and are not intended to be a test of content for every class. Comprehensive examinations are written in two sections (three hours each). Each section contains questions that require students to integrate information from all the areas of the discipline. All comprehensive examinations are reviewed and discussed by the faculty, as a group.

## **Praxis examination**

The Praxis examination (administered by a national testing service) is designed to evaluate students' broad-based knowledge across the disorders and is required for ASHA certification, for the California license, and for the California school credential. It is a nationally standardized and publicly administered test.

The Praxis may be taken any time during the graduate program; however, ASHA recommends that it be taken during the clinical fellowship experience. A passing score of 600 must be achieved, and the test may be taken multiple times. Information about the Praxis examination may be obtained by going to <ets.org/praxis>. Students in the Master of Science degree curriculum in communication sciences and disorders are required to take the Praxis at the end of their first year.

## **Remediation**

Alumni and graduate students who do not achieve a passing score on the Praxis examination may take any course and/or seminar offered by the department, free of charge, in order to refresh knowledge or remediate areas of concern.

Graduate students who demonstrate unsatisfactory performance in CMSD 588 Directed Teaching or CMSD 597 Externship will be required to repeat the clinical experience and to register for CMSD 589 and/or 599, respectively.

## **Student progress review**

Each student's progress in the Master of Science degree curriculum in communication sciences and disorders is reviewed quarterly. Written feedback is provided, along with recommendations for remediation, if needed.

<b>Transitional year</b>		<b>Trans</b>	
		<b>MS</b>	<b>MS</b>
CMSD 514	Anatomy of Speech-Hearing Mechanism	4.0	
CMSD 515	Transcription Phonetics	3.0	
CMSD 520	Communication Across The Lifespan	4.0	
CMSD 521	Language Disorders of Children	4.0	
CMSD 522	Organic Speech Disorders	4.0	
CMSD 529	Adult Language Pathology	4.0	
CMSD 533	Language Analysis for Speech-Language Pathology	4.0	
CMSD 534	Phonological and Articulation Disorders	4.0	
CMSD 536	Acoustic and Physiological Phonetics	3.0	
CMSD 537	Clinical Methods in Speech-Language Pathology	4.0	
CMSD 538	Diagnostic Methods in Speech-Language Pathology	4.0	
CMSD 539	Hearing Problems and Basic Audiometry	4.0	
CMSD 577	Bilingualism and Biculturalism II	2.0	
Totals		48.0	—

<b>Master's first year</b>		<b>Trans</b>	
		<b>MS</b>	<b>MS</b>
CMSD 511	Graduate Portfolio I	1.0	1.0
CMSD 523	Seminar in Early Childhood Language Disorders	3.0	3.0
CMSD 525	Seminar in School-Aged Child Language Disorders	3.0	3.0
CMSD 554	Swallowing Disorders	3.0	3.0
CMSD 567	Clinical Practice in Speech-Language Pathology    Must register for 1 unit per quarter and Audiology, Advanced	3.0	3.0
CMSD 575	Instrumentation in Speech and Hearing	1.0	1.0
CMSD 584	Seminar in Professional Aspects of Speech-Language Pathology	1.0	1.0
CMSD 598	Research Methods and Professional Literature in Speech-Language Pathology	3.0	3.0
CMSD 679	Seminar: Motor Speech Disorders/Augmentative Communication	3.0	3.0
CMSD 682	Seminar: Traumatic Brain Injury	3.0	3.0
CMSD 684	Seminar: Adult Language Disorders	3.0	3.0
CMSD 685	Seminar: Stuttering	3.0	3.0
CMSD 688	Seminar: Articulation	3.0	3.0
Totals		33.0	33.0

Master's second year		Trans	
		MS	MS
CMSD 512	Graduate Portfolio II	1.0	1.0
CMSD 535	Voice Disorders	3.0	3.0
CMSD 545	Issues in School Speech-Language Pathology	3.0	3.0
CMSD 564	Auditory Rehabilitation and Hearing Aids	3.0	3.0
CMSD 567	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	Only 1 unit allowed per quarter	
CMSD 576	Instrumentation II	1.0	1.0
CMSD 585	Seminar in Professional Aspects of Speech-Language Pathology		3.0
CMSD 587	Counseling in Communication Disorders	3.0	3.0
CMSD 588	Directed Teaching in Speech-Language Pathology	8.0	8.0
CMSD 597	Externship in Speech-Language Pathology	8.0	8.0
CMSD 687	Seminar: Open Seminar (1.0-3.0)	One unit each time seminar is taken; repeatable up to 6 units	
CMSD 697	Research (1.0-4.0)	1.0	1.0
CMSD 699	Directed Study (1.0-3.0)	1.0	1.0-3.0
RELT 557	Theology of Human Suffering	3.0	3.0
		Totals	37.0-43.0
		<b>Overall Totals</b>	<b>120.0</b>
			40.0-48.0

## Cytotechnology – AH

Certificate, B.S.

RODNEY M. ROATH, Chair, Department of Clinical Laboratory Science

MARLENE M. OTA, Program Director

DARRYL G. HEUSTIS, Medical Director

PAMELA J. WAT, Medical Co-Director

### FACULTY

Darryl G. Heustis

Claro Y. Masangcay

Marlene M. Ota

Margaret A. Tavares

Pamela J. Wat

Cytotechnology is a specialty within the broad field of clinical laboratory science. The cytotechnologist, working under the direction of a pathologist, detects cell changes caused by different disease processes and is able to differentiate between normal, atypical, and malignant cell changes. In recognizing microscopic abnormalities of cells and cellular patterns from various body sites, the cytotechnologist assists the pathologist in detecting cancer at its earliest and potentially most curable stage. As a result, physicians are able to diagnose and treat cancer long before discovering its existence by alternate methods.

### OPPORTUNITIES

Cytotechnologists work in hospitals, clinics, and independent pathology laboratories. The employment outlook for cytotechnologists is favorable, with the demand for trained workers exceeding the supply. Cytotechnologists can advance to supervisory positions, participate in research activities, or become teachers in the field. Advancement is based on experience, skill, and advanced education.

### THE PROGRAM

The Cytotechnology Program, based on the completion of two years of study at an accredited college or university, leads either to a certificate or to a certificate and a Bachelor of Science degree. The program of study begins with the Autumn Quarter. A certificate is awarded at the completion of the fourth quarter of study, and those electing to continue are awarded the Bachelor of Science degree upon completion of an additional two quarters of study. With the certificate in cytotechnology and the baccalaureate degree, the student is eligible to take a national examination and become a registered cytotechnologist. Registered cytotechnologists entering the program to receive the Bachelor of Science degree are considered to have completed, on the basis of registry, the equivalent course work listed in the first four quarters of the program. A total of 64 quarter units is applied toward the graduation requirements, provided the course work in pathology is equivalent to that offered in the certificate curriculum at this University. Where credit in pathology is not equivalent, the requirement may be met by taking AHCJ 402, 403 at this University; or by completing a minimum of 8 quarter units of upper division course work in developmental biology or comparative animal physiology at an accredited college or university.

A writing validation examination will be administered to all students. For those students achieving a score of less than 4 on the Wholistic Writing Score Sheet, remedial writing must be taken within the first academic year. Upon retest, the student must achieve a score of 4 or higher.

## **CLINICAL AFFILIATIONS**

Multiple clinical affiliations enrich the student's clinical training by providing exposure to different specimen types in the clinical environment. During the twelve-week clinical practicum, supplemental training may be scheduled at any of the following clinical sites:

### **Primary affiliation**

Loma Linda University Medical Center  
Loma Linda, California

### **Supplementary affiliations**

Loma Linda Pathology Group  
Faculty Medical Offices  
Loma Linda, California

Jerry L. Pettis Memorial Veterans Medical Center  
Loma Linda, California

Physicians Automated Laboratory  
Bakersfield, California

Quest Diagnostics  
Riverside, California

Scripps Memorial Hospital  
La Jolla, California

## **ACCREDITATION**

The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756 in collaboration with the Cytotechnology Programs Review Committee; telephone: 727/210-2350; email: <caahep@caahep.org> or <ascp@cytopathology.org>; or Web site: <cytopathology.org>.

## **PROFESSIONAL REGISTRATION**

Upon completion of the certificate curriculum (fourth quarter of study) and the completion of a baccalaureate degree, the student is eligible to sit for the certifying examination given by the Board of Registry of the American Society for Clinical Pathology (ASCP), 33 West Monroe, Suite 1600, Chicago, IL 60603; telephone: 312/541-4999; FAX: 312/541-4998. Information about qualifying examinations can be obtained at the office of the department chair.

## DEPARTMENT GOALS

1. To provide opportunity, instruction, and guided experience by which the student may acquire the basic knowledge and develop the skills essential to the practice of a chosen profession.
2. To help the student accept responsibility for integrity, ethical relationships, and empathic attitudes that can contribute to the welfare and well-being of patients.
3. To help the student develop a background of information and attitudes conducive to interprofessional understanding and cooperation.
4. To encourage the student to cultivate habits of self-education that will foster lifelong growth.
5. To engender and nurture in the student the desire to serve mankind, and in particular, to serve as needed in the medical centers sponsored by the Seventh-day Adventist Church both in the United States and abroad.

## STUDENT LEARNING OUTCOMES

1. Evaluate cellular abnormalities with a level of accuracy by applying a differential diagnosis in the framework of patient outcome management.
2. Demonstrate knowledge of the ethical role and responsibilities of the cytotechnologist.
3. Assess the results of quality assurance measures and institute proper procedures to maintain accuracy.
4. Understand and apply sound principles of scientific research.
5. Advocate rules and regulations, with emphasis on patient and workplace safety.

## PROGRAM OBJECTIVES

The primary objectives of cytologic education are to prepare individuals to perform with competency in the following areas:

1. Use the microscope to identify, evaluate, and diagnose with a high level of accuracy the cytologic nature of any pathological process present.
2. Recognize the significance of symptoms, treatments, and/or pertinent clinical data that can be used in the evaluation of cellular morphology and the development of the differential diagnosis.
3. Follow laboratory procedures for preparation, acceptance and rejection of specimens, problem solving, and implementation of new procedures.
4. Read, evaluate, prepare, and present scientific research.
5. Implement measures that contribute to quality control of specimens, laboratory safety and regulation, and the practical aspects of laboratory organization and management.
6. Understand the responsibilities and ethical role of the profession.

Upon completion of the program, the graduate should be qualified to:

1. Determine and implement the appropriate procedures for collecting and processing biological specimens for cytologic analysis.
2. Detect, differentiate between, and diagnose presence and absence of disease in gynecologic and nongynecologic samples.
3. Follow laboratory procedures for preparation, acceptance and rejection of specimens, problem solving, and implementation of new procedures.

4. Use contemporary and uniform diagnostic terminology in reporting laboratory results.
5. Judge the results of quality assurance measures and institute proper procedures to maintain accuracy and precision.
6. Evaluate current and new techniques, instruments, and procedures in terms of their clinical and diagnostic usefulness and practicality.
7. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and the public.
8. Recognize, encourage, and act upon the individual's need for continuing education as a function of growth and maintenance of professional competence.
9. Apply sound principles of management and supervision.
10. Understand and apply sound principles of scientific research.

## ADMISSION

Please note: Grades of C- are not transferable for credit.

### Prerequisite for Cytotechnology, Certificate

Baccalaureate degree from an accredited college/university  
 General biology, complete sequence  
 Human anatomy and physiology, complete sequence  
 Microbiology with laboratory  
 General chemistry with laboratory, complete sequence  
 College algebra  
 English composition, complete sequence

### Prerequisite for Cytotechnology, B.S.

Humanities--20 units minimum (choose minimum of two areas from:

history, literature, philosophy, foreign language, art / music appreciation / history)

Included in the 20-unit minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

General biology, complete sequence  
 Human anatomy and physiology, complete sequence  
 Microbiology with laboratory  
 General chemistry with laboratory, complete sequence  
 College algebra  
 Cultural anthropology or an approved course dealing with cultural diversity  
 Select 8 units from a minimum of two areas:  
 Sociology, economics, geography, political science, psychology, anthropology  
 English composition, complete sequence (minimum of 9 quarter units)  
 Personal health or nutrition  
 Two physical activity courses  
 Electives to meet the minimum total requirement of 98 quarter units  
 For total unit requirements for graduation, see Section II, Division of General Studies.

## HOW TO APPLY

Prospective students should apply as soon (after January 1) as possible for the next academic year. The certificate curriculum begins in August and the B.S. degree curriculum begins in September. Preference will be given to applicants whose applications and completed transcripts are received by March 1.

It is suggested that applicants take a minimum of two years of mathematics and natural sciences (excluding general science) during the high school years. A high school diploma or the GED is required for acceptance.

## ENGLISH REQUIREMENTS

If English is not the applicant's native language, an undergraduate must submit a minimum score of 550 for the Test of English as a Foreign Language (TOEFL) or a minimum score of 90 percent on the Michigan Test of English Language Proficiency (MTELP) or the equivalent. Minimum scores of 5 both on the TOEFL writing test and the speaking test (TWE and TSE-A) are required for acceptance (see Section II, International Students).

## ACADEMIC PROGRESSION

A minimum grade of C (2.0) is required for all courses in the program. A grade of less than C in any course, or unsatisfactory clinical performance, will be cause for dismissal from the program for the remaining academic year. Readmission to the program will require reapplication.

<b>Junior Year, Post-Summer Session</b>		<b>Cert</b>	<b>BS</b>
CLSC 341	Female Genital Cytology	6.0	6.0
Totals		6.0	6.0

<b>Autumn Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 328	Wholeness Portfolio I	1.0	1.0
CLSC 341	Female Genital Cytology	6.0	6.0
CLSC 351	Respiratory Cytology	6.0	6.0
RELT 423	Loma Linda Perspectives	2.0	2.0
Totals		15.0	15.0

<b>Winter Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 402	Pathology I	4.0	4.0
CLSC 351	Respiratory Cytology	1.0	1.0
CLSC 353	Urinary Tract and Prostate Cytology	3.0	3.0
CLSC 357	Gastrointestinal Tract Cytology	2.0	2.0
CLSC 361	Body Cavity and Miscellaneous Secretions Cytology	3.0	5.0
CLSC 371	Cytopreparation Techniques	1.0	1.0
RELE 457	Christian Ethics and Health Care	2.0	2.0
Totals		16.0	18.0

<b>Spring Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 403	Pathology II	4.0	4.0
CLSC 361	Body Cavity and Miscellaneous Secretions Cytology	5.0	3.0
CLSC 363	Bone Biopsy Cytology	1.0	1.0
CLSC 365	Breast Cytology	1.0	1.0
CLSC 367	Cytogenetics	1.0	1.0
CLSC 371	Cytopreparation Techniques	2.0	2.0
CLSC 373	Histotechnology Techniques	1.0	1.0
CLSC 481	Supervised Cytology Research Project	2.0	2.0
CLSC 491	Cytology Affiliation I	2.0	2.0
Totals		19.0	17.0

<b>Summer Quarter</b>		<b>Cert</b>	<b>BS</b>
CLSC 481	Supervised Cytology Research Project	2.0	2.0
CLSC 491	Cytology Affiliation I	4.0	4.0
CLSC 492	Cytology Affiliation II	6.0	6.0
REL_ 4__	Upper Division Religion		2.0
Totals		12.0	14.0

<b>Senior Year, Autumn Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 331	Human Resource Management		3.0
AHCJ 498	Wholeness Portfolio II		1.0
CLSC 301	Introduction to Radiographic Procedures I		2.0
CLSC 404	General Histology		5.0
CLSC 424	Hematology		3.0
CLSC 431	Advanced Specialties		3.0
CLSC 483	Supervised Hematology Research Project		2.0
Totals		—	19.0

<b>Winter Quarter</b>		<b>Cert</b>	<b>BS</b>
CLSC 302	Introduction to Radiographic Procedures II		2.0
CLSC 405	Pathology		5.0
CLSC 432	Current Research Techniques		3.0
REL_ 4__	Upper Division Religion		2.0
Totals		—	12.0
<b>Overall Totals</b>		<b>68.0</b>	<b>101.0</b>

A microscope rental fee and a usage-and-replacement fee are required for the Autumn, Winter, Spring, and Summer quarters.

Summer Quarter is the best time to take the religion units; 8 units of religion are required for the B.S. degree.

# Diagnostic Medical Sonography – AH

## Certificate

GLENN A. ROUSE, Medical Director  
MARIE M. DELANGE, Program Director  
SHELIA WILSON, Clinical Coordinator  
RUDY CHAI, Associate Clinical Coordinator

### FACULTY

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Diana Papa  
Marvyn Peralta  
Glenn A. Rouse  
Sharon Seltzer  
Curtis Serikaku

The diagnostic ultrasound profession is a multispecialty field comprised of diagnostic medical sonography (DMS)—with subspecialties in abdominal, neurologic, obstetric/gynecologic, breast, and ophthalmic ultrasound. Diagnostic cardiac sonography (DCS) includes subspecialties in adult, pediatric, and fetal echocardiography and vascular technology (VT); and other emerging fields. These diverse specialties are distinguished by their use of diagnostic medical ultrasound as the primary technology in their daily practice. The diagnostic ultrasound professional is an individual qualified via clinical experience and credentialing. Diagnostic ultrasound professionals perform patient assessments and acquire and analyze data obtained using ultrasound-related diagnostic technologies. The sonographer provides a summary of findings to the physician to aid in patient diagnosis and management, and uses independent judgment and systematic problem-solving methods to produce quality diagnostic information.

## PROGRAM OUTCOMES

Upon completion of the medical sonography program, the graduate should be qualified to:

1. Demonstrate the knowledge and skill needed to qualify for employment in ultrasound at a hospital or clinic.
2. Demonstrate leadership and critical thinking.
3. Conduct him-/herself in a professional manner in all interactions.
4. Comply with the current standards and practices set by the governing bodies and professional organizations.
5. Apply advanced practice in ultrasonography.

## TRACK 1 (GENERAL RDMS AND RVT)

Track 1 is a twenty-four-month curriculum leading to eligibility to take the RVT (registred vascular technology) and RDMS (registered diagnostic medical sonography) examinations. General RDMS sonographers perform examinations of the internal organs—such as the liver, kidneys, uterus, and thyroid. They also assist in diagnosis of abnormal/normal conditions in children and pregnant women. Vascular sonographers perform a variety of noninvasive examinations of the arteries and veins, such as assessing blood flow, valve competence, and presence of clots.

## TRACK 2 (CARDIAC RDCS)

Track 2 is a twelve-month curriculum leading to proficiency in diagnostic imaging of cardiac function and disease processes. Graduates are eligible to take RDCS examinations.

## ACCREDITATION

The LLU medical sonography curricula in both general sonography and echocardiography have been accredited since 1983 by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the Joint Review Committee on Education in Diagnostic Medical Sonography.

## PROFESSIONAL CREDENTIALING

Upon completion of the certificate requirements, the student is eligible to sit for the national examination board of the American Registry of Diagnostic Medical Sonographers.

## ADMISSION

The applicant *must fulfill one of the following four requirements:*

Be an ARRT-registered radiologic technologist;

**or**

Be a graduate from an accredited allied health program, including nursing (two years minimum training), licensed vocational nurse, or registered nurse;

**or**

Hold any associate degree;

**or**

Hold any baccalaureate degree;

**AND must have completed credits in the following:\***

Human anatomy and physiology with laboratory, complete 2 semester sequence within the past five years

College algebra, within the past five years

Medical terminology

Patient-care methods (can be completed after being accepted into the program)

Introduction to physics (within the past five years)

EKG class (cardiac student)

\* Specific course requirements must be completed at an accredited college or university.

## CPR CERTIFICATION

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experiences. CPR certification must be

completed at the American Heart Association health care provider level. Certification may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

Required		1-Yr	2-Yr Cert
		Cardiac RDCS	RDMS, RVT
EMMC 315	Cardiology	3.0	
RELT 423	Loma Linda Perspectives	2.0	2.0
RTMS 339	Echocardiography I	4.0	
RTMS 344	Introduction to Medical Sonography		5.0
RTMS 345	Ob-Gyn Sonography		5.0
RTMS 346	Vascular Technology/Doppler/Scan Techniques		5.0
RTMS 347	Echocardiography II	4.0	
RTMS 348	Abdomen/Neurosonography		5.0
RTMS 379	Ultrasound Physics and Instrumentation I	2.0	2.0
RTMS 381	Topics in Medical Sonography I		1.0
RTMS 382	Topics in Medical Sonography II		1.0
RTMS 383	Topics in Medical Sonography III		1.0
RTMS 384	Topics in Medical Sonography IV		1.0
RTMS 385	Topics in Medical Sonography V	2.0	
RTMS 387	Ultrasound Physics and Instrumentation II	1.0	1.0
RTMS 965	Cardiac Ultrasound Clinical Affiliation	12.0	
RTMS 966	Cardiac Ultrasound Clinical Affiliation	11.0	
RTMS 967	Cardiac Ultrasound Clinical Affiliation	11.0	
RTMS 968	Cardiac Ultrasound Clinical Affiliation	12.0	
RTMS 971	Medical Sonography Clinical Affiliation		11.0
RTMS 972	Medical Sonography Clinical Affiliation		11.0
RTMS 973	Medical Sonography Clinical Affiliation		11.0
RTMS 974	Medical Sonography Clinical Affiliation		11.0
RTMS 975	Medical Sonography Clinical Affiliation		12.0
RTMS 976	Medical Sonography Clinical Affiliation		11.0
RTMS 977	Medical Sonography Clinical Affiliation		11.0
RTMS 978	Medical Sonography Clinical Affiliation		11.0
Totals		64.0	118.0
<b>Overall Totals</b>		<b>64.0</b>	<b>118.0</b>

Track 1: Third credential (RDCS) requires additional nine months in the program.

Track 2: RVT or RDMS credential requires one additional year.

## Emergency Medical Care—AH

B.S.

Ehren Ngo, Program Director

### FACULTY

Allen Bedashi

Noha Daher

James Goss

David Lopez

Ehren Ngo

Lindsey Simpson

Grenith Zimmerman

### CLINICAL ADJUNCT FACULTY

Robbi Dunn

Jim Holbrook

Michael Homeyer

Traci Marin

Michael Osur

### ADVISORY COMMITTEE

Gail Dodge

Robbi Dunn

Mark Hartwig

Jim Holbrook

Craig Jackson\*

David Lopez

Traci Marin

Ehren Ngo

Michael Osur

\* ex officio

The two-year, upper division program leading to the Bachelor of Science degree is a sequence of professional course work intended to prepare emergency medical care (EMC) providers for leadership positions in education, management, or advanced clinical practice. Course work may be applied toward meeting entrance requirements for dentistry, medicine, and other graduate programs.

Those electing to study on a part-time basis must complete the junior and senior years within a four-year period. Students new to the profession should be employed a minimum of sixteen hours per week in an emergency medical care-related position in order to gain the most from the program.

## PROGRAM OUTCOMES

In addition to the stated institutional learning outcomes, the emergency medical care student is expected to meet the following program learning outcomes:

1. Exhibit advanced leadership skills.
2. Demonstrate the ability to apply management concepts and theory to decision making, process management, and emergency medical care administration.
3. Demonstrate an understanding and apply theory of knowledge acquisition and learning theory.
4. Employ an understanding of the role and application of science and research in the practice of emergency medical care.
5. Demonstrate advanced knowledge of emergency medical care practice and delivery.

To be eligible for the junior year of the Emergency Medical Care (EMC) Program, the applicant must:

- Be an EMT or a paramedic, a registered nurse/MICN, or a respiratory therapist.
- Complete the subject requirements listed as prerequisites.
- Arrange for an interview at the University by appointment.
- Satisfactorily complete a writing and mathematics sample.

### Prerequisite/Corequisite (general program track)

Humanities—20 units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language, art/music appreciation/history)

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

Human anatomy or physiology, with laboratory

Microbiology with laboratory

\*Chemistry one quarter/semester, with laboratory

\*Introductory physics, one quarter/semester\*\*

\*College algebra\*\*

\*General psychology

\*Cultural anthropology or an approved course dealing with cultural diversity

Select 4 more quarter units from sociology, economics, geography, political science, psychology

\*English composition, complete sequence

Personal health or nutrition

Two physical activity courses

In addition to course work listed above, electives to meet 116 quarter units

\* Denotes EMC B.S. degree program prerequisites

\*\* Requirement may be waived based on review of previous course work completed

### Prerequisite/Corequisite (prephysician assistant track)

Humanities—20 units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language [Spanish language recommended], art/music appreciation/history)

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

\*Human anatomy with laboratory

\*Human physiology with laboratory

Genetics course, recommended

Microbiology with laboratory

\*General chemistry with laboratory, complete sequence

\*Introductory physics with laboratory or general physics

\*College algebra

\*General psychology

\*Cultural anthropology or an approved course dealing with cultural diversity

General or introductory sociology

\*Freshman English, complete sequence

\*Personal health or nutrition

Two physical activity courses

\*In addition to course work listed above, electives to meet 96 quarter units

\* Denotes EMC B.S. degree program prerequisites

### **Prerequisite/Corequisite (premedicine track)**

Humanities—20 units (choose minimum of three areas from: history, literature, philosophy, foreign language [Spanish language recommended], art/music appreciation/history)

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

\*General biology/zoology with laboratory, complete sequence

\*General chemistry with laboratory, complete sequence

\*General physics with laboratory, complete sequence

Organic chemistry with laboratory, complete sequence

Biochemistry, recommended

Microbiology with laboratory

\*College algebra (calculus recommended)

\*General psychology

\*Cultural anthropology or an approved course dealing with cultural diversity

Select 4 more quarter units from sociology, economics, geography, political science, anthropology, psychology

\*Freshman English, complete sequence

\*Personal health or nutrition

Two physical activity courses

In addition to course work listed above, electives to meet 96 quarter units

\* Denotes EMC B.S. degree program prerequisites

Note: A maximum of 105 quarter units or 70 semester units from a junior/community college may be transferred for credit.

Additionally, C- grades and below are not transferable for credit.

## **GENERAL EDUCATION REQUIREMENTS**

For total unit requirements for graduation, see Section II, Division of General Studies.

## **COMPUTER REQUIREMENT**

The Emergency Medical Care (EMC) Program faculty uses distance education technology to facilitate teaching of course work. This technology requires that all prospective students applying for admission to the program have access to a computer with Internet capabilities by the time they actually begin the

program. The program and its faculty will not be responsible for course work not completed due to inability to access a computer. Computer hardware specifications may be obtained from the Cardiopulmonary Sciences Department secretary.

## CPR CERTIFICATION

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health care provider level. Certification may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

Junior Year		Units
AHCJ 305	Infectious Disease and the Health Care Provider	1.0
AHCJ 328	Wholeness Portfolio I	1.0
AHCJ 402	Pathology I	4.0
AHCJ 403	Pathology II	3.0
EMMC 308	Pharmacology	3.0
EMMC 314	ECG Interpretation and Analysis	2.0
EMMC 315	Cardiology	3.0
EMMC 316	12-Lead ECG Interpretation	2.0
EMMC 325	Current Issues in Emergency Medical Care	2.0
EMMC 331	Theories of Emergency Medical Services I	3.0
EMMC 332	Theories of Emergency Medical Services II      This is a 3 unit course.	2.0
EMMC 389	Junior Seminars	1.0
EMMC 425	Instruction and Curriculum Design in Emergency Services	3.0
EMMC 451	Health Care Management for Prehospital Providers	2.0
EMMC 484	Legal Issues in Health Care	2.0
RELE 457	Christian Ethics and Health Care	3.0
RELT 423	Loma Linda Perspectives	3.0
Totals		40.0

Senior Year		Units
AHCJ 324	Psychosocial Models and Interventions	2.0
AHCJ 471	Statistics and Research for Health Professionals I	3.0
AHCJ 472	Statistics and Research for Health Professionals II	3.0
AHCJ 498	Wholeness Portfolio II	1.0
EMMC 435	Disasters, WMD, and Terrorism	3.0
EMMC 436	Trauma and Surgical Care	2.0
EMMC 445	Perinatal and Pediatric Care	3.0
EMMC 446	Physical Diagnosis	2.0
EMMC 447	Geriatrics and Aging	3.0
EMMC 448	Advanced Physical Diagnosis and Critical Care      This is a 3 unit course	2.0
EMMC 452	Seminars in EMS Management I	2.0
EMMC 453	Seminars in EMS Management II	2.0
EMMC 464	Ethics and Leadership in Emergency Services	2.0

EMMC 471	Senior Project I	2.0
EMMC 472	Senior Project II	2.0
EMMC 489	Senior Seminars	1.0
	Totals	35.0
	<b>Overall Totals</b>	<b>75.0</b>

## Health Care Administration – AH

B.S.

KARLA LAVIN WILLIAMS, Program Director

### FACULTY

S. Eric Anderson

Dora Barilla

Laura Evans

David L. Holt

Brad A. Jamison

Dave Lawrence

Susan Onuma

Carlos Prieto

Timothy Seavey

Karla Lavin Williams

Grenith Zimmerman

The Health Care Administration Program leading to the B.S. degree prepares individuals to serve in midlevel administration. Settings include assisted living and skilled nursing facilities; rehabilitation centers; private, public, and proprietary clinics; and medical centers.

Graduates will be skilled in assessment, strategic and marketing plans development, personnel management, budget development and management, health care law, and operations management.

### PROGRAM OUTCOMES

Upon completion of the B.S. degree, the graduate should be able to demonstrate the following competencies:

1. Apply health care management concepts and theory to decision making, operations management, information systems, economics, and health care administration.
2. Apply advanced skills in communicating with public, staff, and constituencies.
3. Apply health care law to policy and procedure development.
4. Demonstrate advanced knowledge and skill in managing human resources and providing effective resolution strategies.

### REQUIRED GENERAL EDUCATION COURSES

#### Domain 1: Religion and Humanities (28-32 quarter units)

Religion: The study of religion must include an average of 4 units of religion course work for every 48 quarter units earned while attending a Seventh-day Adventist college or university.

Humanities: Minimum of 12 units chosen from at least three of the following areas: civilization/history, fine arts, literature, modern language, performing/visual arts (not to exceed 4 quarter units), or philosophy.

## Domain 2: Scientific Inquiry and Analysis (24-32 quarter units)

Natural Sciences: Minimum of 12 units chosen from two of the following content areas: biology, chemistry, geology, mathematics, physics, and statistics.

Social Sciences: Minimum of 12 units. One course (or components integrated into several courses) dealing specifically with issues of human diversity is required. The remaining units in the social sciences must be selected from the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.

## Domain 3: Communications (9-13 quarter units)

English composition, complete sequence, must meet the baccalaureate degree requirements of a four-year college or university.

Communication electives may include courses in computer information systems, critical thinking, and public speaking.

## Domain 4: Health and Wellness (2-6 quarter units)

Personal health or nutrition

Two separate physical activity courses

## Electives

Electives from any of the four domains may be selected to complete the general education minimum requirements of 68 quarter units and the total units required for a baccalaureate degree (192).

Major		Units
AHCJ 475	Health Care Research and Statistics	4.0
AHCJ 493	Senior Portfolio I	3.0
AHCJ 494	Senior Portfolio II	—
HCAD 305	Health Care Communication	4.0
HCAD 316	Economics for Health Care Managers	4.0
HCAD 328	Health Care Organizational Behavior	3.0
HCAD 336	Legal Environment of Health Care	4.0
HCAD 359	Health Care Marketing	3.0
HCAD 374	Health Care Human Resources	4.0
HCAD 375	Health Care Information Systems	3.0
HCAD 401	Health Care Operations Management	4.0
HCAD 409	Principles of Health Care Administration	3.0
HCAD 446	Accounting for Health Care Managers	4.0
HCAD 464	Health Care Finance	4.0
HCAD 498	Health Care Policy and Strategy	4.0
Totals		51.0

<b>Religion</b>		<b>Units</b>
RELE 4__	Upper Division Ethics	2.0
RELR 4__	Upper Division Relational	2.0
RELT 406	Adventist Beliefs and Life (2)	Choose one course 2.0-3.0
RELT 423	Loma Linda Perspectives (2)	
RELT 436	Adventist Heritage and Health (2)	
RELT 437	Current Issues in Adventism (2)	
Totals		6.0-7.0
<b>Overall Totals</b>		<b>57.0-58.0</b>

## Health Information Administration—AH

Certificate (executive, postbaccalaureate), B.S. (HIT progression, traditional)

MARILYN H. DAVIDIAN, Program Director

PAULINE CALLA, Clinical Coordinator, Recruitment Coordinator

DEBRA L. HAMADA, Program Director, Executive Certificate Program

### FACULTY

Pauline Calla

Jere E. Chrispens

Deborah Critchfield

Noha S. Daher

Marilyn H. Davidian

Intithar S. Elias

Jennifer L. Guerrero

Debra L. Hamada

Diana S. Medal

Linda M. Palmer

Dulce L. Peña

Terri L. Rouse

Michael Scofield

Audrey J. Shaffer

Brenda Taylor

Douglas F. Welebir

### ADVISORY COMMITTEE

Eric Anderson

Felicia Chao

Deborah Critchfield

Sue Dowis-Chair

Cynthia Doyon

Cynthia Giltner

Craig Jackson\*

Margaret Jackson

Arthur Kroetz

Kristin Krug-Schmidt

Beena Nair

Barbara Pinkowitz

Brenda Taylor

\* ex officio

Health care records are part of an integrated system of health information. The data provide a basis for patient care, quality assurance, legal defense, reimbursement, risk management, accreditation, planning, and decision making.

Health information management has assumed increased importance with the advent of prospective payment, health care privacy legislation, corporate compliance, and the electronic health record. A career in health information management is likely to appeal to a person who has organizational and leadership abilities and who is interested in and has aptitude for medical science, but whose talents are suited for participation other than physical involvement in human illness.

The health information administrator (formerly known as medical record administrator) designs, develops, and maintains systems for storage, retrieval, and dissemination of information in accordance with federal, state, and local statutes and regulations. This person works with the medical staff and other health professionals in research, administrative studies, functions relative to health information, and patient-care evaluation. The health information administrator in a health care facility will provide management leadership in planning and organizing the department, motivating and evaluating employees, and providing in-service programs for departmental employees or other personnel in the facility. In addition, strategic planning involvement for health information systems is an important function.

## **OPPORTUNITIES**

While many health information administrators are employed in various areas of acute care facilities, others work in alternative delivery health care systems, research facilities, quality assurance, software development companies, industrial establishments, government agencies, medical departments of insurance companies, accounting firms, or as consultants to skilled nursing and other facilities.

The multiplicity of new technologies, the advent of electronic health records, the demand for health information, the emphasis on evaluation of care, the surge in research, the emphasis on cost control, and other factors combine to require comprehensive knowledge and increased utilization of administrative talent and judgment.

## **ACCREDITATION**

The Health Information Administration Program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), 233 North Michigan Avenue, Suite 2150, Chicago, IL 60601-5519

## **STUDENT LEARNING OUTCOMES**

Upon completion of the program, the graduate will be qualified to:

1. Advocate effectively for health care privacy and confidentiality.
2. Sit for the registered health information administration (RHIA) credentialing examination based on mastery of the health information management curriculum.
3. Perform assessment and management of the information needs for a variety of health care settings.
4. Design, select, and implement health care information systems.
5. Understand the principles of effective personnel management.
6. Understand financial management requirements for institutions and their relationship to clinical data.

## **HEALTH INFORMATION ADMINISTRATION—CERTIFICATE (EXECUTIVE)**

The management of health care records provides a basis for patient care, quality improvement, legal defense, reimbursement, risk management, accreditation, planning, and decision making.

Health information management has assumed increased importance with passage of the American Recovery and Reinvestment Act of 2009 and the emphasis on electronic health records, health care privacy, and quality patient care. The executive certificate curriculum is designed for the person who has management experience in a field related to health information management, such as information technology, information systems, computer science, business administration, and health management.

The health information manager designs, develops, and maintains systems for storage, retrieval, and dissemination of information in accordance with federal, state, and local statutes and regulations. The experienced health information manager takes an active role in strategic planning with health administrators for enterprise health information systems and their implementation.

## **Opportunities**

Health information managers are employed in a wide variety of health settings, including acute care, outpatient care, long-term care, research facilities, software development companies, government agencies, rehabilitation facilities, consulting firms, and others. There is a high demand for health information managers with professional experience.

## **Credentialing examination**

Graduates are eligible to sit for the registered health information administrator (RHIA) credentialing examination offered by the American Health Information Management Association.

## **Student learning outcomes**

Upon completion of the program, the graduate will be qualified to:

1. Understand and apply the laws of patient-record confidentiality, privacy, and compliance.
2. Demonstrate knowledge of health information technology and systems.
3. Demonstrate and apply knowledge of the principles of personnel management.
4. Develop a financial plan for a health information management department.
5. Demonstrate mastery of the principles of health information management.
6. Demonstrate mastery of the health information management curriculum.

## **Admission**

To be eligible for admission, the applicant must have completed a baccalaureate degree in a field related to health information management, such as business administration, health administration, computer science, information systems, or a health field. In addition, a minimum of five years of management experience is required. Management experience must reflect engagement of all basic management functions: planning, organizing, leading, and controlling. Resources being managed need not be exclusively manpower; project management is acceptable. A minimum G.P.A. of 2.5 is required. Applicants must complete the online application; and submit official transcripts, a current resume, and three letters of recommendation. Telephone or technology-mediated interviews will be conducted as part of the admission process.

Eligible baccalaureate degrees requiring no additional preadmission requirements include baccalaureate degrees issued by regionally accredited schools of allied health professions, medicine, dentistry, nursing, public health, or other equivalent colleges and universities dedicated to educating the health care work force.

Non-health care baccalaureate degrees, such as degrees in general business management and human resource management, lack the preprogram volunteer experience. Applicants whose degrees fall into this

category will be required to complete 120 hours of volunteer work under the direction of credentialed health information professionals. The objectives of the volunteer experience will be equivalent to the objectives of the senior internship in the traditional baccalaureate program in health information administration. Volunteer sites will be arranged and approved by the program director.

<b>Required</b>		Units
AHCJ 325	U. S. Health Care Delivery System	2.0
HLCS 238	Essentials of Human Diseases	3.0
HLEC 411	Health Record Management	3.0
HLEC 412	Management and Leadership in Health Information Management	3.0
HLEC 423	Clinical Coding and Classification Systems	3.0
HLEC 434	Health Systems Management for Executives	4.0
HLEC 444	Seminar in Health Information Management`	3.0
HLIN 407	Financial Management for Health Information Management	2.0
HLIN 441	Legal Aspects of Health Information Administration I	4.0
HLIN 444	Corporate Compliance in Health Care	3.0
HLIN 451	Quality Improvement in Health Care	3.0
HLIN 475	Research Methods in Health Information Management	3.0
HLIN 483	Long-Term and Alternative Delivery Systems in Health Care	4.0
RELE 457	Christian Ethics and Health Care	2.0
Totals		42.0
<b>Overall Totals</b>		<b>42.0</b>

A Loma Linda University G.P.A. of 2.5 must be maintained throughout the program.

A minimum grade of C (2.0) is required for all courses in the program.

## **HEALTH INFORMATION ADMINISTRATION – CERTIFICATE (POSTBACCALAUREATE)**

### **Admission**

To be eligible for admission, the applicant must have a bachelor's degree from an accredited college or university.

### **Prerequisite**

Human anatomy and physiology with laboratory, complete sequence—concurrent with first quarter

Medical terminology

College algebra (intermediate algebra acceptable)

General psychology

Accounting

Introduction to computer applications (must include word processing)

Personnel management

Business communications

### **Recommended**

Speech

**Credit by examination or evaluation**

Applicants who have comparable education or experience may be able to gain credit toward the certificate by equivalency examination or evaluation of credit on an individual basis.

**Professional registration**

Upon completion of the curriculum, and upon recommendation of the faculty, graduates are eligible to write the qualifying examination of the American Health Information Management Association (AHIMA), 233 North Michigan Avenue, Suite 2150, Chicago, IL 60611-5519, for the designation of RHIA (registered health information administrator).

**HEALTH INFORMATION ADMINISTRATION—B.S.**

The Health Information Administration Program, leading to the Bachelor of Science degree, begins with the Autumn Quarter. The freshman and sophomore years, which are taken at an accredited college or university, afford the fundamentals of a liberal education and provide background in science, humanities, social studies, and business. Concentration on health information administration subject matter begins at Loma Linda University in the junior year and continues through the senior year.

Students are advised to complete the curriculum in two years as scheduled. Those electing to study on a part-time basis because of a heavy work load or other reasons must complete all course work within a four-year period.

**Clinical experience**

Three complementary types of clinical experience are offered. The first is a variety of assignments in large and small hospitals and other facilities that will acquaint the student with managing information in all aspects of the health care environment. The majority of these assignments are either at Loma Linda University Medical Center or at hospitals located in southern California.

The second type of clinical experience is a three-week internship at the end of the junior year. The internship is not required of graduates of an accredited health information technology program. The third assignment is a three-week affiliation during the Spring Quarter of the senior year. Arrangements for the internship and affiliation sites are made through the department chair and the clinical coordinator. Students are responsible for their own transportation to those facilities not within walking distance of the University, as well as for food and lodging during assignments at distant sites.

**Professional registration**

Upon completion of the program, and on the recommendation of the faculty, graduates are eligible to write the qualifying examination of the American Health Information Management Association for the designation of RHIA (registered health information administrator).

**Professional association**

Students and graduates are eligible to become members of the American Health Information Management Association and the California Health Information Association. The purpose of these associations is to promote the art and science of health information management. They grant student membership at a nominal cost to undergraduates of approved schools. The student is expected to become a member of these associations, pay the nominal dues, read the journals, and become familiar with the professional activities.

## Admission

To be eligible for admission to the B.S. degree curriculum in health information administration, the applicant must have completed a minimum of 96 quarter units at an accredited college or university.

### Domain 1: Religion and Humanities (20 quarter units)

Humanities—Choose minimum of three areas from: history, literature, modern language, philosophy, and art/music appreciation.

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university.

### Domain 2: Scientific Inquiry and Analysis (24-32 quarter units)

Natural sciences (12 units minimum)

Human anatomy and physiology with laboratory, complete sequence

Choose remaining units from: chemistry, geology, mathematics, astronomy, physics, statistics.

Social sciences (12 units minimum)

Cultural anthropology or an approved course dealing with cultural diversity

General psychology

Choose 2 additional courses from: sociology, economics, geography, political science

### Domain 3: Communications (9-13 quarter units)

English composition, complete sequence

Introduction to computers (must include word processing)

### Domain 4: Health and Wellness (2-6 quarter units)

Personal health or nutrition

Two physical activity courses

### Other

Introductory accounting (one quarter or semester)

Electives to meet the minimum total requirement of 96 quarter units.

For total unit requirements for graduation, see Division of General Studies, Section II of this CATALOG.

Junior Year		PB Cert	BS
AHCJ 214	Fundamentals of Computer Systems	2.0	2.0
AHCJ 305	Infectious Disease and the Health Care Provider	1.0	1.0
AHCJ 325	U. S. Health Care Delivery System	2.0	2.0
AHCJ 328	Wholeness Portfolio I		1.0
AHCJ 331	Human Resource Management		3.0
AHCJ 351	Statistics for the Health Professions		3.0
AHCJ 402	Pathology I	4.0	4.0
AHCJ 403	Pathology II	3.0	3.0
HLIN 301	Introduction to Health Records Management	4.0	4.0
HLIN 303	Basic Coding Principles and Techniques I	3.0	3.0
HLIN 304	Basic Coding Principles and Techniques II	3.0	3.0
HLIN 305	Health Care Statistical Applications	3.0	3.0

HLIN 325	Pharmacology for Health Information Administration	2.0	2.0
HLIN 361	Health Information Administration Laboratory I	1.0	1.0
HLIN 362	Health Information Administration Laboratory II	1.0	1.0
HLIN 395	Professional Practice Experience I--Junior Affiliation	3.0	3.0
HLIN 441	Legal Aspects of Health Information Administration I	4.0	4.0
HLIN 483	Long-Term and Alternative Delivery Systems in Health Care	4.0	4.0
HLIN 493	Health Information Management I	4.0	4.0
REL_ 4__	Upper Division Religion		2.0
RELR 4__	Upper Division Relational		2.0
Totals		44.0	55.0

Senior Year		PB Cert	BS
AHCJ 432	Database Management	2.0	2.0
AHCJ 433	Database Management II	2.0	2.0
AHCJ 498	Wholeness Portfolio II		1.0
HLIN 306	E & M Coding for Billing and Reimbursement	2.0	2.0
HLIN 401	Survey of Health Systems Management	4.0	4.0
HLIN 407	Financial Management for Health Information Management	2.0	2.0
HLIN 421	Survey of Health Systems Management--Applied	4.0	4.0
HLIN 444	Corporate Compliance in Health Care	3.0	3.0
HLIN 445	Coding Seminar	3.0	3.0
HLIN 451	Quality Improvement in Health Care	3.0	3.0
HLIN 462	Health Information Administration Laboratory III	1.0	1.0
HLIN 463	Health Information Administration Laboratory IV	1.0	1.0
HLIN 475	Research Methods in Health Information Management		3.0
HLIN 484	Current Topics in Health Information Administration	3.0	3.0
HLIN 494	Health Information Management II	5.0	5.0
HLIN 495	Professional Practice Experience Senior Affiliation	3.0	3.0
RELE 457	Christian Ethics and Health Care	2.0	2.0
RELT 423	Loma Linda Perspectives		2.0
Totals		40.0	46.0
<b>Overall Totals</b>		<b>84.0</b>	<b>101.0</b>

A minimum grade of C (2.0) is required for all courses in the program.

Additional certificate requirements: An LLU G.P.A. of 2.5 must be maintained throughout the program. A minimum of 50 units is required for completion.

## HEALTH INFORMATION ADMINISTRATION—HIT-PROGRESSION

### Admission

To be eligible for admission to the Health Information Technology (HIT) Progression curriculum leading to a B.S. degree, the applicant must be a graduate of an accredited health information technology program or hold a current RHIT credential.

## Subject requirements

A maximum of 70 semester units or 105 quarter units of transfer credit is accepted from accredited junior colleges.

## Prerequisite

### Domain 1: Religion and humanities (20 quarter units)

Humanities—Choose minimum of three areas from: history, literature, modern language, philosophy, and art/music appreciation.

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university.

### Domain 2: Scientific inquiry and analysis (24-32 quarter units)

Natural sciences (12 units minimum)

Human anatomy and physiology with laboratory, complete sequence

Choose remaining units from: chemistry, geology, mathematics, astronomy, physics, statistics.

Social sciences (12 units minimum)

Cultural anthropology or an approved course dealing with cultural diversity

General psychology

Choose two additional courses from: sociology, economics, geography, political science

### Domain 3: Communications (9-13 quarter units)

English composition, complete sequence

Introduction to computers (must include word processing)

### Domain 4: Health and wellness (2-6 quarter units)

Personal health or nutrition

Two physical activity courses

## Other

Introductory accounting (one quarter or semester)

Electives to meet the minimum total requirement of 96 quarter units

General education requirements of Domains I through IV; see Division of General Studies, Section II of this CATALOG.

### Available at LLU (may be transferred from another regionally accredited institution)

Units

Available at LLU (may be transferred from another regionally accredited institution)		Units
AHCJ 214	Fundamentals of Computer Systems	2.0
AHCJ 311	Medical Terminology	2.0
AHCJ 325	U. S. Health Care Delivery System	2.0
AHCJ 351	Statistics for the Health Professions	3.0
AHCJ 402	Pathology I	4.0
AHCJ 403	Pathology II	3.0
AHCJ 432	Database Management	2.0
AHCJ 461	Research Methods	2.0
HLIN 325	Pharmacology for Health Information Administration	2.0
HLIN 361	Health Information Administration Laboratory I	1.0

HLIN 475	Research Methods in Health Information Management	3.0
HLIN 493	Health Information Management I	4.0
Totals		30.0

**Required core professional courses from the HIT program**

Units

AHCJ 331	Human Resource Management	3.0
HLIN 301	Introduction to Health Records Management	4.0
HLIN 303	Basic Coding Principles and Techniques I	(taken within two years, or current work experience; equivalency examination may be required)
HLIN 304	Basic Coding Principles and Techniques II	(taken within two years, or current work experience; equivalency examination may be required)
HLIN 305	Health Care Statistical Applications	3.0
HLIN 362	Health Information Administration Laboratory II	1.0
HLIN 395	Professional Practice Experience I--Junior Affiliation	3.0
HLIN 441	Legal Aspects of Health Information Administration I	(taken within two years, or current work experience, or evidence of ten hours of recent training in HIPAA legislation; equivalency examination may be required)
HLIN 451	Quality Improvement in Health Care	3.0
Totals		27.0

**Required to be taken through LLU**

Units

AHCJ 305	Infectious Disease and the Health Care Provider	1.0
AHCJ 328	Wholeness Portfolio I	1.0
AHCJ 407	Financial Management	2.0
AHCJ 498	Wholeness Portfolio II	1.0
HLIN 306	E & M Coding for Billing and Reimbursement	2.0
HLIN 401	Survey of Health Systems Management	4.0
HLIN 407	Financial Management for Health Information Management	2.0
HLIN 421	Survey of Health Systems Management--Applied	4.0
HLIN 444	Corporate Compliance in Health Care	3.0
HLIN 445	Coding Seminar	3.0
HLIN 462	Health Information Administration Laboratory III	1.0
HLIN 463	Health Information Administration Laboratory IV	1.0
HLIN 483	Long-Term and Alternative Delivery Systems in Health Care	4.0
HLIN 484	Current Topics in Health Information Administration	3.0
HLIN 494	Health Information Management II	5.0
HLIN 495	Professional Practice Experience Senior Affiliation	3.0
RELE 457	Christian Ethics and Health Care	2.0
RELT 423	Loma Linda Perspectives	2.0
Totals		44.0
<b>Overall Totals</b>		<b>101.0</b>

## Health Professions Education – AH

Certificate (postbaccalaureate), M.S.

ARTHUR B. MARSHAK, Program Director

The 27-quarter unit health professions education certificate and the 48-quarter unit Master of Science degree are designed for faculty who want to enhance the effectiveness and efficiency of student learning in the classroom and clinic. Upon completion, graduates will be able to plan for effective learning experiences; improve assessment and evaluation of learning and instruction; and evaluate clinical performance with confidence, improve classroom performance, enhance academic administration skills, and develop expertise in health professions education.

Courses to complete the Master of Science degree include the core 18 units and a minimum of 6 units in Domain I and 6 units in Domain II, for a total of 48 units.

Units to complete the postbaccalaureate certificate include the core 18 units and a minimum of 9 units from Domains I and II selected in consultation with the program director.

Additional courses may be added to each domain in consultation with the program director.

Required		Cert	MS
AHCJ 506	Educational Evaluation and Clinical Assessment	3.0	3.0
AHCJ 509	Teaching and Learning Styles	3.0	3.0
AHCJ 556	Administration in Higher Education	3.0	3.0
HPRO 543	Writing for Health Professionals	3.0	3.0
RELE 5__	Graduate-level Ethics	3.0	3.0
AHCJ 515	Curriculum Development in Higher Education (3.0)	3.0	3.0
NRSG 546	Curriculum Development in Higher Education (3.0)		
Totals		18.0	18.0

### Domain I electives

Teaching, learning, assessment, and evaluation		Cert	MS
AHCJ 564	Collaborative Learning in Higher Education (3.0)	0.0-9.0	6.0-24.0
AHCJ 599	Directed Teaching (3.0)		
AHCJ 699	Directed Study (3.0)		
	<i>Current Issues in Health Professions Education</i>		
HPRO 588	Health Behavior Theory and Research (4.0)		
NRSG 544	Teaching and Learning Theory (3.0)		
NRSG 545	Teaching Practicum (3.0)		
PHIL 616	Seminar in the Philosophy of Science (2.0)		
PSYC 545	Cognitive Foundations (4.0)		
RELR 586	Psychology of Moral and Faith Development (3.0)		
Totals			

**Domain II electives**

## Leadership electives

			Cert	MS
AHCJ 539	Technology and Health Care Organizations (3.0)	Classes, in addition to those listed, may be chosen in consultation with program director	0.0-9.0	6.0-24.0
AHCJ 545	Legal and Ethical Issues in the Health Professions (3.0)			
AHCJ 699	Directed Study (1.0-6.0)			
GLBH 517	Dynamics of Culture and Health (3.0)			
HADM 528	Organizational Behavior in Health Care (3.0)			
HADM 580	Foundations of Leadership (3.0)			
HADM 581	Orientation for Leadership I: Vision and Understanding (4.0)			
HADM 582	Orientation for Leadership II: Exploring the Nature of Leadership (4.0)			
HADM 583	Orientation for Leadership III: Setting a New Direction (4.0)			
PSYC 566	Cross-Cultural Psychology (2.0)			
PSYC 581	Psychological Treatment I: Behavioral and Cognitive Therapies (2.0)			
RELE 524	Bioethics and Society (3.0)			
RELE 525	Ethics for Scientists (3.0)			
RELR 575	Art of Integrative Care (3.0)			
RELR 584	Culture, Psychology, and Religion (3.0)			
Totals				
<b>Overall Totals</b>			<b>27.0</b>	<b>48.0</b>

# Medical Dosimetry—AH

## Certificate

BALDEV PATYAL, Program Director

### FACULTY

Jeannie Anderson

Carol Davis

Noriece Kisinger

Sara Leeds

Anh Ly

## THE PROGRAM

The Medical Dosimetry Program is designed to educate personnel in the discipline of dosimetry within a radiation oncology environment, and to prepare them to take the certificate in medical dosimetry (CMD) board examination.

Medical dosimetry is a dynamic, exciting field involving a combined knowledge of mathematics, physics, and the biological and medical sciences. Dosimetrists plan optimal isodose distributions and treatment dose calculations for a variety of external beam as well as brachytherapy treatments. Medical dosimetrists must possess excellent analytical skills, the ability to critically evaluate data, and an aptitude for physics and mathematics. They must also be able to work closely as a team with physicists, physicians, radiation therapists, and other personnel.

Due to a lack of training programs in medical dosimetry throughout the United States, there is a shortage of medical dosimetrists in many areas of the country. This program aims to provide a supply of well-trained dosimetrists who will be able to meet the needs of radiation oncology facilities in the local area and beyond.

## PROGRAM OBJECTIVES

Upon completion of the program, the graduate should be qualified to:

1. Demonstrate ability to accurately complete dosimetric calculations and procedures as they pertain to all aspects of treatment planning for external beam and brachytherapy.
2. Develop and define critical-thinking skills to enhance ability to analyze and compute dosimetric data as they relate to all aspects of radiation therapy treatment.
3. Exhibit professional behavior, which includes ability to communicate with other professionals and work well, both individually and as a team member.
4. Manage patients in an empathetic manner and exhibit basic patient-care proficiencies.
5. Support the professional code of ethics and comply with the stated scope of practice.

## ADMISSION EDUCATIONAL BACKGROUND

Students will either need to have:

- **Track 1**-ARRT registration in radiation therapy technology, with a minimum of two years postgraduate clinical experience; or

- **Track 2-A** baccalaureate degree in physics, mathematics, or equivalent from an accredited university.

## PROGRAM DESIGN

The program for both tracks is five quarters in length.

Instruction includes a mixture of lecture, laboratory, and clinical work. Students will be exposed to a variety of methodologies within dosimetry, including work with proton therapy treatment planning.

All instruction will be conducted in the Radiation Medicine Department of Loma Linda University Medical Center. The only exceptions to this will be a short clinical rotation to Long Beach Memorial and City of Hope medical centers.

The program faculty consists of physicists and dosimetrists who are extremely experienced in their field—many in both photon and proton therapy treatment planning.

## ACCREDITATION

The American Association of Medical Dosimetrists (AAMD) strongly supports the concept of formal dosimetry training, which leads to board eligibility for the certificate in medical dosimetry. This qualification is considered to be the gold standard in dosimetry education.

The Joint Review Committee on Education in Radiologic Technology (JRCERT) accreditation of dosimetry programs became available in 2003. The program is currently in the accreditation process.

### Prerequisite, B.S. in Physics Track

Anatomy and physiology (no laboratory required)  
Medical terminology

### Prerequisite, ARRT-Registered Radiation Therapy Technologist Track

College algebra  
Trigonometry

		BS	Rad
		Physics	Therapy
		Track	Track
<b>First Year</b>			
RTMD 301	Treatment Planning I	3.0	3.0
RTMD 307	Principles of Brachytherapy	2.0	2.0
RTMD 309	Radiation Therapy Core--Concept Review		1.0
RTMD 310	Applied Math for Medical Dosimetry		1.0
RTMD 355	Physical Principles of Radiation Therapy I	3.0	3.0
RTMD 356	Physical Principles of Radiation Therapy II	3.0	3.0
RTMD 961	Practicum	9.0	
RTMD 962	Practicum	8.0	
RTMD 963	Practicum	8.0	
RTMD 971	Practicum		10.0
RTMD 972	Practicum		9.0
RTMD 973	Practicum		9.0
RTMR 285	Principles of Radiography I	3.0	
RTMR 334	CT and Cross-sectional Anatomy	2.0	2.0

RTSI 369	CT Physics	2.0	2.0
RTTH 332	Radiation Biology	1.0	
RTTH 344	Radiation Therapy Procedures	2.0	
RTTH 364	Radiation Oncology I	2.0	
RTTH 365	Radiation Oncology II	2.0	
RTTH 366	Radiation Oncology III	2.0	
Totals		52.0	45.0

		<b>BS</b>	<b>Rad</b>
		<b>Physics</b>	<b>Therapy</b>
<b>Second Year</b>		<b>Track</b>	<b>Track</b>
RELE 457	Christian Ethics and Health Care	2.0	2.0
RTMD 302	Treatment Planning II	2.0	2.0
RTMD 305	Special Topics	2.0	2.0
RTMD 314	Quality Assurance, with Laboratory	2.0	2.0
RTMD 964	Practicum	9.0	
RTMD 965	Practicum	10.0	
RTMD 974	Practicum		9.0
RTMD 975	Practicum		10.0
Totals		27.0	27.0
<b>Overall Totals</b>		<b>79.0</b>	<b>72.0</b>

Students who have already taken these classes will be required to retake them under another number.

# Medical Radiography—AH

A.S. (on campus and Saudi Arabia)

MARK J. CLEMENTS, Program Director

BRENDA L. PFEIFFER, Program Co-Director

ABDUL FATTAH RACHDAN, Program Coordinator, Saudi Arabia Campus

STEVEN L. LEBER, Clinical Coordinator

GREGORY E. WATKINS, Medical Advisor

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Brenda L. Pfeiffer

Timothy Seavey

Andrew L. Shepard

The medical radiographer, or radiologic technologist, is responsible for the accurate imaging of body structures on a radiograph or other image receptor. The technologist provides for patient protection and comfort, determines proper exposure factors, manipulates medical imaging equipment, evaluates the radiograph image for quality, and utilizes film or digital technologies to archive and transmit the patient examination images for physician evaluation.

The technologist may also assist the radiologist physician in specialized radiographic procedures. These may require the use of sterile procedures and universal precautions in the administration of radiographic contrast agents to the patient for the enhanced viewing of body systems and their functions.

## THE PROGRAM

The Medical Radiography Program begins with the Autumn Quarter and is based on the completion of one year of prerequisite course work at any accredited college or university. The first quarter at Loma Linda University primarily emphasizes the theoretical aspects of radiography, with one day per week in clinical orientation. The remaining six quarters combine clinical training on a two-to-five-days-per-week basis, with more advanced classroom topics. The schedule may involve limited evening assignments. Clinical and classroom involvement in the program is full time (40 hours/week). Students are off on all national holidays and quarter breaks.

## AFFILIATIONS

For the clinical portion of the program, students are assigned to one of the affiliated medical centers: Loma Linda University Medical Center-Loma Linda, Loma Linda University Medical Center-East Campus, Loma Linda University Medical Center-Faculty Medical Offices, Inland Valley Regional Medical Center, Hemet Valley Medical Center, Eisenhower Medical Center, Desert Hospital, Redlands

Community Hospital, Parkview Community Hospital, Pioneers Memorial Hospital, El Centro Regional Medical Center, St. Bernardine Medical Center, Community Hospital of San Bernardino, Rancho Springs Medical Center, Riverside Community Hospital, or St. Mary Regional Medical Center.

### **ACCREDITATION**

The program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 2850, Chicago, IL 60606-3182; telephone 312/704-5300. The program is also approved by the Radiologic Health Branch (RHB) of the state of California, Department of Public Health MS 7610, P.O. Box 997414, Sacramento, CA 95899-7414; telephone: 916/327-5106.

### **CPR CERTIFICATION**

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health care provider level. This may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

### **PROFESSIONAL REGISTRATION AND CERTIFICATION**

Upon completion of the requirements for the Associate in Science degree, the graduate is eligible to write the qualifying examination of The American Registry of Radiologic Technologists (ARRT). Program graduates who pass the ARRT examination in radiography are eligible to pay for and receive the state license (CRT) in California without further testing within five years of passing the ARRT examination. Graduates are encouraged to become members of the California Society of Radiologic Technologists (CSRT) and the American Society of Radiologic Technologists (ASRT) for professional growth and continuing education in their professional discipline.

### **PROGRAM MISSION STATEMENT**

The Medical Radiography Program at Loma Linda University provides a quality educational experience focused on the whole person. The program prepares students to be registry-eligible, entry-level radiographers—equipped with the knowledge, skills, values, attitudes, and behaviors appropriate for providing excellent patient care and safely managing radiation exposure.

### **PROGRAM OBJECTIVES**

Upon completion of the program, the graduate should be qualified to:

1. Complete all certification requirements of the American Registry of Radiologic Technologists and licensure requirements for the state of California.
2. Anticipate and render appropriate patient care, comfort, and education for a variety of radiologic examinations.
3. Use principles of basic x-ray production to provide radiation protection that minimizes radiation exposure to the patient, to one's self, and to other members of the health care team.
4. Understand the scope and limits of equipment operation used in radiography, and recognize and report equipment malfunctions.
5. Exhibit clinical competence by properly using radiographic equipment, techniques, and procedures; and applying knowledge of human anatomy, function, and pathology to a variety of patient situations.

6. Demonstrate excellence in the application of knowledge and skills in order to maintain a high level of quality patient care.
7. Apply problem-solving and critical thinking skills when working with patients, performing examinations, and evaluating radiographs for diagnostic quality.
8. Incorporate the values, ethics, and practices of the radiography professions in order to provide a service to humanity; and respect the dignity and diversity of all people.
9. Employ appropriate verbal, written, and interpersonal communication skills when relating to patients, co-workers, and other members of the health care team.
10. Utilize the highest professional behavior in all interactions.
11. Demonstrate collaboration and teamwork in the health care setting in order to meet the goals of the organization.
12. Defend the profession's code of ethics and work within the profession's scope of practice.
13. Construct a professional development plan for ongoing improvement in the knowledge and skills of the profession.
14. Understand the value of participating in educational and professional activities, sharing knowledge with colleagues, and investigating new and innovative aspects of professional practice.
15. Understand and apply Loma Linda University's philosophy of wholeness in one's personal and professional life.

## STUDENT LEARNING OUTCOMES

1. Students will demonstrate clinical competence by performing radiographic examinations of diagnostic quality and applying patient care and practices for radiographic procedures .
2. Students will communicate effectively by clearly explaining radiographic procedures to patients, effectively communicating and working with health care team; and demonstrating appropriate communication for diverse populations.
3. Students will develop critical-thinking and problem-solving skills by appropriately adjusting procedures and critiquing images to determine diagnostic acceptability.
4. Students will demonstrate the values and attitudes of an entry-level radiographer by constructing a plan for professional development, modeling professional behavior, and examining the core values and reflecting on personal application.

## ADMISSION

To be eligible for admission, the applicant must have completed high school from an accredited institution or passed the GED and completed a minimum of 42 quarter units (or 28 semester units) at an accredited college or university.

## Prerequisite

1. Human anatomy and physiology with laboratory, two-part sequence
2. Two years high school mathematics at algebra level or above, with grades of C or above; or intermediate algebra in college
3. Medical terminology
4. One year high school chemistry or physics; or introductory chemistry, introductory physics in college (one quarter/semester)
5. General psychology or general sociology

6. English, one year in college sequence. Students who already have a bachelor's degree from a regionally accredited college or university do not have to complete additional units in this area.
7. Interpersonal communication, oral communication, or public speaking
8. Computers, one year high school computer courses; or one quarter/semester college computer course
9. Religion requirement, 4 units per year if student attended a Seventh-day Adventist college or university
10. Electives to meet the minimum total requirements of 42 units

## OBSERVATION EXPERIENCE

A minimum of twelve hours of observation in a radiology department is required. Contact the department to obtain the appropriate form.

<b>Sophomore Year, Autumn Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
AHCJ 326	Fundamentals of Health Care	2.0	2.0
AHCJ 328	Wholeness Portfolio I	1.0	1.0
REL_ 4__	Upper Division Religion	2.0	2.0
RTMR 202	Orientation Laboratory	3.0	3.0
RTMR 224	Legal Issues in Medical Radiography	1.0	1.0
RTMR 246	Professional Communications	2.0	2.0
RTMR 253	Medical Radiography Procedures I	2.0	2.0
RTMR 253L	Medical Radiography Procedures Laboratory I	1.0	1.0
RTMR 285	Principles of Radiography I	3.0	3.0
Totals		17.0	17.0

<b>Winter Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
RTMR 221	Radiologic Patient Care	2.0	2.0
RTMR 254	Medical Radiography Procedures II	2.0	2.0
RTMR 254L	Medical Radiography Procedures Laboratory II	1.0	1.0
RTMR 284	Radiation Protection and Biology	2.0	2.0
RTMR 286	Principles of Radiography II	4.0	4.0
RTMR 371	Medical Radiography Affiliation I	5.0	5.0
Totals		16.0	16.0

<b>Spring Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
RTMR 255	Medical Radiography Procedures III	2.0	2.0
RTMR 255L	Medical Radiography Procedures Laboratory III	1.0	1.0
RTMR 283	Radiologic Physics	3.0	3.0
RTMR 287	Principles of Radiography III	3.0	3.0
RTMR 372	Medical Radiography Affiliation II	7.0	7.0
Totals		16.0	16.0

<b>Clinical Year, Summer Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
RTMR 373	Medical Radiography Affiliation III	12.0	12.0
Totals		12.0	12.0

<b>Autumn Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
REL_ 4__	Upper Division Religion	2.0	2.0
RTMR 321	Radiographic Image Evaluation	2.0	2.0
RTMR 345	Radiologic Pathology	2.0	2.0
RTMR 374	Medical Radiography Affiliation IV	10.0	10.0
Totals		16.0	16.0

<b>Winter Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
RTMR 305	Introduction to Computed Tomography I	2.0	2.0
RTMR 342	Professional Development	1.0	1.0
RTMR 363	Comprehensive Review I	1.0	1.0
RTMR 375	Medical Radiography Affiliation V	10.0	10.0
Totals		14.0	14.0

<b>Spring Quarter</b>		<b>On Campus</b>	<b>Saudi Arabia</b>
RTMR 306	Introduction to Computed Tomography II	2.0	2.0
RTMR 365	Comprehensive Review II	1.0	1.0
RTMR 386	Medical Radiography Affiliation VI	10.0	10.0
Totals		13.0	13.0
<b>Overall Totals</b>		<b>104.0</b>	<b>104.0</b>

Certain aspects of the curriculum require individual scheduling. Time arrangements may be subject to change. Entrance to the clinical year is contingent upon completion of all prior requirements.

A minimum grade of C+ (2.5) is required for all courses in the program.

## Nuclear Medicine Technology—AH

### Certificate

ERMA EZPELETA, Program Director

Nuclear medicine uses radioactivity to diagnose and treat disease. This medical specialty provides information about both the structure and the function of virtually every major organ system within the body. Nuclear medicine procedures are safe, involve little or no patient discomfort, and do not require the use of anesthesia.

The nuclear medicine technologist is responsible for preparing and administering radiopharmaceuticals; performing patient-imaging procedures; accomplishing computer processing and image enhancement; analyzing biologic specimens; and providing images, data analysis, and patient information for diagnostic interpretation by the physician health care team member.

### OBJECTIVES

During the twelve-month certificate Nuclear Medicine Technology Program, students take formal course work along with instruction in the clinical aspects of nuclear medicine. This includes participation, under close supervision, in the actual procedures within the nuclear medicine department. The clinical calendar varies from the University calendar in that the clinical schedule is full time (forty clock hours per week), arranged around lectures and coordinated with affiliated nuclear medicine departments. The program begins with the Autumn Quarter.

### PROGRAM OUTCOMES

Upon completion of the program, the graduate should be qualified to:

1. Demonstrate the knowledge and skill base to qualify for work in nuclear medicine at a hospital or clinic.
2. Demonstrate critical thinking in nuclear medicine.
3. Behave in a professional manner in all interactions.
4. Comply with the current standards and practices set by the governing bodies and professional organizations.

### ACCREDITATION

The program is accredited by the Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities, 985 Atlantic Avenue, Suite 100, Alameda, CA 94501; and by the Department of Health Services, Radiologic Health Branch, P.O. Box 942732, Sacramento, CA 94234-7320.

### DISTANCE EDUCATION

The Nuclear Medicine Technology Program is offered via distance education at City College in Fresno, California.

## CPR CERTIFICATION

Students are required to have current cardiopulmonary resuscitation (CPR) certification (adult and child) for all scheduled clinical experience. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

## PROFESSIONAL REGISTRATION AND CERTIFICATION

Upon completion of the certificate requirements, the student is eligible to write the qualifying examination in nuclear medicine of the American Registry of Radiologic Technologists (ARRT), and the certifying examination of the Nuclear Medicine Technology Certification Board (NMTCB) and of the state of California (CTNM).

## APPLICATION ELIGIBILITY

To be eligible for admission to the certificate program in nuclear medicine, the applicant must fulfill *one* of the following requirements:

- Be a graduate of an accredited radiologic technology program; or
- Be an ARRT-registered radiologic technologist; or
- Be an ASCP-certified medical technologist; or
- Be a registered nurse with at least two years of college credit, with a minimum of an associate degree; or
- Have a baccalaureate degree in one of the natural sciences;

AND must have credits in the following:

- Two years high school mathematics with grades of C or above, intermediate algebra in college
- Chemistry with laboratory (one quarter/semester introductory or general)
- General physics with laboratory, complete sequence (highly recommended)
- Human anatomy and physiology with laboratory, complete sequence
- Medical terminology
- Patient-care methods

## OBSERVATION EXPERIENCE

A minimum of twenty-four hours of observation in a nuclear medicine department is required.

## CERTIFICATIONS

The following three certifications must be completed prior to entering the program:

1. CPR certification (adult, child; offered by Loma Linda University Life Support Education)
2. Venipuncture (offered by Loma Linda University Medical Center Staff Development)
3. ECG/EKG interpretation (offered by Loma Linda University Medical Center Staff Development)

Required		Units
RELE 457	Christian Ethics and Health Care	2.0
RTNM 351	Principles of Nuclear Medicine I	3.0
RTNM 352	Principles of Nuclear Medicine II	3.0
RTNM 353	Nuclear Medicine Procedures I	2.0
RTNM 354	Nuclear Medicine Procedures II	2.0
RTNM 356	Positron Emission Tomography	2.0
RTNM 381	Topics in Nuclear Medicine I	2.0

RTNM 971	Nuclear Medicine Affiliation I	11.0
RTNM 972	Nuclear Medicine Affiliation II	11.0
RTNM 973	Nuclear Medicine Affiliation III	11.0
RTNM 974	Nuclear Medicine Affiliation IV	11.0
Totals		60.0
<b>Overall Totals</b>		<b>60.0</b>

A minimum grade of C (2.0) is required for all courses in this program.

## Nutrition and Dietetics—AH

B.S., M.S. (nutrition and dietetics, nutrition care management—online)

BERTRUM C. CONNELL, Chair

GEORGIA W. HODGKIN, Associate Chair

CINDY L. KOSCH, Coordinated Program Director

JEJE NOVAL, Nutrition Care Management Program Director,

MAXINE J. TAYLOR, Academic Coordinator of Clinical Education

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Merrill L. King  
Lyndee Lawrence  
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Carla Lyder  
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Gwen Moore  
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Leh C. Ota  
Heba Peters  
Elizabeth Quigley  
Sue Razor  
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Frances Suen  
Terri Taylor  
Maryellen Westerberg  
Linda J. Whiting  
Pamela Yong

**ADVISORY COMMITTEE**

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Sue Razor  
Patty Watts  
Ralph Watts  
Maryellen Westerberg  
Grenith J. Zimmerman  
\*ex officio

The registered dietitian (RD) is a vital member of the health care team in the field of health promotion and medical nutrition therapy. This profession focuses on the field of health promotion; and medical nutrition therapy focuses on the science of nutrition, the art of food presentation, and management in providing nutrition care—as well as instruction in proper food choices throughout life. Individuals and groups benefit from the work of the registered dietitian, which leads potentially to better health and longer life. Dietetic practice is the application of principles derived from integrating knowledge of food, nutrition, biochemistry, physiology, business and management, journalism, and behavioral and social sciences; as well as the artistic presentation of food to achieve and maintain health, prevent disease, and facilitate recovery from illness.

## **NUTRITION AND DIETETICS—COORDINATED PROGRAM**

The coordinated program—a joint effort of the School of Allied Health Professions and the School of Public Health—offers students the option to pursue one of three degrees:

- B.S. degree in nutrition and dietetics
- M.S. degree in nutrition and dietetics
- M.P.H. degree in public health nutrition

Each of these degrees culminates in eligibility to obtain a credential in dietetics, on which basis one can become a registered dietitian. The student obtains the credential in dietetics upon successful completion of the registration examination offered by the Commission on Dietetic Registration of the American Dietetic Association. The coordinated program in dietetics combines didactic and supervised professional practice experiences to develop professional skills concurrently with cognitive and technical skills that enable the graduate to establish eligibility to become a registered dietitian.

### **Nutrition and Dietetics—Coordinated Program in Dietetics, B.S.**

The B.S. degree prepares entry-level dietitians to join the profession and contribute to the wholeness of humankind. The graduate is awarded the Bachelor of Science degree and is eligible to write the registration examination of the Commission on Dietetic Registration of the American Dietetic Association. The B.S. degree curriculum comprises didactic and supervised professional practice experiences in a health science environment to prepare an educated graduate. Admission at this University begins with the junior year of college. The applicant will present at least two years of education from an accredited college or university to meet specific subject requirements for the 2011-2012 academic year.

The seven-quarter professional curriculum includes theory, laboratory, research, and clinical experiences. Ten weeks of clinical experiences are scheduled at the end of the junior year and again during the senior year. Students participate as active members of the nutrition care team in multiple clinical settings. Administrative affiliation experiences involve decision-making assignments in volume feeding operations in school food service or health care.

Listed below are the required admission and prerequisite requirements to obtain a bachelor's degree from Loma Linda University.

### **Admission**

Admission is based on a selective process. To be eligible for consideration, the applicant must:

- have a G.P.A. of 3.0 or above
- complete an interview
- complete an online application
- provide recommendations
- complete program prerequisites

### **Prerequisite**

- Humanities—20 quarter units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language, art/music appreciation, or art/music history)
- Must include 4 units of religion per year, if attending a Seventh-day Adventist college or university
- College-level algebra
- Anatomy and physiology with laboratory, complete sequence
- General chemistry with laboratory (two quarters or one semester)
- Microbiology with laboratory
- Psychology
- Sociology
- English composition, complete sequence
- Speech
- Two physical activity courses
- Human nutrition

### **Total minimum units required: 96 quarter units**

For total unit requirements for graduation, see Division of General Studies, LLU General Education Requirements (Section II).

### **Nutrition and Dietetics—Coordinated Program in Dietetics, M.S.**

The M.S. degree prepares entry-level dietitians to join the profession in areas of advanced practice and in specialty areas that will allow them to contribute to the wholeness of humankind. The graduate is awarded an M.S. degree in nutrition and dietetics. The curriculum is comprised of didactic and supervised professional practice experiences in an environment of liberal arts education to prepare an educated graduate.

This curriculum includes theory, laboratory, research, and clinical experiences. Twelve hundred hours of supervised professional practice experiences are scheduled in medical nutrition therapy, community, and administrative nutrition. Students participate as active members of the nutrition care team in multiple clinical settings and may choose an emphasis in medical nutrition therapy or public health nutrition. Students choosing to earn the M.P.H. degree in public health nutrition should consult the Nutrition Program in the School of Public Health section of this CATALOG.

Three choices are available to earn a Master of Science degree in nutrition and dietetics at Loma Linda University:

**Nutrition and Dietetics—Coordinated Postdidactic Program in Dietetics (DPD), M.S.**

The M.S. degree for didactic programs in dietetics (DPD) is specifically designed for graduates who choose not to pursue a standard dietetic internship but who wish to complete a coordinated master's degree and supervised practice experience in order to establish eligibility to write the registration examination for dietitians and become a registered dietitian. This curriculum builds upon previous course work in nutrition and dietetics and culminates with an M.S. degree and a verification statement covering both didactic and supervised practice requirements.

***Admission***

Admission is based on a selective process. To be eligible for consideration, the applicant must:

- have a 3.0 G.P.A. or above
- complete an interview
- complete an online application
- provide recommendations
- complete program prerequisites
- provide GRE scores to Loma Linda University
- provide a DPD verification statement

***Prerequisite***

- College-level algebra
- Anatomy and physiology with laboratory, complete sequence
- General chemistry with laboratory (two quarters or one semester)
- Microbiology with laboratory

**Nutrition and Dietetics—Coordinated Program in Dietetics, M.S. (for bachelor's degree graduates in nonnutrition areas)**

Students desiring an M.S. degree in nutrition and dietetics who have a bachelor's degree in a field other than nutrition take one year of basic undergraduate foundation courses in the nutrition field. The second and third years consist of nutrition and dietetics courses offered at the master's degree level, including both the didactic course work and the supervised professional practice.

Listed below are the required admission and prerequisite requirements to obtain a master's degree from Loma Linda University.

***Admission***

Admission is based on a selective process. To be eligible for consideration, the applicant must:

- have a 3.0 G.P.A. or above
- complete an interview
- complete an online application
- provide recommendations
- complete program prerequisites
- provide GRE scores to Loma Linda University

***Prerequisite***

- College-level algebra
- Anatomy and physiology with laboratory, complete sequence
- General chemistry with laboratory (two quarters or one semester)
- Microbiology with laboratory
- Human nutrition

**Nutrition and Dietetics—Coordinated Program in Dietetics, B.S. and M.S.**

Students desiring an M.S. degree in nutrition and dietetics who do not have a bachelor's degree may take this three-year course of study at Loma Linda University. The first two years of the curriculum offer the opportunity to complete a bachelor's degree and take the registration examination at the end of this time period in order to become an RD. The student completes the master's degree during the third year, having enhanced his/her skills by completing additional graduate didactic courses.

Listed below are the admission and prerequisite requirements to obtain a bachelor's and master's degree from Loma Linda University.

***Admission***

Admission is based on a selective process. To be eligible for consideration, the applicant must:

- have a 3.0 G.P.A. or above
- complete an interview (by phone or in person)
- complete an online application
- provide recommendations
- complete program prerequisites

***Prerequisite***

- Humanities—20 quarter units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language, art/music appreciation, or art/music history)
- Must include 4 units of religion per year if attending a Seventh-day Adventist college or university
- College-level algebra
- Anatomy and physiology with laboratory, complete sequence
- General chemistry with laboratory (two quarters or one semester)
- Microbiology with laboratory
- Psychology
- Sociology
- English composition, complete sequence
- Speech
- Two physical activity courses
- Human nutrition

Total minimum units required upon entrance: 96 quarter units

For total unit requirements for graduation, see Division of General Studies, LLU General Education Requirements (Section II).

## **Opportunities**

Members of the dietetics profession practice in a variety of environments—including hospitals and other health care facilities, schools and universities, government and community agencies, business, and industry. A growing number of dietitians are employed in physicians' offices, clinics, home health care agencies, mass communication, and many other entrepreneurial roles.

By successfully passing the registration examination for dietitians, practice opportunities as a specialist in medical nutrition therapy, administrative dietetics, nutrition education, community nutrition, or research are available. There is increased recognition of the importance of nutrition in the fields of medicine, dentistry, and health promotion—with emphasis on fitness and optimal well-being. This indicates that the dietitian's scope of practice is steadily broadening.

The registered dietitian in medical nutrition therapy applies the science of nutrition to the care of people through health promotion and disease prevention, and uses medical nutrition therapy in the treatment of disease. The effective dietitian must be aware of the cultural, social, economic, aesthetic, and psychological factors that affect eating patterns. As a member of the patient-care team, the registered dietitian (RD) is responsible for assessing, implementing, and monitoring the nutritional care of patients. In addition, the RD may serve professionally as a nutrition practitioner in health care; a teacher in an educational institution; a research dietitian; or a nutrition consultant-educator in municipal, state, or federal departments of health.

The RD in management is accountable for the food service system. In a health care institution, s/he is responsible for the effective functioning of food service from the standpoint of patients, administration, medical staff, and personnel. The administrative RD may also teach; manage food systems in educational, public, or commercial facilities; serve as a consultant to health care or educational institutions; or enter the field of research.

Community registered dietitians practice in diverse settings, translating nutrition science into improved health status. Challenges may include forming partnerships with various organizations, mastering technology, enacting regulations and policies that protect and improve the public's health, and creatively managing scarce resources. Dietitians working in the community exhibit high-quality leadership and planning skills, and many create positions that are entrepreneurial as well as financially rewarding.

## **Accreditation**

The coordinated program in dietetics is currently granted continuing accreditation by the Commission on Accreditation for Dietetics Education of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312/899-5400. Web site: <[eatright.org/cade](http://eatright.org/cade)>; Fax: 312/899-4817.

## **Professional registration**

Upon satisfactory completion of the program and upon recommendation of the faculty, the graduate will receive a verification statement and be eligible to take the registration examination for dietitians in order to become a registered dietitian.

## **Professional association**

Students and graduates are eligible for membership in the American Dietetic Association. The association grants student membership at a nominal rate to students in accredited programs.

The national office of the American Dietetic Association is at 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995. Along with membership in the American Dietetic Association, students become members of the California Dietetic Association. Students are encouraged to join the California Dietetic Association-Inland District and, where possible, the Seventh-day Adventist Dietetic Association.

### Goals of the coordinated program

The goals of the coordinated program in nutrition and dietetics are to:

1. Prepare graduates to be competent entry-level dietitians who are eligible to write the registration examination for dietitians.
2. Prepare graduates who are servant leaders in their chosen profession.
3. Provide professionally trained registered dietitians with either an emphasis in medical nutrition therapy or public health nutrition, who may be employed by the health care and educational systems of the Seventh-day Adventist Church; or by local, national, or international entities.

### Learning outcomes

The graduate will be qualified to:

1. Perform competently at the entry level of professional practice.
2. Exhibit Christian ethical and moral values.
3. Exhibit an investigative spirit to continue attaining knowledge and developing professional competency beyond the entry level.
4. Communicate effectively and be computer literate, using and analyzing data in the decision-making process.
5. Develop leadership skills to achieve personal and corporate goals.
6. Incorporate critical-thinking skills into professional and personal decisions.
7. Demonstrate, from a historical and contemporary basis, the value of diversity in the personal and professional life from ethnic, gender, generational, and ideological points of view.

Junior Year		MS Prior			
		BS	BS/MS	MS DPD	BS
AHCJ 305	Infectious Disease and the Health Care Provider	1.0	1.0	1.0	1.0
AHCJ 329	Organic Chemistry with Laboratory	5.0	5.0		5.0
AHCJ 334	Biochemistry	5.0	5.0		5.0
DTCS 302	Food Selection and Presentation	5.0	5.0		5.0
DTCS 304	Community Nutrition	4.0	4.0		4.0
DTCS 305	Professional Issues in Nutrition and Dietetics	1.0	1.0		1.0
DTCS 321	Nutrition and Human Metabolism	4.0	4.0		4.0
DTCS 341	Introduction to Clinical Nutrition	5.0	5.0		5.0
DTCS 342	Medical Nutrition Therapy I	5.0	5.0		5.0
DTCS 343	Medical Nutrition Therapy II	5.0	5.0		5.0
DTCS 371	Quantity Food Purchasing, Production, and Service	5.0	5.0		5.0
DTCS 372	Food Systems Organization and Management	4.0	4.0		4.0
RELT 436	Adventist Heritage and Health	3.0	2.0		
Totals		52.0	51.0	1.0	49.0

Senior Year		MS Prior			
		BS	BS/MS	MS DPD	BS
AHCJ 407	Financial Management	2.0	2.0		
AHCJ 471	Statistics and Research for Health Professionals I	3.0	3.0		
AHCJ 472	Statistics and Research for Health Professionals II	3.0	3.0		
DTCS 395	Nutrition and Dietetics Practicum	12.0	12.0		
DTCS 405	Senior Seminar	1.0	1.0		
DTCS 442	Nutrition Counseling	3.0	3.0		
DTCS 445	Nutrition Care Management	4.0	4.0		
DTCS 452	Advanced Nutrition	4.0	4.0		
DTCS 453	Advanced Medical Nutrition Therapy	3.0	3.0		
DTCS 461	Food Science	4.0	4.0		
DTCS 473	Medical Nutrition-Therapy Affiliation	12.0	12.0		
DTCS 476	Exercise Physiology in Medical-Nutrition Therapy	3.0	3.0		
REL_ 4__	Upper Division Religion	2.0-3.0	3.0		
RELE 457	Christian Ethics and Health Care	3.0	3.0		
Totals		59.0-60.0	60.0	—	—

Graduate Program		MS Prior			
		BS	BS/MS	MS DPD	BS
AHCJ 548	Human Resource Management in the Health Care Environment		3.0	3.0	3.0
DTCS 506	Professional Seminar in Nutrition and Dietetics			1.0	1.0
DTCS 526	Pharmacology in Medical Nutrition Therapy		2.0	2.0	2.0
DTCS 545	Nutrition Care Management			4.0	4.0
DTCS 554	Advanced Medical Nutrition Therapy			3.0	3.0
DTCS 566	Food Chemistry and Experimental Foods				4.0
DTCS 574	Advanced Food Systems Management		3.0	3.0	3.0
DTCS 576	Exercise Physiology in Medical Nutrition Therapy			3.0	3.0
DTCS 589	Capstone Course in Nutrition & Dietetics		3.0	3.0	3.0
EPDM 509	Principles of Epidemiology I		3.0	3.0	3.0
NUTR 504	Nutritional Metabolism		5.0	5.0	5.0
NUTR 510	Advanced Public Health Nutrition		3.0	3.0	3.0
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids		4.0	4.0	4.0
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals		4.0	4.0	4.0
NUTR 519	Phytochemicals		2.0	2.0	2.0
NUTR 526	Nutrition Counseling and Education				2.0
NUTR 535	Research Applications in Nutrition		3.0	3.0	3.0
NUTR 564	Contemporary Issues of Vegetarian Diets		2.0	2.0	2.0
NUTR 605	Seminar in Nutrition		1.0	1.0	1.0
NUTR 694	Research		4.0	4.0	4.0
REL_ 5__	Graduate-level Religion		3.0		
RELE 524	Bioethics and Society			3.0	3.0
STAT 509	General Statistics		4.0	4.0	4.0

DTCS 525	Nutrition Care Marketing (3.0)	Choose one course	—	3.0	—	—
HPRO 527	Obesity and Disordered Eating (3.0)					
NUTR 534	Maternal and Child Nutrition (3.0)					
NUTR 585	Topics in Global Nutrition (3.0)					
Totals			—	52.0	60.0	66.0

#### Affiliation and practicum

Affiliation and practicum units do not count toward minimum graduate units required for the degree.

#### MS Prior

		BS	BS/MS	MS DPD	BS
DTCS 595	Nutrition and Dietetics Graduate Practicum			12.0	12.0
DTCS 778	Clinical Nutrition Affiliation			12.0	12.0
Totals		—	—	—	—
<b>Overall Totals</b>		<b>111.0-112.0</b>	<b>163.0</b>	<b>61.0</b>	<b>115.0</b>

### NUTRITION CARE MANAGEMENT—M.S.

The M.S. degree in nutrition care management is a postprofessional degree for registered dietitians who seek advancement into administrative roles in their current position or in another institution. Nutrition care management refers to the administration and management of the delivery of nutrition care in a broad sense. It includes the management of nutrition care dietitians as they provide medical nutrition therapy to a patient; it also includes preparation to become an assistant director in a food and nutrition service in either medical nutrition therapy or food service management. Finally, it also means preparation to become the director of the food and nutrition department in medical centers or in school food service. The emphasis of the curriculum in management is to effectively use the resources available to achieve the mission of the employing organization.

This degree is a Web-based, online curriculum in which all courses are offered via the Internet. No more than two classes are offered each quarter. Although the student is able to individually customize the curriculum to some degree, s/he is expected to keep up to date with the discussion and projects assigned in each class. Courses must be completed by the end of the quarter specified.

#### Mission of the online degree

The mission of the Master of Science degree in nutrition care management is to prepare leadership personnel in nutrition care and multidepartmental management. Graduates will exhibit a Christian managerial style in their approach to achieving objectives and dealing with customers and employees; as well as in applying ethical principles to all aspects of life. Graduates will be proactive scholars who strive to meet the needs of our dynamic society by becoming creative thinkers who apply and use research to advance the practice of nutrition and dietetics, and by developing and implementing public policy.

The Master of Science degree in nutrition care management will be offered via distance education using Blackboard, an Internet-based learning system. Students will not be required to take any courses on campus during the two years of the online program. The 48-unit degree includes courses offered by the Department of Nutrition and Dietetics in the School of Allied Health Professions, by the M.B.A. degree program in the School of Public Health, and by the School of Religion.

## Goals of the online degree

The goals of the Master of Science degree in nutrition care management are to:

- Further the education and training of registered dietitians who are advanced-level practitioners and/or managers, as well as potential leaders in the profession; and who are willing to serve not only the Seventh-day Adventist health care community, but also the greater community by promoting optimum health and nutrition.
- Graduate trained professionals who are effective managers, competent servant leaders, educators, and researchers thoroughly prepared to contribute to the profession's body of knowledge through publications, professional presentations, and advocacy.

## Student learning outcomes

The learning outcomes for the Master of Science degree in nutrition care management include preparing the registered dietitian to:

1. Demonstrate in-depth knowledge of nutrition and dietetics, and to serve the needs of the global community at advanced practice levels.
2. Apply a Christian approach to all aspects of ethics, management, and leadership within his/her area of responsibility and in his/her personal life.
3. Exhibit an investigative spirit, and to continue to attain knowledge and develop professional competency for advanced-level practice.
4. Use current issues and environmental information from his/her system's external and internal environment to influence and/or adapt to changes that will impact the organization and/or public policy.
5. Apply research, statistical methods, and current technology to evaluate and improve his/her areas of responsibility.
6. Engage in program development to serve the needs of the global community.
7. Contribute to the profession's body of knowledge by publishing or giving oral presentations of cogent research results.
8. Develop executive management and leadership skills to achieve personal and corporate goals.

## Admission

The online degree is open to registered dietitians who have had at least two years of experience in the profession and who are passionate about their role as a potential manager in the profession. To be considered for acceptance, the applicant must present:

- A transcript indicating completion of the academic requirements for registration as a dietitian
- A G.P.A. of 3.0 or above
- A letter of application
- A letter of recommendation from his/her supervisor and/or department head
- the name of a mentor who will be a member of the team supporting the student through the educational experience. Other members of the team include the individual student, the academic faculty, and the student's faculty advisor.

## Teaching methodology

The Master of Science degree in nutrition care management will be offered via an online format utilizing Blackboard 7.1 Community and Learning System. The nutrition and dietetics faculty have approved an online syllabus template and Blackboard set-up template to ensure that certain course management strategies are in place and consistent throughout the course of study. Prior to beginning the degree, students will complete an online course that teaches the skills necessary to operate effectively in this online learning environment. Students will be expected to attend a two-day, on-campus orientation prior to beginning their course work. The orientation will include:

### Day 1 - On-site orientation

#### *Morning*

- Introduction of faculty and advisor
- Introduction to Loma Linda University's mission and fundamental values
- Orientation to the Master of Science degree in nutrition care management—including mission, student learning expectations, and learning outcomes
- Introduction to Blackboard—including its various components, such as discussion boards, posting, and accessing course information and assignments
- Practice downloading and posting information from Blackboard
- Discussion of log-in issues

#### *Afternoon*

- Netiquette
- Online library tutorial
- Tour of Loma Linda University Medical Center
- Drayson Center
- Seventh-day Adventists and their heritage

### Day 2 - On-site orientation

#### *Morning*

- Technology strategies and tips for communication and successful participation
- Webcam and Yahoo chat
- Registration
- Contact information for University Records and Financial Aid
- Expectations for mentor
- Yahoo and Google meeting space

#### Autumn Quarter

Units

AHCJ 550	Organizational Theory	3.0
AHCJ 566	Theoretical Foundations of Leadership	3.0
Totals		6.0

<b>Winter Quarter</b>		Units
AHCJ 548	Human Resource Management in the Health Care Environment	3.0
DTCS 554	Advanced Medical Nutrition Therapy	3.0
Totals		6.0

<b>Spring Quarter</b>		Units
AHCJ 595	Research and Statistics Concepts and Methods: Intermediate	3.0
RELT 563	Health Care, Humanity, and God	3.0
Totals		6.0

<b>Second Year, Summer Quarter</b>		Units
AHCJ 586	Curricula Planning in Health Sciences	3.0
HADM 604	Health Systems Strategic Planning	3.0
Totals		6.0

<b>Autumn Quarter</b>		Units
AHCJ 549	Professional Responsibility in Allied Health Professions	3.0
DTCS 525	Nutrition Care Marketing	3.0
Totals		6.0

<b>Winter Quarter</b>		Units
DTCS 536	Health Care Financial Management	3.0
HADM 601	Health Systems-Operations Management	3.0
Totals		6.0

<b>Spring Quarter</b>		Units
DTCS 696	Nutrition Care-Management Project	6.0
Totals		6.0

<b>Third Year, Summer Quarter</b>		Units
DTCS 505	Graduate Seminar--Portfolio	3.0
DTCS 579	Capstone Course in Nutrition Care Management	3.0
Totals		6.0
<b>Overall Totals</b>		<b>48.0</b>

## Occupational Therapy – AH

M.O.T., O.T.D.

LIANE H. HEWITT, Department Chair; Program Director for Entry-Level Master of Occupational Therapy and for Postprofessional Master of Occupational Therapy

JUDITH A. PALLADINO, Academic Coordinator for Fieldwork Education, Occupational Therapy Program

HEATHER A. JAVAHERIAN-DYSINGER, Program Director for Doctor of Occupational Therapy Program

### FACULTY

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Arezou Salamat

Ernest R. Schwab

Diana Su-Erickson

Heather J. Thomas

Donna G. Thorpe

Christine M. Wietlisbach

Grenith J. Zimmerman

The occupational therapist works with persons who find it difficult to cope with psychological or physiological dysfunction.

The primary concern of the therapist is to stimulate those changes in behavior patterns that will increase the patient's personal independence and ability to work within his/her cultural and personal milieu. To accomplish this goal, the occupational therapist evaluates the patient; sets up treatment goals;

and works together with the occupational therapy assistant in selecting tasks from the gamut of normal daily self-care activities, using them to assist the patient in gaining independent living skills regardless of disability or handicap.

Essential to the role of occupational therapy is an interest in the behavioral sciences and a concern for the individual's need to find proper adjustments to life's circumstances. A desire to teach and a background or interest in medical science are beneficial. Those inclined to mechanical or scientific techniques are suited to helping patients develop their capacities for employment. Others find that they can use their interests in creative arts, crafts, music, and teaching to work with disabled homemakers, children, and retired persons.

## **OPPORTUNITIES**

Occupational therapists practice in general hospitals, rehabilitation centers, pediatric or psychiatric clinics, schools, skilled nursing facilities, home care, and outpatient community-centered programs (including hand rehabilitation, work evaluation, and adult day care facilities). Occupational therapy professionals have a wide choice of positions (using varied therapeutic skills with individuals of varying age and disability) and opportunities for advancement.

## **ACCREDITATION**

The Occupational Therapy Program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), P.O. Box 31220, Bethesda, MD 20824-1220; telephone: 301/652-2682; Web site <aota.org>.

## **PROFESSIONAL REGISTRATION**

Upon satisfactory completion of the occupational therapy entry-level M.O.T. degree—including completion of Level II fieldwork within twenty-four months following completion of academic preparation, and upon recommendation of the faculty—the graduate is eligible to take the national certification examination administered by the National Board for Certification for Occupational Therapy (NBCOT). The board offers computerized examinations on demand throughout the year. After successful completion of this examination, the individual will be an occupational therapist, registered (OTR).

Many states require licensure in order to practice; however, state licenses are based on the results of the NBCOT certification examination. The American Occupational Therapy Association provides recognition essential to the practice of occupational therapy in the United States and most foreign countries. Information about qualifying examinations can be obtained at the office of the department chair.

When the graduate applies to write the certification examination with NBCOT, s/he will be asked to answer questions related to the topic of felonies. Felony convictions may affect a candidate's ability to sit for the national certification examination or obtain state licensure. For further information on these limitations, contact NBCOT at 12 South Summit Avenue, Suite 100, Gaithersburg, MD 20877-4150; telephone: 301/990-7979; Web site: <nbcot.org>. Graduates practicing in the state of California must acquire licensure from the California Board of Occupational Therapy. For further information, contact CBOT at 916/263-2294; email: <cbot@dca.ca.gov>. The office address is 2005 Evergreen Street, Suite 2050, Sacramento, CA 95815-3831.

## **PROFESSIONAL ASSOCIATIONS**

Students are eligible for membership in the American Occupational Therapy Association and Occupational Therapy Association of California—two organizations that foster development and improvement of service and education. Students are encouraged to become members, read the journal,

and attend local professional meetings. The national association address is: American Occupational Therapy Association, P. O. Box 31220, Bethesda, MD 20824-1220. Web site: <aota.org>; telephone: 800/729-2682. The state association address is: Occupational Therapy Association of California, P.O. Box 276567, Sacramento, CA 95827-6567. Web site: <otaonline.org>; telephone: 888/686-3225.

## **OCCUPATIONAL THERAPY—MASTER OF OCCUPATIONAL THERAPY (ENTRY LEVEL)**

The Occupational Therapy Program begins with the Summer Quarter. Admission to the entry-level Master of Occupational Therapy degree junior and senior years at this University is based on presentation of credit for two academic years of prerequisites earned at an accredited college or university, as listed under Admission—Master of Occupational Therapy (Entry Level).

Students who already have a previous baccalaureate degree in another major may apply under option two, based on specific prerequisites listed under Admission—Option Two.

The curriculum is built on three levels of learning: foundation, practice, and professional. These levels of learning represent curriculum content that supports the student's progressive growth and knowledge. Initially, students focus primarily on foundation knowledge courses in basic sciences combined with concepts of wholeness and looking at their own—as well as others'—occupational worlds. Next, the curriculum emphasizes student learning of core occupational therapy practice. Subsequently, the curriculum provides opportunities for the student to develop professional competency in research and in program development/evaluation; and to envision how the occupational therapy profession enhances health care trends. Classroom instruction is integrated with supervised fieldwork practice at approved community programs.

### **CPR certification**

Students are required to have current cardiopulmonary resuscitation (CPR) certification (adult and child) for all scheduled clinical experience. All CPR certifications must be completed at a health care provider level and accredited through the American Heart Association. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

### **Immunizations**

Students are required to have a current tuberculosis test; MMR, TDAP, Hepatitis B series, and varicella for all scheduled fieldwork experience.

### **Clinical experience**

For the two, three-month fieldwork experiences (Winter Quarter of the second year and Winter Quarter of the third year), the student is assigned for experience at approved hospitals and in community health care programs. Assignments cannot always be arranged in the immediate community because of limited facilities; students are responsible for their own transportation. Level II fieldwork must be completed within twenty-four months of the didactic course work. Students must also clear fingerprinting and background checks prior to beginning fieldwork.

### **Program outcomes**

Upon completion of the Master of Occupational Therapy degree, students will:

1. Articulate the history of the profession, the scope and role of occupational therapy within health care, and its contributions to the quality of life.

2. Engage in occupational therapy practice to promote clients' participation in society.
3. Engage in global critical thinking to envision future possibilities for personal, professional, and societal potential.
4. Understand how lifestyle impacts health and consider person-environment factors in establishing interventions in the clinical and community settings.
5. Use research literature to inform clinical decisions and engage in research that contributes to best practice.
6. Integrate Christ-centered values in personal living and professional practice.

## Admission

### Option One: Bachelor of Science (B.S.) and Master of Occupational Therapy (M.O.T.) Track

*Note: As of the school year beginning June 2013, Option One will no longer be offered; all students will be required to enter the M.O.T. degree program with a prior bachelor's degree.*

Option one is for individuals who do not have an earned bachelor's degree from an accredited college or university. Graduates will receive a Bachelor of Science degree in health science and a Master of Occupational Therapy degree.

To be eligible for admission, the applicant must have completed a minimum of 96 quarter units at an accredited college or university.

Note: Grades of C- are not transferable for credit.

### Prerequisite

Humanities—20 units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language, art/music appreciation or history, applied art/music)

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

Human anatomy and physiology with laboratory, complete sequence

Select one additional content area from chemistry, physics, or physical science

Two years high school mathematics with grades of C or better, or intermediate algebra

Sociology

General psychology

Human growth and development

English composition, complete sequence

Speech

Personal health or nutrition

Two physical activity courses

Electives to meet the minimum total requirement: 96 quarter units

### Work experience

A minimum of forty hours of documented observation in occupational therapy settings is required before application will be considered for admission.

### Option Two: Master of Occupational Therapy (M.O.T.) Track

Option two is for individuals who have earned a baccalaureate degree in another major from an accredited college or university. Graduates will receive a Master of Occupational Therapy degree ONLY.

**Prerequisite**

The applicant must complete the following subject requirements at an accredited college or university:

Human anatomy and physiology, complete sequence

Human growth and development (developmental psychology)

*Note: By 2013, the following prerequisites will be required in addition to those indicated above:*

Statistics

Medical terminology

**Work experience**

A minimum of forty hours of documented observation in occupational therapy settings is required before application will be considered for admission.

**Program of Instruction****(Option One and Option Two)****Junior Year, Summer Quarter****BS/MOT Prior BS**

AHCJ 412	Anatomy	9.0	9.0
OCTH 301	Introduction to Occupational Therapy	2.0	2.0
OCTH 305	Terminology for Occupational Therapy Practice	2.0	2.0
OCTH 331	Functional Kinesiology	3.0	3.0
Totals		16.0	16.0

**Autumn Quarter****BS/MOT Prior BS**

AHCJ 305	Infectious Disease and the Health Care Provider	1.0	1.0
AHCJ 404	Pharmacology	1.0	1.0
OCTH 309	Human Occupation across the Lifespan	5.0	5.0
OCTH 314	Task Analysis	2.0	2.0
OCTH 321	Intervention Techniques and Strategies I	2.0	2.0
OCTH 341	Functional Neuroscience	3.0	3.0
RELT 423	Loma Linda Perspectives	2.0	
Totals		16.0	14.0

**Winter Quarter****BS/MOT Prior BS**

AHCJ 402	Pathology I	4.0	4.0
OCTH 306	Group Dynamics and Intervention	2.0	2.0
OCTH 315	Therapeutic Media	2.0	2.0
OCTH 317	Occupational Therapy Practicum I	2.0	2.0
OCTH 451	Disorders of Human Performance I	5.0	5.0
RELE 457	Christian Ethics and Health Care	3.0	2.0
Totals		18.0	17.0

**Spring Quarter****BS/MOT Prior BS**

AHCJ 403	Pathology II	3.0	3.0
AHCJ 471	Statistics and Research for Health Professionals I	3.0	3.0
OCTH 316	Design and Technology	2.0	2.0
OCTH 318	Occupational Therapy Practicum II	2.0	2.0
OCTH 442	Case Analysis, Reasoning, and Management I	2.0	2.0
OCTH 452	Disorders of Human Performance II	5.0	5.0
Totals		17.0	17.0

**Senior Year, Summer Quarter****BS/MOT Prior BS**

AHCJ 472	Statistics and Research for Health Professionals II	3.0	3.0
OCTH 417	Occupational Therapy Practicum III	2.0	2.0
OCTH 431	Intervention Techniques and Strategies II	3.0	3.0
OCTH 443	Case Analysis, Reasoning, and Management II	2.0	2.0
OCTH 453	Disorders of Human Performance III	4.0	4.0
Totals		14.0	14.0

**Autumn Quarter****BS/MOT Prior BS**

OCTH 435	Upper-Extremity Rehabilitation and Splinting	3.0	3.0
OCTH 455	Case Analysis, Reasoning, and Management III	3.0	3.0
OCTH 456	Community Practice	4.0	2.0
OCTH 526	Business Topics in Health Care	2.0	2.0
OCTH 541	Current Trends in Occupational Therapy Practice I	3.0	3.0
RELT 416	God and Human Suffering	3.0	
Totals		18.0	13.0

**Winter Quarter****BS/MOT Prior BS**

OCTH 491	Fieldwork Experience I	12.0	12.0
Totals		12.0	12.0

**Graduate Year, Spring Quarter****BS/MOT Prior BS**

OCTH 542	Current Trends in Occupational Therapy Practice II	3.0	3.0
OCTH 544	Advanced Occupational Therapy History	3.0	3.0
OCTH 563	Professional Competency Development I	1.0	1.0
OCTH 571	Research I	3.0	3.0
Totals		10.0	10.0

**Summer Quarter****BS/MOT Prior BS**

____	Elective	Graduate elective	3.0	3.0
OCTH 551	Occupation and Wellness		3.0	3.0
OCTH 561	Program Development/Design I		3.0	3.0
OCTH 564	Professional Competency Development II		1.0	1.0
OCTH 572	Research II		2.0	2.0
Totals			12.0	12.0

Autumn Quarter		BS/MOT	Prior BS
OCTH 552	Professional Transition	3.0	3.0
OCTH 562	Program Development/Design II	3.0	3.0
OCTH 565	Professional Competency Development III	1.0	1.0
OCTH 573	Research III	2.0	2.0
RELR 536	Spirituality and Everyday Life	3.0	3.0
Totals		12.0	12.0

Winter Quarter		BS/MOT	Prior BS
OCTH 591	Fieldwork Experience II	12.0	12.0
Totals		12.0	12.0
<b>Overall Totals</b>		<b>157.0</b>	<b>149.0</b>

A minimum grade of C with an overall G.P.A. of 2.50 is required for all undergraduate courses, and an overall G.P.A. of 3.00 is required in graduate courses.

The program of instruction is full time for each quarter. Academic credit of less than 12 units per quarter does not indicate less than full-time work.

## OCCUPATIONAL THERAPY—MASTER OF OCCUPATIONAL THERAPY (POSTPROFESSIONAL)

### The program

The postprofessional master's degree curriculum is designed for the occupational therapist with an entry-level baccalaureate degree in occupational therapy who wishes to pursue advanced studies in the profession.

### Admission

To be eligible for admission, the applicant must have earned a bachelor's degree or postbaccalaureate certificate in occupational therapy from an accredited program, with a minimum G.P.A. of 3.0. The applicant must also be certified by the National Board for Certification in Occupational Therapy (NBCOT). The applicant's recommendations, interview, personal statement, and work experience are also considered in the admissions screening process.

International students with no NBCOT certification must have graduated from a WFOT-recognized university and complete the required fieldwork experience for their degree. TOEFL score of 550 (paper based) or 80 (Internet based) is required for students speaking English as a second language.

Foreign transcript reports must be submitted from Association of American College Registrars and Admissions Officers (AACRAO), Education Credentials Evaluators (ECE), or World Education Services (WES).

### Program outcomes

Upon completion of the postprofessional master's degree curriculum, students will:

1. Become leaders in occupational therapy, occupying a broad range of roles in education, clinical practice, or administration within a variety of clinical settings.
2. Demonstrate advanced specialization and professional skills.

3. Demonstrate the skills to respond to the changing needs of society.
4. Integrate Christ-centered values in personal living and professional practice.

### Prerequisite

Baccalaureate degree in occupational therapy from an accredited institution

### Program of Instruction

The curriculum is five quarters in length for full-time students, or may be tailored for part-time students.

Major		Units
OCTH 526	Business Topics in Health Care	3.0
OCTH 542	Current Trends in Occupational Therapy Practice II	3.0
OCTH 544	Advanced Occupational Therapy History	3.0
OCTH 551	Occupation and Wellness	3.0
OCTH 552	Professional Transition	3.0
OCTH 563	Professional Competency Development I	1.0
OCTH 564	Professional Competency Development II	1.0
OCTH 565	Professional Competency Development III	1.0
Totals		18.0

Cognates		Units
AHCJ 509	Teaching and Learning Styles	3.0
AHCJ 511	Biostatistics I	3.0
AHCJ 591	Research I	3.0
AHCJ 592	Research II	3.0
REL_ 5__	Graduate-level Religion	3.0
Totals		15.0

Electives		Units
___ __	Elective	12.0
Totals		12.0
<b>Overall Totals</b>		<b>45.0</b>

## DOCTOR OF OCCUPATIONAL THERAPY—(O.T.D.)

### The program

The Doctor of Occupational Therapy degree curriculum provides occupational therapists an opportunity to further their education through its flexible online format. The online community fosters learning and professional growth through creative learning experiences, critical reflections, and discussions.

Completion of the doctoral degree takes approximately two-and-a-half years, in accordance with the professional doctorate accrediting standards of the Western Association of Schools and Colleges. The course work includes emphasis on spirituality, diversity, critical reasoning, advocacy, participation,

education, and research. The capstone project is a professional rotation designed by the student, allowing him/her to creatively explore new areas of practice and to engage in innovative research and programming.

### Program outcomes

Upon completion of the doctoral degree curriculum, students will:

1. Articulate and serve the community by promoting health and the integration of mind, body, and spirit.
2. Contribute to the profession's body of knowledge through written dissemination of research and oral presentations.
3. Advocate for the profession, client, and those in need through participation in community and professional organizations.
4. Commit to lifelong learning through disciplined advancement of knowledge and participation in professional activities.

### Admission

To be eligible for admission, the applicant must have earned a master's degree in occupational therapy or another related field with a minimum G.P.A. of 3.0. Applicants may have a bachelor's degree in occupational therapy and a master's degree in occupational therapy or another related field, or they may have a bachelor's degree in a related field and a master's degree in occupational therapy. Applicants in the United States must be certified by the National Board of Certification in Occupational Therapy (NBCOT). The applicant's recommendations, phone interview, personal statement, and work experience are also considered in the admissions screening process.

Applicants from other countries must submit verification of licensure and certification in occupational therapy. Foreign transcript reports must be submitted from either Association of American College Registrars and Admissions Officers (AACRAO) or Education Credentials Evaluators (ECE). Test of English as a Foreign Language (TOEFL) scores must be at least 550 (paper based) or at least 80 (Internet based).

### Prerequisite

Master's degree in occupational therapy or a related field from an accredited institution and six months of professional practice

Major		Units
OCTH 600	Occupational Science	3.0
OCTH 601	Spirit of Diverse Abilities I	3.0
OCTH 602	Spirit of Diverse Abilities II	3.0
OCTH 604	Health, Society, and Participation	3.0
OCTH 605	Education in Occupational Therapy	3.0
OCTH 606	Leadership in Occupational Therapy	3.0
OCTH 611	Research I: Proposal Writing	4.0
OCTH 614	Research and Professional Rotation II	5.0
OCTH 621	Professional Rotation Planning	2.0
OCTH 622	Professional Rotation Proposal	1.0

OCTH 623	Professional Rotation I	4.0
OCTH 625	Professional Rotation III	4.0
OCTH 627	Professional Publication and Dissemination	5.0
Totals		43.0

**Cognates**

Units

AHCJ 605	Critical Analysis of Scientific Literature	3.0
HPRO 509	Principles of Health Behavior	3.0
RELE 524	Bioethics and Society	3.0
RELR 535	Spirituality and Mental Health	3.0
Totals		12.0
<b>Overall Totals</b>		<b>55.0</b>

## Orthotics and Prosthetics—AH

M.S. (entry level, postprofessional)

EDD ASHLEY, Chair, Department of Physical Therapy

HOWARD SULZLE, Associate Chair, Department of Physical Therapy

JOHANNES SCHAEPPER, Program Director for Entry-Level Master of Science in Orthotics and Prosthetics

EVERETT B. LOHMAN III, Program Director for Postprofessional Master of Science in Orthotics and Prosthetics

### FACULTY

Khaled Bahjri

Scott Bennie

Lee Berk

Bruce Bradley

Clyde Cassimy

Michael Davidson

Michael DeLeon

Richard Fite

Travis Fogel

Britt Guerre-Aguilar

Heather Javaherian-Dysinger

Teresa Joseph

Carlo Lira

Everett Lohman

Bradford Martin

Nellie Padilla

Jerrold Petrofsky

Hans Schaepper

Louise Schneider

Soraj Sorajjkool

Antonio Valenzuela

Colleen Wendtland

Anna Wong

Heather Worden

## ORTHOTICS AND PROSTHETICS—M.S.

### The program

The entry-level Master of Science degree in orthotics and prosthetics (EL-MSOP) degree is for individuals who wish to enter the profession of orthotics and prosthetics at the 2012 NCOPE-mandated level. The professional course work at this University is ten quarters, which includes a 500-hour clinical affiliation supervised by the professional development committee.

The professional curriculum for the entry-level Master of Science degree in orthotics and prosthetics is designed to provide the student with the knowledge, behaviors, and skills required for entry into the clinical practice of orthotics and prosthetics according to NCOPE's published 2010 standards of the profession.

### **Professional association**

Students and graduates are eligible for membership in the American Academy of Orthotics and Prosthetics (AAOP). The objective of the association is to foster development and improvement of service and education. This organization grants student membership at a nominal cost to students of approved schools. The student is required to become a member of this association while in the program and is encouraged to read the *Journal of Orthotics and Prosthetics* (JPO) and attend AAOP-sponsored or -approved local or national meetings.

### **Professional practice requirements**

Satisfactory completion of the EL-MSOP curriculum requirements qualifies the student to enter an NCOPE-accredited residency site of his/her choice. After completing a twelve-month prosthetic, a twelve-month orthotic, or a twenty-four-month combined ortho-prosthetic residency, the resident then is eligible to sit for the certification examination offered by the American Board of Certification in Orthotics and Prosthetics (ABC). Passing the ABC examination will earn a certification in orthotics (CO), a certification in prosthetics (CP), or a dual certification as a prosthetist-orthotist (CPO). In addition to the certification, depending on the state where the certified practitioner intends to practice, it may be necessary to pass a state licensure examination in order to practice the profession.

### **Accreditation**

Accreditation for the entry-level Master of Science degree in orthotics and prosthetics is being sought from the National Commission on Orthotic and Prosthetic Education (NCOPE), 330 John Carlyle Street, Suite 200, Alexandria, VA 22314; telephone 703/836-7114. An Application for Candidacy Status, which is the formal application required in the pre-accreditation stage, has been submitted. However, submission of this document does not assure that the program will be granted candidacy for accreditation status; nor does it assure that the program will be granted accreditation. Forthcoming this candidacy status, the first cohort will begin at the end of September 2011.

### **Clinical experience**

Supervised clinical experience is obtained in a variety of settings during the program through clinical rotations and weekly grand rounds. These ongoing weekly clinical rotations are an essential part of a student's academic and professional requirements and prepare the student for the 500 supervised clinical practice hours required for completion of the EL-MSOP curriculum.

All clinical assignments will be made by the academic coordinator of clinical education or a designee. Because of the limited number of local facilities available, assignments cannot be made on the basis of the student's family/marital status or personal preference. Although the department makes an effort to accommodate the student's preference, the student agrees to accept the clinical assignments made by the department at any of the affiliated facilities.

## Admission requirements

To be eligible to pursue the entry-level Master of Science degree in orthotics and prosthetics, the applicant must have completed a minimum of 64 semester or 96 quarter credit units at a regionally accredited college or university and have a minimum G.P.A. of 3.0 in both science and nonscience courses.

It is also advisable for the student to complete eighty hours of volunteer field experience at an orthotics and prosthetics facility of his or her choice, and to obtain a letter of recommendation from the facility owner or clinical supervisor.

The following prerequisites and general education courses will provide the knowledge, behavior, and skills required of students in a professional curriculum in the orthotics and prosthetics program.

The minimum subject admission requirements are listed below.

Note: Grades of C- and below are not transferable for credit.

### Domain 1: Religion and Humanities (24 quarter/16 semester units, minimum)

**Humanities** (14 quarter/10 semester units minimum)

Humanities to include one history class, one philosophy class, and one class from a third area.

Choose from:

Civilization/History

Fine arts

Literature

Modern language

Philosophy

Performing/Visual arts (not to exceed 4 quarter units)

Additional humanities courses in the EL-MSOP curriculum can meet the Humanities requirement.

#### **Religion**

Religion is required only if a student attended a Seventh-day Adventist college or university for a portion of his/her prerequisites. Four quarters of religion per year. A maximum of 12 quarter units may apply toward Domain I.

### Domain 2: Scientific Inquiry and Analysis (24 quarter/16 semester units, minimum)

Encompasses both the natural and social sciences. Twelve quarter or eight semester credits are required.

**Natural Sciences**—Required

Human anatomy and physiology with laboratory (complete sequence)

Chemistry with laboratory (complete sequence)

Physics with laboratory

Statistics

Additional courses in the EL-MSOP curriculum can fulfill Domain 2: Natural Sciences requirements.

**Social Sciences**—Required

Human diversity

General psychology

Additional courses in the EL-MSOP curriculum can fulfill Domain 2: Social Sciences requirements.

**Domain 3: Communication (9 quarter/6 semester units, minimum)****English**

Complete sequence in English composition that meets the baccalaureate degree requirements

One course in basic communication skills (speech)

**Domain 4: Health and Wellness (3 quarter/2 semester units, minimum)**

Two activity courses in physical education

Additional courses in the EL-MSOP curriculum can fulfill Domain 4: Health and Wellness requirements.

**Domain 5: Electives**

Courses in Domain 5: Electives can be used to meet the minimum number of units required for admission.

**TOEFL score**

A TOEFL score of 213 if computer generated or 80 if Internet based is required for foreign students. All foreign transcripts, including high school, must be submitted to an approved evaluation service. The list of the three approved services can be obtained from the School of Allied Health Professions admissions office. Results of the evaluation are to be sent to this University directly from the evaluation center. Official foreign transcripts must be sent to the School of Allied Health Professions, directly from school to school, at the time of application.

**Student learning outcomes**

In addition to the institutional student learning outcomes, the program has selected the following program learning outcomes:

1. Discovery. Students will demonstrate a commitment to research and discovery.
2. Applied science. Student will apply basic science concepts to orthotic and prosthetic care.
3. Clinical excellence. Students will provide advanced patient-specific orthotic and prosthetic care.
4. Medical justification/patient advocacy. Students will demonstrate the ability to serve as patient advocates by obtaining medically necessary services and equipment.

**Junior Year, Autumn Quarter**

Units

AHCJ 323	Economics and Business Management	3.0
AHCJ 362	Anatomy	3.0
ORPR 301	Orthotics & Prosthetics Laboratory and Technical Skills	3.0
ORPR 305	Orthotic Fitting Techniques	3.0
ORPR 310	Patient Management, Assessment, and Documentation	3.0
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1.0
RELR 427	Crisis Counseling	2.0
Totals		18.0

**Winter Quarter**

Units

ORPR 315	Pedorthics	3.0
ORPR 320	Biomechanical Evaluation	3.0
ORPR 325	Medical Terminology	3.0
ORPR 405	Gait Analysis	3.0
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1.0
RELT 416	God and Human Suffering	2.0
Totals		15.0

**Spring Quarter**

Units

AHCJ 320	ADL and Assistive Devices	3.0
AHCJ 351	Statistics for the Health Professions	3.0
DTCS 301	Human Nutrition	3.0
ORPR 330	Lower Extremity Orthotics I	3.0
ORPR 340	Lower Extremity Prosthetics I	3.0
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1.0
Totals		16.0

**Senior Year, Summer Quarter**

Units

AHCJ 402	Pathology I	3.0
AHCJ 461	Research Methods	3.0
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1.0
ORPR 415	Lower Extremity Orthotics II	3.0
ORPR 420	Lower Extremity Prosthetics II	3.0
ORPR 425	CAD/CAM Technologies	3.0
RELE 455	Christian Understanding of Sexuality	2.0
Totals		18.0

**Autumn Quarter**

Units

AHCJ 514	Kinesiology: Motor Control and Learning	3.0
AHCJ 516	Clinical Imaging	3.0
AHCJ 544	Advanced Functional Neuroanatomy	3.0
AHCJ 569	Computers and Electronics for Clinicians	3.0
ORPR 345	Spinal Orthotics	3.0
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1.0
Totals		16.0

**Winter Quarter**

Units

ORPR 410	Orthotic and Prosthetic Clinical Rotation	1.0
ORPR 430	Upper Extremity Orthotics	3.0
ORPR 435	Upper Extremity Prosthetics	3.0
ORPR 491	Research I	3.0
ORPR 504	Materials Science in Orthotics and Prosthetics	3.0
RELE 457	Christian Ethics and Health Care	2.0
Totals		15.0

**Graduate Year, Spring Quarter**

Units

AHCJ 315	Psychosocial Aspects of Health Care	3.0
AHCJ 422	History of Disability	3.0
ORPR 440	Bionics and Cyborg Technology	3.0
ORPR 506	Advanced Specialty Tracks in Orthotics and Prosthetics	3.0
ORPR 510	Advanced Clinical Rotations	1.0
ORPR 520	Lower Extremity Prosthetics III	3.0
Totals		16.0

**Summer Quarter**

Units

AHCJ 575	Couples, Families, and Disabilities	3.0
ORPR 510	Advanced Clinical Rotations	1.0
ORPR 522	Self-Care Portfolio and Community Outreach	2.0
ORPR 538	Biomechanics	3.0
ORPR 592	Research II	3.0
PHTH 630	Kinetics of the Human Body: Physics-Based Kinesiology	3.0
Totals		15.0

**Autumn Quarter**

Units

AHCJ 507	Pharmacology in Rehabilitation	3.0
AHCJ 545	Legal and Ethical Issues in the Health Professions	3.0
ORPR 510	Advanced Clinical Rotations	1.0
ORPR 525	Lower Extremity Orthotics III	3.0
ORPR 540	Rehabilitative Care in Developing Nations	3.0
RELR 575	Art of Integrative Care	3.0
Totals		16.0

**Winter Quarter**

Units

ORPR 514	Clinical Affiliation	8.0
Totals		8.0
<b>Overall Totals</b>		<b>153.0</b>

## ORTHOTICS AND PROTHETICS—M.S. (POSTPROFESSIONAL)

### The program

The postprofessional Master of Science degree in orthotics and prosthetics is designed for individuals with a baccalaureate degree in orthotics and prosthetics, or a baccalaureate degree in any major and an orthotics or prosthetics certificate degree from an accredited college or university, who wish to pursue advanced studies in their profession.

### Admission

To be eligible for admission, the applicant must have earned a baccalaureate degree (or higher) in orthotics and prosthetics, or a baccalaureate degree in any major and an orthotics or prosthetics certificate degree from an accredited National Commission on Orthotic and Prosthetic Education (NCOPE) college or university. There is no GRE requirement for acceptance into this program.

### TOEFL score

A TOEFL score of 213 if computer generated or 80 if Internet based is required for foreign students. All foreign transcripts must be submitted to an approved evaluation service. The list of the three approved services can be obtained from the School of Allied Health Professions admissions office. Results of the evaluation are to be sent to this University directly from the evaluation center. Official foreign transcripts must be sent to the School of Allied Health Professions, directly from school to school, at the time of application.

### Practice credentials

The educational requirements for orthotic and prosthetic practitioners has progressively increased since the American Board of Certification in Orthotics and Prosthetics (ABC) originally set the standards for the unique balance of technical skills, rehabilitation techniques, and medical engineering in 1948. The National Commission on Orthotic and Prosthetic Education (NCOPE), the professional accrediting body, has set a minimum requirement for educational and experiential guidelines for the provision of orthotic and prosthetic care. Several states have licensing laws regarding the provision of orthotic and prosthetic care. Credentials are evaluated based on the applicable entry-level education or postbaccalaureate certification. Postprofessional education cannot be used for this purpose.

### Learning outcomes

In addition to the stated institutional learning outcomes, the postprofessional Master of Science degree in orthotics and prosthetics student is expected to meet the following programmatic learning outcomes:

- Outcome 1** Discovery. Students will demonstrate a commitment to discovery.
- Outcome 2** Science. Students will use basic science knowledge to advance orthotics and prosthetics practice.
- Outcome 3** Global outreach. Students will provide orthotic and prosthetic care to the larger world population.
- Outcome 4** Clinical excellence. Students will provide advanced patient-specific orthotic and prosthetic care.

**Outcome 5** Education excellence. Students will demonstrate a commitment to the promotion of the profession through excellence in teaching.

**Outcome 6** Administration. Students will demonstrate a commitment to the promotion of the profession through excellence in administration.

Required		Units
AHCJ 509	Teaching and Learning Styles	3.0
AHCJ 511	Biostatistics I	3.0
AHCJ 519	Graduate Wholeness Portfolio	1.0
AHCJ 535	Advanced Physiology II: Exercise and Thermoregulation	3.0
AHCJ 544	Advanced Functional Neuroanatomy	3.0
AHCJ 545	Legal and Ethical Issues in the Health Professions	3.0
AHCJ 591	Research I	3.0
AHCJ 592	Research II	3.0
AHCJ 696	Research Rotations	2.0
ORPR 504	Materials Science in Orthotics and Prosthetics	3.0
ORPR 505	Current Issues in Orthotics and Prosthetics	3.0
ORPR 506	Advanced Specialty Tracks in Orthotics and Prosthetics	3.0
PHTH 515	Topics in Rehabilitation	3.0
PHTH 529	Pathokinesiology of Gait	3.0
PHTH 630	Kinetics of the Human Body: Physics-Based Kinesiology	3.0
RELR 575	Art of Integrative Care	3.0
		Totals
		45.0
		<b>Overall Totals</b>
		<b>45.0</b>

## Physical Therapist Assistant—AH

A.S.

JEANNINE STUART MENDES, Program Director

CAROL J. APPLETON, Assistant Program Director; Academic Coordinator of Clinical Education

### FACULTY

Carol J. Appleton

Bruce D. Bradley

Lawrence E. Chinnock

Henry Garcia

Susan M. Huffaker

Jeannine Stuart Mendes

Steven D. Newton

Ronald M. Rea

The physical therapist assistant is a skilled paraprofessional health care worker who, under the direction and supervision of a physical therapist, implements selected components of the patient's treatment program. The extent to which the physical therapist assistant is involved in treatment depends upon the supervising therapist.

A planned patient-care program is carried out by the assistant, following established procedures. Duties of the physical therapist assistant include: training patients in exercises and activities of normal daily living; performing treatment interventions; utilizing special equipment; assisting in performing tests, evaluations, and complex treatment procedures; and observing and reporting the patient's responses.

The rehabilitation team may include the occupational therapist, nurse, speech and hearing therapist, respiratory therapist, recreational therapist, physician, social worker, chaplain, vocational counselor, dietitian, and psychologist. This team has as its objective the optimum functional restoration and rehabilitation of patients disabled by illness or injury.

### OPPORTUNITIES

Physical therapy offers a career for men and women who are interested in medical science and who enjoy working with people. Physical Therapist Assistant Program graduates have a wide choice of opportunities with medical groups, hospitals, rehabilitation centers, outpatient clinics, national and state agencies, and school systems. For those who desire to further their education, the Doctor of Physical Therapy and the Doctor of Physical Therapy Science degrees are available.

### THE PROGRAM

The Physical Therapist Assistant (PTA) Program, which is fifteen months in length, leads to the Associate in Science degree and professional licensure. The program begins with the sophomore year. Instruction begins in June; graduation is the following June. Official program completion, however, is when clinical affiliations are completed—usually by the end of September.

## **CLINICAL EXPERIENCE**

Supervised clinical experience is obtained in a variety of settings during the program. Students complete a two-week practicum and three major clinical assignments, each six weeks in length.

All clinical assignments will be made by the coordinator of clinical education or a designee (or program director). Because of the limited number of local facilities available, assignments cannot be made on the basis of the student's family/marital status or personal preference.

Although the department makes an effort to accommodate the student's preference, the student agrees to accept the clinical assignment made by the department at any of the affiliated facilities, whether local or out of state.

## **ACCREDITATION**

The program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association, 1111 North Fairfax Street, Alexandria, VA 22314; telephone, 703/706-3245.

## **CPR CERTIFICATION**

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health care provider level. Certification may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

## **TRANSPORTATION**

Students are required to have their own transportation to and from clinical sites.

## **PROFESSIONAL LICENSING**

Satisfactory completion of the degree requirements and clinical affiliations qualifies the student to sit for the National Physical Therapist Assistant Licensing Examination. Licensure is not required in all states for the physical therapist assistant to practice. Information about licensure or registration in the state in which one wishes to practice can be obtained on the Web at <[fsbpt.org](http://fsbpt.org)>.

## **PROFESSIONAL ASSOCIATION**

Students and graduates are eligible for membership in the American Physical Therapy Association. The objectives of the association are to foster development and improvement of service and education. This organization grants student membership at a nominal cost to undergraduates of approved schools. The student is required to become a member of this association while in the program. The national office of the American Physical Therapy Association is at 1111 North Fairfax Street, Alexandria, VA 22314.

## **PROGRAM PHILOSOPHY STATEMENT**

In accordance with the mission of Loma Linda University—"To make man whole"—and of the School of Allied Health Professions—"To continue the healing and teaching ministry of Jesus Christ"—the program is committed to the highest development of the physical, emotional, mental, and spiritual capacities of its faculty and students. Promoting wholeness constitutes a caring commitment to the well-being of others, to students, and to program personnel; to active engagement in the advancement of the

profession; and to a living consecration to God. Students in this program will have opportunities to develop a commitment to excellence in service for others and their profession, and to develop a biblically informed faith and a commitment to lifelong spiritual growth.

### **PROGRAM MISSION**

The Physical Therapist Assistant Program affirms the mission and values of Loma Linda University and the School of Allied Health Professions by providing an educational program that prepares physical therapist assistants with balanced intellectual development, social skills, competent practice, and spiritual connection.

### **PROGRAM GOALS**

In order to achieve the Physical Therapist Assistant (PTA) Program mission, the program goals aim to:

1. Provide technical-level physical therapy education for the physical therapist assistant that culminates in an Associate in Science degree.
2. Prepare graduates ready to provide physical therapy interventions and services under the direction and supervision of licensed physical therapists in a variety of settings.
3. Prepare graduates for service who demonstrate ethical behavior consistent with legal and professional standards.
4. Provide opportunities for students to gain compassionate insight into practices and behaviors found in a variety of ethnic and cultural backgrounds within an atmosphere of respect for differences.
5. Provide opportunities for graduates to consider the concept of wholeness when addressing the needs of the patient/client in terms of physical, mental, and spiritual concerns.
6. Prepare graduates to communicate effectively with patient/clients and family, when appropriate; with colleagues; and with other members of the health care delivery team.
7. Maintain compliance with CAPTE evaluative criteria for PTA educational programs.

### **PROGRAM FACULTY GOALS**

In order to provide the learning experiences necessary and desired to prepare graduates for practice, the Physical Therapist Assistant (PTA) program faculty aim to:

1. Hold state practice licensure as well as membership in the professional organization(s).
2. Hold a master's-level degree or higher.
3. Maintain contemporary knowledge/practice expertise in assigned teaching areas.
4. Practice effective instructional methods relevant to course content, course design, and learning assessment methods.
5. Develop, implement, and evaluate the technical and clinical education components of the PTA curriculum.
6. Accept applicants into the PTA program who have adequately completed all eligibility requirements and who provide sufficient evidence on which to predict successful completion of the PTA program.
7. Use an approach to education in the PTA classroom that reflects an appreciation of the teaching and healing ministry of Jesus Christ.

8. Engage in service for the school, the University, the profession, and/or the community.
9. Model professional and personal behavior that is in harmony with Christ-like values in interactions with students, staff, colleagues, alumni, family, and the public.

## STUDENT LEARNING OUTCOMES

The mission of the Physical Therapist Assistant Program is to graduate physical therapist assistants with balanced intellectual development, social skills, competent practice, and spiritual connection.

Graduates of the program will be able to:

1. Demonstrate a basic level of knowledge and skills appropriate for safe and effective practice as a physical therapist assistant and as a member of the health care team.
2. Provide physical therapy interventions and services under the direction and supervision of licensed physical therapists in a variety of settings.
3. Exhibit ethical behavior consistent with legal and professional standards when interacting with instructors, classmates, patients/clients and family members, and clinical personnel.
4. Demonstrate compassionate respect for differences encountered in interactions with individuals from other ethnic and cultural backgrounds.
5. Demonstrate consideration of the close interrelationship of physical, mental, and spiritual concerns when addressing the needs of patients/clients and others.

## ADMISSION

Note: Grades below C are not transferable for credit.

To be eligible for admission, a student must have completed the following prerequisites at a regionally accredited college or university and have a minimum G.P.A. of 2.5 both in science and in nonscience classes.

### Prerequisite

Individuals who already have a bachelor's degree from a regionally accredited college or university need to complete only the prerequisites denoted with an asterisk (\*):

Four units of religion are required only if applicant has attended a Seventh-day Adventist college or university.

Select 4 units from one area: history, literature, philosophy, foreign language, art/music appreciation/history

\*Human anatomy and physiology with laboratory, complete sequence

\*Introductory physics with laboratory, one quarter/semester

\*Two years high school mathematics with grades of C or above, or intermediate algebra in college

\*General psychology

\*Human growth and development, developmental psychology, or abnormal psychology

Freshman English composition, complete sequence

\*Speech

Personal health or nutrition, or two physical activity courses

Electives to meet the minimum total requirements of 48 quarter units or 32 semester units

## WORK/OBSERVATION EXPERIENCE

Twenty hours of work or volunteer observation in an inpatient physical therapy setting and twenty hours in an outpatient physical therapy setting, plus an additional forty hours in either an inpatient or an outpatient physical therapy setting—for a total of eighty hours—are required.

### Sophomore Year, Summer Quarter

Units

PTAS 201	Anatomy	4.0
PTAS 205	Introduction to Physical Therapy	1.0
PTAS 206	Documentation Skills	1.0
PTAS 212	Physical Therapy Procedures	3.0
PTAS 231	Physical Therapy Modalities	3.0
PTAS 275	Psychosocial Aspects of Health	2.0
RELE 456	Personal and Professional Ethics	2.0
Totals		16.0

### Autumn Quarter

Units

AHCJ 305	Infectious Disease and the Health Care Provider	1.0
PTAS 203	Applied Kinesiology	4.0
PTAS 224	General Medicine	3.0
PTAS 225	Neurology	3.0
PTAS 227	Therapeutic Exercise	2.0
PTAS 236	Applied Electrotherapy	3.0
Totals		16.0

### Winter Quarter

Units

PTAS 226	Orthopaedics I	3.0
PTAS 238	Wound Care	1.0
PTAS 243	Applied Geriatrics	3.0
PTAS 252	Applied Neurology	3.0
PTAS 264	Applied Prosthetics and Orthotics	2.0
PTAS 265	Professional Seminar	1.0
PTAS 291	Physical Therapist Assistant Practicum	1.0
RELR 475	Art of Integrative Care	2.0
Totals		16.0

### Spring Quarter

Units

PTAS 241	Applied Pediatrics	2.0
PTAS 251	Orthopaedics II	3.0
PTAS 261	Physical Therapy Practice	1.0
PTAS 293	Physical Therapist Assistant Affiliation I	6.0
Totals		12.0

**Summer Quarter**

Units

PTAS 294	Physical Therapist Assistant Affiliation II	6.0
PTAS 295	Physical Therapist Assistant Affiliation III	6.0
Totals		12.0
<b>Overall Totals</b>		<b>72.0</b>

A minimum grade of C (2.0) is required for all courses in the program.

## Physical Therapy – AH

M.P.T., D.P.T., D.Sc.

EDD ASHLEY, Chair, Department of Physical Therapy

HOWARD SULZLE, Associate Chair, Department of Physical Therapy

LAWRENCE E. CHINNOCK, Associate Chair, Program Director for Entry-Level Doctor of Physical Therapy

EVERETT B. LOHMAN III, Program Director for Postprofessional Master of Physical Therapy, Postprofessional Doctor of Physical Therapy, and Postprofessional Doctor of Science

THERESA JOSEPH, Academic Coordinator of Clinical Education for Entry-Level Doctor of Physical Therapy Program

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Patricia A. Hokama

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Susan M. Huffaker

Eric G. Johnson

Theresa Joseph

Robert F. Landel

Everett B. Lohman III

Helen H. Marshak

Bradford D. Martin

Jeannine Stuart Mendes

Steven D. Newton

Melvin A. Orser

Jerrold S. Petrofsky

Ronald M. Rea

Gail T. Rice

Ernest R. Schwab

Howard W. Sulzle

R. Wesley. Swen

James M. Syms  
Desmyrna R. Taylor  
Donna G. Thorpe  
Antonio Valenzuela  
William E. Walthall  
Ardis E. Wazdatskey  
Melanie A. Westberg  
Christine Wilson  
Lily L. Young  
Grenith J. Zimmerman

#### **ADVISORY COMMITTEE**

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Theresa O. DeLao  
Liane H. Hewitt  
Craig R. Jackson\*  
Wendy Lantz  
Lee Nattress  
Lyn Nattress  
\*ex officio

Beyond the Associate in Science degree, physical therapy options include pre-and postprofessional master's and doctoral degrees:

- postprofessional Master of Physical Therapy
- entry-level Doctor of Physical Therapy
- postprofessional Doctor of Physical Therapy
- postprofessional Doctor of Science

Physical therapists evaluate and treat patients with disease, injury, or disabilities. In many states, registered physical therapists work as independent practitioners. Physical therapy techniques are applied to restore strength, flexibility, and coordination; to reduce pain; and generally to prepare the patient to function more effectively at work and in activities of daily living. Agents such as heat, light, electricity, water, exercise, and massage are used. While working with patients, psychological and sociological principles are used to motivate and instruct.

Within the profession, there are many specialties—including orthopaedics, neurology, pediatrics, geriatrics, cardiopulmonary, hand rehabilitation, and sports physical therapy. Physical therapists work in acute care and convalescent hospitals, rehabilitation centers, children's centers, private practice, athletic training and sports medicine programs, research institutions, school systems, and home care agencies.

#### **PROFESSIONAL ASSOCIATION**

Students and graduates are eligible for membership in the American Physical Therapy Association (APTA). The objective of the association is to foster development and improvement of service and

education. This organization grants student membership at a nominal cost to students of approved schools. The student is required to become a member of this association while in the program and is encouraged to read the journal and attend the APTA-sponsored meetings.

## **PROFESSIONAL REGISTRATION**

Satisfactory completion of the entry-level D.P.T. degree requirements qualifies the student to sit for all state licensure examinations. Information about the state registries of physical therapists can be obtained at the office of the department chair. All states require that a physical therapist pass the national qualifying examination for licensure to practice. California application form and fee are submitted to the Physical Therapy Board of California, 1418 Howe Avenue, Suite 16, Sacramento, CA 95825; Web site: <ptb.ca.gov>.

## **PHYSICAL THERAPY—M.P.T. (POSTPROFESSIONAL)**

### **Admission**

To be eligible for admission, the applicant must have earned a bachelor's degree in physical therapy from an accredited program or have the equivalent of a U.S. bachelor's degree in physical therapy. There is no GRE requirement for acceptance. A personal computer (minimum: 800 MHz multimedia) with Internet access (minimum: 56 k.b.p.s. [connected at 44+ k.b.p.s.]) is required.

### **TOEFL score**

A TOEFL score of 213 if computer generated or 80 if Internet based is required for foreign students. All foreign transcripts must be submitted to an approved evaluation service. The list of the three approved services can be obtained from the School of Allied Health Professions admissions office. Results of the evaluation are to be sent to this University directly from the evaluation center. Official foreign transcripts must be sent to the School of Allied Health Professions, directly from school to school, at the time of application.

### **The program**

The postprofessional Master of Physical Therapy (PP-MPT) degree is designed for individuals with a baccalaureate degree in physical therapy who wish to pursue advanced studies in their profession.

### **Practice credentials**

To practice physical therapy in the United States, one must meet the criteria of the state in which s/he wishes to practice. Credentials are evaluated based on the applicable entry-level education. Postprofessional education cannot be used for this purpose.

### **Learning outcomes**

In addition to the stated institutional learning outcomes, the PP-MPT student is expected to meet the following programmatic learning outcomes:

- Outcome 1** Discovery. Students will demonstrate a commitment to discovery.
- Outcome 2** Science. Students will use basic science knowledge to advance physical therapy practice.
- Outcome 3** Global outreach. Students will provide physical therapy care to the larger world population.
- Outcome 4** Clinical excellence. Students will provide advanced patient-specific physical therapy care.

<b>Major</b>		Units
PHTH 529	Pathokinesiology of Gait	3.0
PHTH 531	Soft-Tissue Mobilization	3.0
PHTH 545	Orthopaedic Interventions: Mobilization of Peripheral Nerves and Diarthroidal Joints of the Extremities	3.0
PHTH 548	Function-Based Rehabilitation	3.0
PHTH 549	Vestibular Rehabilitation	3.0
PHTH 550	Integrative Approach to Early Rehabilitation	3.0
PHTH 560	Neurologic Upper Extremity Management	3.0
PHTH 598	Advanced Specialty Tracks	3.0
		Totals
		24.0

<b>Cognates</b>		Units
AHCJ 509	Teaching and Learning Styles	3.0
AHCJ 511	Biostatistics I	3.0
AHCJ 519	Graduate Wholeness Portfolio	1.0
AHCJ 545	Legal and Ethical Issues in the Health Professions	3.0
AHCJ 591	Research I	3.0
AHCJ 592	Research II	3.0
AHCJ 696	Research Rotations	2.0
RELR 575	Art of Integrative Care	3.0
		Totals
		21.0
		<b>Overall Totals</b>
		<b>45.0</b>

## PHYSICAL THERAPY—D.P.T (ENTRY LEVEL)

### The program

The entry-level Doctor of Physical Therapy (D.P.T.) degree is for individuals who have no previous degree in physical therapy or who have an associate degree in the field of physical therapy. No bachelor's degree is required. The D.P.T. degree curriculum is three years in length. A minimum G.P.A. of 3.2 is required for prerequisite course work. Individuals may enter the program with or without a bachelor degree. Those who enter with a previous bachelor degree will be granted the Doctor of Physical Therapy degree upon completion of the curriculum. Individuals who enter the program without a previous bachelor's degree will be granted a Bachelor of Science degree and a Doctor of Physical Therapy degree upon completion of the curriculum.

### Accreditation

The program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association, 111 North Fairfax Street, Alexandria, VA 22314; telephone 703/706-3245.

### Clinical experience

Supervised experience is obtained in a variety of settings and at different times during the course of study. First-year students complete a two-week practicum assignment during the Spring Quarter. Second-year students complete a three-week assignment during the Autumn Quarter. The major clinical

assignments are during the third year. The student will be assigned a three-week clinical rotation and a ten-week affiliation during the Summer Quarter, an eleven-week affiliation during the Winter Quarter, and one ten-week affiliation during the Spring Quarter.

All clinical assignments will be made by the academic coordinator of clinical education or a designate. Because of the limited number of local facilities available, assignments cannot be made on the basis of the student's family/marital status or personal preference. Although the department makes an effort to accommodate the student's preference, the student agrees to accept the clinical assignments made by the department at any of the affiliated facilities, whether local or out of state.

### **Student learning outcomes**

Upon completion of the degree, graduates should be qualified to demonstrate:

- Entry-level knowledge and clinical skills appropriate for safe and effective physical therapy practice.
- Multicultural competence, i.e., compassion and respect during interactions with individuals from different ethnic and cultural backgrounds.
- Clinical reasoning evidenced by the ability to critically think and integrate evidence-based practice into their clinical decision-making skill set.
- Awareness and application of the ethical and legal parameters surrounding the profession of physical therapy.
- Understanding of evidence-based clinical care utilizing collaborative relationships among the patient, physical therapist, and other health care practitioners.
- Effective verbal and nonverbal communication with instructors, classmates, and clinical personnel as needed to work effectively as a member of a health care team.

### **Admission requirements**

To be eligible for admission to the entry-level Doctor of Physical Therapy degree curriculum, the applicant must have a minimum G.P.A. of 3.2 and must have completed a minimum of 138 quarter units (92 semester units) at a regionally accredited college or university. Admission is a selective process. Criteria used include: G.P.A., completion of subject requirements, interview, essay, recommendations, and work experience.

The minimum subject admission requirements are listed below. Individuals who already have an earned bachelor's degree in any field from a regionally accredited institution need to complete only the prerequisites denoted with two asterisks (\*\*). Additional electives in the areas that have one asterisk (\*) are recommended.

Note: Grades of C- and below are not transferable for credit.

#### **Domain 1: Religion and Humanities (24 quarter/16 semester units, minimum)**

##### **Humanities (12 quarter/8 semester units minimum)**

Credits in humanities must be selected from at least three of the following content areas, and one course must be at the upper division level.

Civilization/History

Fine arts

Literature

Modern language

Philosophy

Performing/visual arts (not to exceed 4 quarter units)

### **Religion**

An applicant who has attended a Seventh-day Adventist college or university is required to have taken 4 quarter units of religion from an Adventist institution for each full year of attendance at an Adventist college or university. Up to 12 quarter units may apply towards the 24 units required in Domain 1. If the applicant has not attended an Adventist institution, no religion units are required. In either case, however, the applicant must have completed 24 quarter/16 semester units in Domain 1: Humanities and Religion.

Note: Physical therapist assistants who enter the program in June 2011 must have a minimum of 20 quarter/14 semester units in Domain I. Physical therapist assistants entering in June 2012 and beyond must have a minimum of 24 quarter/16 semester units in Domain I. A maximum of 12 quarter units of religion credit may count towards the 24 quarter units required.

## **Domain 2: Scientific Inquiry and Analysis**

### **Natural Sciences**

The study of natural sciences must include at least one upper division course:

\*\*Human anatomy and physiology with laboratory, complete sequence (preferred)

**or**

\*\*General biology (complete sequence)

\*\*One additional natural science course

\*\*Statistics

**\*\*Select one of the following two options:**

\*\*Option one: General chemistry with laboratory (complete sequence)

**and**

a minimum of 6 quarter/4 semester units of any physics with laboratory

\*\*Option two: General physics with laboratory (complete sequence)

**and**

a minimum of two academic terms of any sequenced chemistry with laboratory

\*\* Medical terminology (required only of students entering June 2012 and beyond)

Social Sciences

(12 quarter /8 semester units, minimum)

The study of social sciences must include at least one upper division course:

\*\*General psychology

\*\*Human growth and development

Note: Physical therapist assistants who enter the program in June 2011 must have a minimum of 9 quarter/6 semester credits in the social sciences area. Physical therapist assistants entering in June 2012 and beyond must have a minimum of 12 quarter/8 semester credits in the social sciences area.

## **Domain 3: Communication**

(9 quarter/6 semester units, minimum)

Freshman composition, complete sequence (must meet transfer requirements to four-year college or university)

\*\*One course in basic communication skills (speech)

**Domain 4: Health and Wellness**

(3 quarter/2 semester units, minimum)

Required:

Physical education (two physical activity courses)

Personal health education or nutrition course

**Domain 5: Electives**

To meet total requirements of 138 quarter/92 semester units

Students must have a minimum of 18 quarter/12 semester units of upper division course work.

No more than 105 quarter/70 semester units may be transferred from a community college.

**Work/observation experience**

A minimum of 80 hours of work /observation experience is required prior to beginning the degree. Of the 80 hours, a minimum of 20 hours must be in an inpatient physical therapy setting and a minimum of 20 hours must be in an outpatient physical therapy setting.

**TOEFL score**

A TOEFL score of 213 if computer generated or 80 if internet based is required for foreign students. All foreign transcripts, including high school, must be submitted to an approved evaluation service. The list of the three approved services can be obtained from the School of Allied Health Professions admissions office. Results of the evaluation are to be sent to this University directly from the evaluation center. Official foreign transcripts must be sent to the School of Allied Health Professions, directly from school to school, at the time of application.

**First Year, Summer Quarter**

Units

AHCJ 311	Medical Terminology	2.0
AHCJ 510	Human Gross Anatomy	9.0
PHTH 510	Kinesiology	3.0
PHTH 514	Manual Muscle Testing	3.0
RELR 709	Christian Perspectives on Death and Dying	2.0
Totals		19.0

**Autumn Quarter**

Units

AHCJ 305	Infectious Disease and the Health Care Provider	1.0
AHCJ 560	Physiology	4.0
AHCJ 561	Neuroscience I: Neuroanatomy	4.0
AHCJ 721	Wholeness Portfolio I	1.0
PHTH 509	Physical Therapy Modalities	3.0
PHTH 513	Therapeutic Procedures	3.0
PHTH 563	Scientific Inquiry I	2.0
RELT 718	Adventist Heritage and Health	2.0
Totals		20.0

**Winter Quarter**

Units

AHCJ 538	Histology	3.0
AHCJ 542	Pathology I	4.0
AHCJ 562	Neuroscience II: Neurophysiology	3.0
PHTH 527	Scientific Foundations for Therapeutic Exercise	2.0
PHTH 528	Therapeutic Exercise I	2.0
PHTH 532	Biostatistics I	2.0
PHTH 557	Life Span Studies I: Infant through Adolescent	3.0
Totals		19.0

**Spring Quarter**

Units

AHCJ 543	Pathology II	3.0
AHCJ 563	Neuroscience III: Clinical Neurology	2.0
PHTH 506	Exercise Physiology	3.0
PHTH 508	PT Communication and Documentation	2.0
PHTH 519	Locomotion Studies	3.0
PHTH 521A	Orthopaedics 1A	3.0
PHTH 533	Biostatistics II	2.0
PHTH 571	Physical Therapy Practicum I	1.0
Totals		19.0

**Second Year, Summer Quarter**

Units

AHCJ 524	Pharmacology	2.0
PHTH 511	Clinical Orthopaedics	2.0
PHTH 512	Clinical Psychiatry	2.0
PHTH 564	Scientific Inquiry II	2.0
PHTH 575	Orthopaedics IV	1.0
RELT 740	World Religions and Human Health	3.0
Totals		12.0

**Autumn Quarter**

Units

AHCJ 516	Clinical Imaging	3.0
AHCJ 722	Wholeness Portfolio II	1.0
PHTH 501	Neurology I	2.0
PHTH 521B	Orthopaedics 1B	3.0
PHTH 525	General Medicine	3.0
PHTH 530	Therapeutic Exercise II	3.0
PHTH 572	Physical Therapy Practicum II	1.5
Totals		16.5

<b>Winter Quarter</b>		Units
PHTH 502	Neurology II	3.0
PHTH 518	Aspects of Health Promotion	2.0
PHTH 522	Orthopaedics II	3.0
PHTH 526	Cardiopulmonary	3.0
PHTH 534	Soft-Tissue Techniques	2.0
PHTH 558	Life Span Studies II: Developmental Disabilities	3.0
RELE 524	Bioethics and Society	3.0
Totals		19.0

<b>Spring Quarter</b>		Units
PHTH 503	Neurology III	3.0
PHTH 517	Movement Science	2.0
PHTH 523	Orthopaedics III	3.0
PHTH 555	Differential Diagnosis	2.0
PHTH 559	Lifespan Studies III: Geriatrics	2.0
PHTH 561	Physical Therapy Administration	4.0
Totals		16.0

<b>Third Year, Summer Quarter</b>		Units
PHTH 573	Physical Therapy Practicum III	1.5
PHTH 701A	Physical Therapy Affiliation IA	4.0
Totals		5.5

<b>Autumn Quarter</b>		Units
PHTH 701B	Physical Therapy Affiliation IB	1.0
PHTH 731	Advanced Orthopaedic Studies	4.0
PHTH 732	Advanced Neurologic Studies	4.0
PHTH 733	Advanced General Medicine Studies	4.0
Totals		13.0

<b>Winter Quarter</b>		Units
PHTH 702	Physical Therapy Affiliation II	5.0
Totals		5.0

<b>Spring Quarter</b>		Units
PHTH 703	Physical Therapy Affiliation III	5.0
Totals		5.0
<b>Overall Totals</b>		<b>169.0</b>

## **PHYSICAL THERAPY—D.P.T. (POSTPROFESSIONAL) (45-UNIT TRACK)**

### **Admission**

The postprofessional Doctor of Physical Therapy (PP-DPT) degree (45-unit track) is designed for the individual with a degree in physical therapy who wishes to pursue advanced studies in the profession. To be eligible for admission, the applicant must have earned a bachelor's degree in physical therapy from an accredited program or have the equivalent of a U.S. bachelor's degree in physical therapy and must have earned a master's degree. Upon evaluation of transcripts, additional corequisites may be required, and sequencing of courses may be modified. There is no GRE requirement for acceptance into this curriculum.

Since some courses are Web based, students pursuing this curriculum must have access to a personal computer (minimum: 800 MHz multimedia) with Internet access (minimum: 56 k.b.p.s. [connected at 44+ k.b.p.s.]).

### **Student learning outcomes**

In addition to the stated institutional learning outcomes, the PP-DPT degree (45-unit track) student is expected to meet the following programmatic learning outcomes:

- Outcome 1** Teamwork. Students will demonstrate the ability to collaborate with others within and across disciplines.
- Outcome 2** Discovery. Students will demonstrate a commitment to discovery.
- Outcome 3** Science. Students will use basic science knowledge related physical therapy practice.
- Outcome 4** Global outreach. Students will provide physical therapy care to the larger world population.
- Outcome 5** Clinical excellence. Students will provide advanced patient-specific physical therapy care.

## **PHYSICAL THERAPY—D.P.T. (POSTPROFESSIONAL) (64-UNIT TRACK)**

### **Admission**

The postprofessional Doctor of Physical Therapy PP-DPT) degree (64-unit track) is designed for the individual with a bachelor's degree in physical therapy who wishes to pursue a clinical doctorate degree in the profession. To be eligible for admission, the applicant must have earned a bachelor's degree in physical therapy from an accredited program. Candidates from international programs must have their course work evaluated by an international evaluation service. Upon evaluation of transcripts, additional corequisites may be required, and sequencing of courses may be modified. There is no GRE requirement for acceptance into this program.

Since some courses are Web based, students admitted into this curriculum must have access to a personal computer (minimum: 800 MHz multimedia) with Internet access (minimum: 56 k.b.p.s. [connected at 44+ k.b.p.s.]).

### **Student learning outcomes**

In addition to the stated institutional learning outcomes, the PP-DPT (64-Unit Track) program student is expected to meet the following programmatic learning outcomes:

- Outcome 1** Discovery. Students will demonstrate a commitment to discovery.
- Outcome 2** Science. Students will use basic science knowledge related physical therapy practice.

**Outcome 3** Clinical excellence. Students will provide advanced patient-specific physical therapy care.

**Outcome 4** Evidence-based practice. Students will select best-practice and examination techniques based on scientific evidence.

### PHYSICAL THERAPY—D.SC. (POSTPROFESSIONAL)

The Doctor of Science Program is a research-oriented doctoral degree designed for the physical therapist who wishes to pursue advanced studies in the area of education, research, basic science, and advanced clinical practice. To be eligible for admission, the applicant must have a Bachelor of Science degree in physical therapy earned from an accredited program or the equivalent of a U.S. bachelor's degree in physical therapy, and an earned master's degree. Upon evaluation of transcripts, additional corequisites may be required; and sequencing of courses may be modified. There is no GRE requirement for acceptance; however, successful completion of a comprehensive written examination is required in order to advance to candidacy. A written dissertation and a defense of the dissertation is required. At the completion of the curriculum, the diploma will be awarded by the School of Allied Health Professions in conjunction with the Faculty of Graduate Studies.

Since some courses are Web based, students must have access to a personal computer (minimum: 800 MHz multimedia) with Internet access (minimum: 56 k.b.p.s. [connected at 44+ k.b.p.s.]).

#### Student learning outcomes

In addition to the stated institutional learning outcomes, the D.Sc. degree student is expected to meet the following programmatic learning outcomes:

**Outcome 1** Discovery. Students will demonstrate a commitment to discovery.

**Outcome 2** Science. Students will use basic science knowledge to advance physical therapy practice.

**Outcome 3** Global outreach. Students will provide physical therapy care and education to the larger world population.

**Outcome 4** Clinical excellence. Students will provide advanced patient-specific physical therapy care.

**Outcome 5** Teaching. Students will serve as mentors and educators to ignite the flame of discovery, knowledge, and critical thinking.

Required		PP DPT		
		Prior MPT	PP DPT Prior BS	DSc
— —	Elective	12.0	9.0	6.0
AHCJ 506	Educational Evaluation and Clinical Assessment			3.0
AHCJ 507	Pharmacology in Rehabilitation	3.0	3.0	3.0
AHCJ 515	Curriculum Development in Higher Education			3.0
AHCJ 516	Clinical Imaging	3.0	3.0	3.0
AHCJ 518	Advanced Physiology I: Neurobiology	3.0	3.0	3.0
AHCJ 519	Graduate Wholeness Portfolio		1.0	
AHCJ 527	Medical Screening for Rehabilitation Professionals	3.0	3.0	3.0
AHCJ 528	Lifestyle Health and Wholeness		3.0	
AHCJ 534	Advanced Neurological Rehabilitation			3.0
AHCJ 535	Advanced Physiology II: Exercise and Thermoregulation			3.0
AHCJ 551	Professional Systems in Management I	3.0	3.0	3.0

AHCJ 556	Administration in Higher Education			3.0
AHCJ 564	Collaborative Learning in Higher Education			3.0
AHCJ 591	Research I		3.0	
AHCJ 599	Directed Teaching			3.0
AHCJ 605	Critical Analysis of Scientific Literature	3.0	3.0	3.0
PHTH 531	Soft-Tissue Mobilization		3.0	
PHTH 535	Research and Statistics I			3.0
PHTH 536	Research and Statistics II			3.0
PHTH 537A	Research and Statistics III			3.0
PHTH 537B	Research and Statistics III			3.0
PHTH 541	Advanced Clinical Practice I	3.0	3.0	3.0
PHTH 542	Advanced Clinical Practice II	3.0	3.0	3.0
PHTH 543	Advanced Clinical Practice III	3.0	3.0	3.0
PHTH 545	Orthopaedic Interventions: Mobilization of Peripheral Nerves and Diarthroidal Joints of the Extremities		3.0	
PHTH 548	Function-Based Rehabilitation		3.0	
PHTH 598	Advanced Specialty Tracks		3.0	
PHTH 599	Comprehensive Examination			—
PHTH 628	Movement Science of the Upper Quarter		3.0	
PHTH 629	Movement Science: Lower Quarter Biomechanical Relationships	3.0	3.0	3.0
PHTH 697	Research and Statistics V - Preliminary Dissertation			3.0
RELE 525	Ethics for Scientists			3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	3.0	3.0
RELT 557	Theology of Human Suffering			3.0
Totals		45.0	64.0	81.0
<b>Overall Totals</b>		<b>45.0</b>	<b>64.0</b>	<b>81.0</b>

## Physician Assistant—AH

M.P.A.

### PHYSICIAN ASSISTANT SCIENCES

DAVID LOPEZ, Ed.D., Interim Department Chair

YASMIN CHENE, D.H.Sc., M.P.A., PA-C, Department Co-Chair

BENNY HAU, M.D., Medical Director

CHRISTY ESKES, M.P.A., PA-C, Program Director

FRANK SIRNA, PA-C, Didactic Coordinator

JULIE YANG, M.P.H., PA-C, C.H.E.S., Associate Didactic Coordinator

GERALD GLAVAZ, M.P.A.S., PA-C, Clinical Coordinator

GHINA KATRIB, M.P.A., PA-C, Associate Clinical Coordinator

### FACULTY

Yasmin Chene

Christy Eskes

Gerald Glavaz

Benny Hau

Ghina Katrib

Frank Sirna

Julie Yang

Physician assistants (PAs) are health professionals who are licensed to practice medicine under physician supervision. Physician assistants are qualified by graduation from an accredited physician assistant educational program and by certification by the National Commission on Certification of Physician Assistants. Within the physician/PA relationship, the PA exercises autonomy in medical decision making and provides a broad range of diagnostic and therapeutic services. The clinical role of a PA includes primary and specialty care in medical and surgical settings in rural and urban areas. The PA's practice is centered on patient care and may also include educational, research, and administrative activities.

### THE PROGRAM

Loma Linda University offers a professional course of study leading to the Master of Physician Assistant (M.P.A.) degree. This degree prepares students for medical work as midlevel health care professionals.

The program consists of didactic and clinical phases that run concurrently for eight quarters over a twenty-four-month period. A new class is accepted annually. Students are selected from a variety of clinical backgrounds. Experience in patient care, duration of experience, level of patient contact, and degree of responsibility are considered in the evaluation of each applicant. Graduates from the program are eligible to write the national certification examination.

### ACCREDITATION

The program is fully accredited by the Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA).

## PROGRAM OBJECTIVES

Upon completion of the program, the graduate will be qualified to:

1. Obtain detailed and accurate patient histories.
2. Perform appropriate physical examinations.
3. Evaluate patients and make diagnoses.
4. Order, perform, and interpret diagnostic tests.
5. Order and perform selected therapeutic procedures.
6. Develop, implement, and monitor patient-management plans.
7. Present patient data in oral and written forms.
8. Provide continuity of patient care.
9. Assist in surgical procedures.
10. Perform life-saving procedures in emergency situations.
11. Counsel and instruct patients regarding issues of health care management, mental health, therapeutic regimens, normal growth and development, and family planning.
12. Refer patients to appropriate health/mental/social service agencies in the community.
13. Write drug orders.
14. Conduct a medical literature search.
15. Conduct an investigation of a medical, health, or psychosocial topic and present data in appropriate oral and written formats.

## PROGRAM OUTCOMES

In addition to the stated institutional learning outcomes, the M.P.A. degree student is expected to meet the following program learning outcomes:

1. Demonstrate basic science knowledge in physician assistant sciences.
2. Demonstrate competence, knowledge, and clinical skills in physician assistant sciences.
3. Demonstrate critical-thinking skills in physician assistant sciences and practice.

## ADMISSION

### Prerequisite

A baccalaureate degree from an accredited institution, completed by December 31 of the year of application *plus* health care experience. It is preferred that a minimum of 2,000 hours of direct patient-care experience is completed by the time the application is submitted. Student clinical hours are not acceptable. An example or definition of preferred direct patient-care experience are those accredited, credentialed professions that provide: patient assessment, treatment, patient-care plans, and diagnostic testing. Preferred applicants will have direct patient-care experience working in clinical settings that involve a range of patient responsibility and involve a high level of critical thinking.

College-level prerequisite courses include the following:

Human anatomy and physiology with laboratory, complete sequence (8 semester units)

One year of chemistry with laboratory to include inorganic, organic, and biochemistry (8 semester units)

Microbiology with laboratory to include bacteriology, virology, mycology/parasitology (4 semester units)

General psychology or equivalent

General sociology or equivalent

or

Cultural anthropology or equivalent

College algebra or equivalent

English literature and composition, one year or equivalent

### **Recommended**

Statistics, medical terminology, and computer literacy

### **Preference given to**

Applicants with documented health care experience

Seventh-day Adventists

Graduates of Loma Linda University

Applicants from underrepresented populations

Applicants with documented community service

### **Admission requirements**

An overall G.P.A. of at least 3.0 or higher and a science G.P.A. of 3.0 or higher on a 4.0 scale

Applications submitted through CASPA at <caspaonline.org>

Three letters of recommendation—one from a practicing M.D., D.O., or P.A.

Documented patient-care experience

Note: Grades below C are not accepted for credit.

### **How to apply**

Applications are accepted between June 1 and November 1. Applications must be made through the Central Application Service for Physician Assistants (CASPA). This service is available at <caspaonline.org>. In addition, completion of a secondary application from Loma Linda University is required. Completed applications and all supporting documents must be received by the Department of Physician Assistant Sciences no later than January 15. Required interviews are granted to qualified applicants upon invitation by the admissions committee.

Applicants must complete all prerequisite course work at a regionally accredited college before being admitted to a program in the School of Allied Health Professions.

A minimum score of 550 (paper based) or 213 (computer based) from the Test of English as a Foreign Language (TOEFL) must be submitted. Any student with a score on the TOEFL writing test (TWE) of less than 4 will be required to do remedial work during the program and retake the TOEFL.

### **HOUSING**

On-campus housing is available for men and women. For information on the men's dormitory (Daniells' Residence), call 909/558-4561. For information on the women's dormitory (Lindsay Hall), call 909/558-4561.

### **FINANCIAL AID**

Applications for financial aid should be submitted early, even before the student is admitted into the program. Processing of financial aid should be done by January 1. Applications for CAL Grants (California residents only) must be postmarked no later than March 2. These applications are available

after December 25. The University's Student Financial Aid Office will help applicants obtain the necessary applications and guide them in the process of applying for aid. Applicants for aid must contact the Office of Financial Aid, Loma Linda University, Loma Linda, CA 92350 at 909/558-4509.

## CONTACT INFORMATION

Kena Shaddox  
Molly Stevenson Kurth  
909/558-7295  
<pa@llu.edu>

or visit the SAHP Web site at <llu.edu/allied-health/sahp/pa>.

First Year, Autumn Quarter			Units
AHCJ 519	Graduate Wholeness Portfolio	In progress through summer quarter	1.0
PAST 518	Anatomy and Physiology I		3.0
PAST 547	Basic Medical Science		3.0
PAST 548	Diagnostic Methods		2.0
PAST 558	Psychiatry for Physician Assistants		3.0
PAST 601	Evidence Based Medicine for Physician Assistants I		2.0
RELE 505	Clinical Ethics		3.0
Totals			17.0

Winter Quarter			Units
PAST 519	Anatomy and Physiology II		3.0
PAST 541	Clinical Medicine for Physician Assistants I		5.0
PAST 544	Pharmacology for Physician Assistants I		3.0
PAST 551	Pathology for Physician Assistants I		3.0
PAST 561	Physical Diagnosis I		3.0
PAST 602	Evidence Based Medicine for Physician Assistants II	In progress through summer quarter	2.0
Totals			19.0

Spring Quarter			Units
PAST 542	Clinical Medicine for Physician Assistants II		5.0
PAST 545	Pharmacology for Physician Assistants II		3.0
PAST 552	Pathology for Physician Assistants II		3.0
PAST 556	Preventive Medicine and Health Promotion		2.0
PAST 562	Physical Diagnosis II		3.0
PAST 571	Multicultural Competencies for Physician Assistants		3.0
Totals			19.0

<b>Summer Quarter</b>		Units
PAST 504	Primary Care Pediatrics	2.0
PAST 505	Women's Health Care	2.0
PAST 543	Clinical Medicine for Physician Assistantss III	3.0
PAST 554	Clinical Skills for Physician Assistants	5.0
PAST 563	Physical Diagnosis III	3.0
PAST 572	Cultural Immersion for Physician Assistants	4.0
Totals		19.0

<b>Second Year, Autumn Quarter</b>		Units
PAST 516	Physician Assistant Professional Issues	2.0
PAST 603	Capstone	2.0
PAST 701	Rotation I	6.0
PAST 702	Rotation II	6.0
Totals		16.0

<b>Winter Quarter</b>		Units
PAST 703	Rotation III	6.0
PAST 704	Rotation IV	6.0
Totals		12.0

<b>Spring Quarter</b>		Units
PAST 705	Rotation V	6.0
PAST 706	Rotation VI	6.0
Totals		12.0

<b>Summer Quarter</b>		Units
PAST 707	Rotation VII	6.0
PAST 708	Rotation VIII	6.0
PAST 711	Rotation XI	4.0
PAST 712	Rotation XII	4.0
Totals		20.0
<b>Overall Totals</b>		<b>134.0</b>

Eight six-week clinical rotations, including: family medicine, internal medicine, pediatrics, obstetrics/gynecology, general surgery, emergency medicine, behavioral medicine, and one elective

## Radiation Sciences—AH

(B.S., M.S.)

### ACCREDITATION

Loma Linda University is regionally accredited by the Western Association of Schools and Colleges (WASC), 985 Atlantic Avenue, Suite 100, Alameda, CA 94501; telephone, 510/748-9001; FAX, 510/748-9797; <www.wascweb.org> or <wascsr@wascsr.org>.

### CPR CERTIFICATION

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health care provider level. This may be completed prior to beginning the program of study or be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

### RADIATION SCIENCES—B.S.

TIMOTHY SEAVEY, M.A.M., RT (R)(CT), Program Director

BRIGIT LARA, M.A.M., RT(R), Assistant Program Director

### FACULTY

Laura L. Alipoon

Noha S. Daher

Carol A. Davis

Marie M. DeLange

William Edmunds

Erma Ezpeleta

Barbara Holshouser

Noriece R. Kisinger

David Lopez

Glenn A. Rouse

Andrew L. Shepard

Madeleine Waters

Karla Lavin Williams

Grenith Zimmerman

For radiologic technologists educationally prepared beyond the level of the Associate in Science degree, there are numerous career options. Radiology departments in large hospitals offer career opportunities in management, supervision, and research. Excellent opportunities also exist for those who are qualified to teach radiologic technology. In addition, commercial enterprises and state governments continually need technologists with advanced training to serve as customer representatives, technical consultants, and health physicists.

The student in the baccalaureate degree curriculum completes:

- The general studies requirements (general education)
- The radiation technology core requirements (online)
- An area of emphasis (administration, education, clinical practice, science, or informatics)

Electives to meet the needs of the individual student are selected from existing courses after consultation with the program director.

### **The program**

The Bachelor of Science degree curriculum, which begins at the level of the junior year, emphasizes the more advanced areas in radiologic technology and is designed to prepare graduates for careers in administration, clinical specialties, informatics, science, or education by providing a core course of study that is coupled with an area of emphasis that the student chooses. Emphases include: education, imaging informatics (PACS administration and IT), science, advanced medical imaging, clinical specialties, or administration. The administration track has a minor in health care administration embedded into the course work.

### **The program objectives**

1. Graduate practitioners who are leaders in the profession and who are capable of serving the greater community in the public, private, and nonprofit sectors.
2. Graduate managers, administrators, and educators who contribute to the profession's body of knowledge through leadership roles, publications, professional presentations, and advocacy.

### **Program student learning outcomes**

Upon completion of the curriculum, the graduate should be qualified to:

1. Communicate effectively.
2. Demonstrate moral leadership skills.
3. Evaluate current and future advancements in their discipline.

### **Admission**

To be eligible for admission, the applicant must be a graduate of an approved associate degree program (or the equivalent) in radiologic technology, radiation therapy, nuclear medicine, or diagnostic ultrasound (sonography). A maximum of 70 semester or 105 quarter units from an accredited junior college will be accepted as transfer credit, including units for clinical education. Students who have completed a hospital training program are allowed up to 55 quarter units of academic credit on the basis of their registry certificate.

### **Certification**

The applicant must have certification from the American Registry of Radiologic Technologists (ARRT) or equivalent specialty certification. Applicants who are eligible to take the ARRT examination for certification but who have not had opportunity to do so are given provisional status for one quarter.

Eligibility to continue is subject to student's obtaining certification. It should be understood that the University will not sign or validate registry documents of students who obtained their training in another program.

### Prerequisite/Corequisite

Students must fall within 12 quarter units of completion of general education (GE) requirements in order to be considered for the Bachelor of Science degree in radiation sciences core curriculum. Those requirements are listed below.

**Humanities**—28 units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language, art/music appreciation/history). Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university. Religion is included in the B.S. degree core as a corequisite. A total of 28 quarter units are required courses to fulfill this area.

Human anatomy and physiology with laboratory, one semester/quarter minimum; or general biology with laboratory, complete sequence.

**Natural Sciences**—Additional natural science units from: chemistry, geology, mathematics, physics, and statistics. Must have a total of 12 quarter units of natural sciences, including up to 6 units from anatomy and physiology (no more than 6 units in any one area from the natural sciences may be used).

Two years of high school mathematics with grades of C or above, or intermediate algebra in college.

**Social Sciences**—Units to include cultural anthropology (or an approved course dealing with cultural diversity). Must have a total of 12 quarter units of social science. Select additional quarter units from: economics, geography, political science, psychology, sociology, or anthropology.

**Communication**—English composition, complete sequence. Additional communication units may include courses in computer information systems, critical thinking, and public speaking. Minimum of 9 units are needed to complete this area.

**Health and Wellness**—Personal health or nutrition and two physical activity courses to meet the minimum of 3 quarter units.

**Electives to meet the minimum total requirements of 192 quarter units.**

Core		Units
AHCJ 475	Health Care Research and Statistics	4.0
AHCJ 493	Senior Portfolio I	3.0
AHCJ 494	Senior Portfolio II	—
HCAD 305	Health Care Communication	4.0
RTCH 325	Excel Basics for Managers	2.0
RTCH 385	Radiologic Trends in Health Care	3.0
RTCH 464	Moral Leadership	4.0
RTCH 467	Management of a Radiologic Service	3.0
RTCH 471	Applied Research Methods I	2.0
RTCH 472	Applied Research Methods II	2.0
Totals		27.0

<b>Religion</b>		Units
REL_ 4__	Upper Division Religion	3.0
RELT 406	Adventist Beliefs and Life (2 to 3)	Choose one course
RELT 423	Loma Linda Perspectives (2 to 3)	
RELT 436	Adventist Heritage and Health (2 to 3)	
RELT 437	Current Issues in Adventism (2 to 3)	
Totals		5.0-6.0

<b>Area of emphasis: administration</b>		Units
HCAD 316	Economics for Health Care Managers	4.0
HCAD 336	Legal Environment of Health Care	4.0
HCAD 374	Health Care Human Resources	4.0
HCAD 464	Health Care Finance	4.0
RTCH 413	Management Practicum I	2.0
RTCH 414	Management Practicum II	2.0
RTCH 418	Health Information Management and Radiology Coding for Radiology Managers	4.0
RTCH 485	Digital Management in Radiology	2.0
Totals		26.0

<b>Area of emphasis: education</b>		Units
AHCJ 485	Technology in Education	3.0
RTCH 411	Student-Teaching Practicum I	2.0
RTCH 412	Student-Teaching Practicum II	2.0
RTCH 474	Instructional Techniques	3.0
RTCH 475	Curriculum Development in Health Sciences	3.0
RTCH 476	Adult Learning Theory	3.0
RTCH 477	Learning Activities & Assessment	3.0
RTCH 478	Online Instructional Design	3.0
Totals		22.0

<b>Area of emphasis: imaging informatics</b>		Units
RTII 354	Introduction to Informatics	3.0
RTII 356	Information Technology in Radiology	3.0
RTII 358	PACS Planning and Implementation	3.0
RTII 359	Digital Radiography and PACS for the Imaging Specialist	2.0
	Prerequisite for imaging informatics	
RTII 364	Administrative Issues in Informatics	3.0
RTII 368	Communication and Education in Imaging Informatics	3.0
RTII 374	Image Management in Informatics	3.0
RTII 378	Systems Management in Informatics	3.0
RTII 384	Advanced Imaging Informatics	3.0
Totals		26.0
<b>Overall Totals</b>		<b>60.0-81.0</b>

**Area of emphasis: Science (15-20 units)**

15-20 quarter units selected from the natural sciences in the areas of biology, microbiology, chemistry, mathematics, or physics. No less than 6 quarter units from a minimum of three different content areas must be taken. These courses are taken at your local college/university. A minimum grade of C+ (2.5) is required for all courses.

The following courses are *recommended* for students interested in applying to the physician assistant or medical school programs (see programs for details):

- General biology with laboratory, 8 units (full sequence of anatomy and physiology, and microbiology)
- General or inorganic chemistry with laboratory, 8 units
- Organic chemistry with laboratory, 8 units
- General physics with laboratory, 8 units

**Area of emphasis: Clinical practice (18-31 units)**

A nine-to-twenty-four month, full-time internship in a clinical specialty can be selected from the following areas:

- Diagnostic sonography (37 units)
- Nuclear medicine technology (18 units)
- Special imaging technology (18 units)
- Radiation therapy technology (28 units)

Acceptance into these specialties is separate from acceptance into the B.S. degree program.

**RADIATION SCIENCES—M.S. ONLINE PROGRAM**

MIKE IORIO, Program Director

**The program**

The Master of Science degree in radiation sciences has a commitment to educate and expand the knowledge and expertise of radiology health professionals by providing radiology practitioners an opportunity to advance their education.

**Distance education**

The Master of Science degree in radiation sciences is an online curriculum open to qualified applicants.

**Mission statement**

The mission of the Master of Science degree in radiation sciences is to provide students with an enhanced understanding of leadership, management, administration, and education so that they can serve humanity as practitioners and leaders in the radiation technology environment.

**Program objectives**

1. Graduate practitioners who are leaders in the profession and who are capable of serving the greater community in the public, private, and nonprofit sectors.

2. Graduate managers, administrators, and educators who can contribute to the profession's body of knowledge through leadership roles, publications, professional presentations, and advocacy.

### **Program outcomes**

Upon completion of the curriculum, the graduate should be qualified to:

1. Demonstrate leadership and reflective thinking in the areas of management, administration, and education.
2. Behave in a professional manner in all interactions, including communicating appropriately (written and oral) with patients, colleagues, and others with whom s/he comes in contact.
3. Continue to improve knowledge and skills by participating in educational research and professional activities, sharing knowledge with colleagues, and investigating new and innovative aspects of professional practice.
4. Apply advanced practice in managerial, administrative, or educational realms.

### **Admission requirements**

To be eligible for admission, the applicant must have earned a bachelor's degree with a minimum G.P.A. of 3.0. Applicants must also possess national certification or equivalent in a radiation science discipline.

The applicant's letters of recommendation, telephone interview, written essay, and work experience are also considered in the admissions screening process.

All applicants must have the following:

- Bachelor's degree from an accredited institution (foreign degrees must be evaluated for U.S. equivalency)
- Minimum of 3.0 undergraduate G.P.A.
- Certification by the American Registry of Radiologic Technologists (or equivalent) in a radiation sciences discipline
- Completion of all components of the University's M.S. degree in radiation sciences application
- Two-to three-page essay describing personal and professional skills and accomplishments, interests, and how earning the M.S. degree in radiation sciences will help career goal achievement. This essay must be sent to the program director once the application has been submitted.
- Phone interview (to be scheduled after application has been submitted)

### **Corequisite\***

It is *recommended* that all corequisite course work be completed prior to application. If acceptance is granted, all corequisite course work must be completed prior to the end of the first Summer Quarter.

- A course in statistics (must be complete within five years of application, or by the end of the first Summer Quarter)
- A course in research methods (must be complete within five years of application, or by the end of the first Summer Quarter)

\* Corequisites must be completed within five years of application, or if accepted, by the end of the first summer term.

## Program design

The curriculum is twenty-four months or eight quarters in length. Approximately two weeks prior to the beginning of school in the first Autumn Quarter, students will come to the campus for three- to-five days for orientation. Subsequently, all courses will be totally online until the week prior to graduation, when the students will again come to the campus to present their research projects. The curriculum may be completed in one year beginning Fall Quarter of 2009 (upon approval by program director).

## Research requirements

Statistics and research methods courses are required if not completed within five years of application. While completing the curriculum, students will complete a 3-unit research methods course AHCJ 595, which will include descriptive statistics; and 6 units of RTRS 621, 622 Capstone Project. Students will prepare at least one publishable manuscript to be submitted to the Department Research Committee for evaluation regarding its publication potential.

## Professional portfolio

The student will complete a professional portfolio while pursuing the degree. The portfolio will contain evidence of the growth and learning that occurred while the student progressed through the curriculum: pre- and postreflection on the seven core values of the University, leadership assessment results, and final papers or projects from course work. The student will be asked to reflect on his/her growth, insights, and application of knowledge gained while pursuing the degree. Portfolio selections will be placed in the portfolio quarterly.

Required		Units
AHCJ 549	Professional Responsibility in Allied Health Professions	3.0
AHCJ 550	Organizational Theory	3.0
AHCJ 566	Theoretical Foundations of Leadership	3.0
AHCJ 567	Personal Leadership	3.0
AHCJ 576	Basics of Marketing	3.0
AHCJ 578	Health Care Finance and Reimbursement	3.0
AHCJ 579	Instructional Effectiveness	3.0
AHCJ 586	Curricula Planning in Health Sciences	3.0
AHCJ 588	Fundamentals of Human Resource Management	3.0
AHCJ 589	Strategic Planning in Health Care Organizations	3.0
AHCJ 595	Research and Statistics Concepts and Methods: Intermediate	3.0
RELT 563	Health Care, Humanity, and God	3.0
RTRS 584	Management of Imaging Informatics	3.0
RTRS 614	Professional Portfolio	1.0
RTRS 615	Advances in Technology: Educational and Managerial Issues	3.0
RTRS 621	Capstone Project I	3.0
RTRS 622	Capstone Project II	3.0
Totals		49.0
<b>Overall Totals</b>		<b>49.0</b>

## Radiation Therapy Technology—AH

### Certificate

CAROL DAVIS, Clinical Program Director, Certificate

### RADIATION THERAPY TECHNOLOGY—CERTIFICATE

The fifteen-month certificate program is offered in a distance learning format, in conjunction with Fresno Community College. Students must attend either the Loma Linda or the Fresno campus for instruction and may attend clinical educational sites in the Loma Linda, Fresno, Bakersfield, or Porterville areas. The program commences in the Fall Quarter and involves course work via teleconferencing; as well as a comprehensive, supervised, clinical education in all aspects of clinical radiation oncology. Students are expected to rotate to different clinical sites in their specific geographical area during the program in order to enhance their clinical acumen. The program covers forty hours per week and follows the main University calendar.

### Program outcomes

1. Comprehend treatment charts and other data, such as treatment plans and DRRs; and be able to extract all data necessary to complete an accurate patient treatment.
2. Comprehend the principles of the construction and operation of radiation therapy accelerators and beam- modification devices.
3. Accurately complete all aspects of patient treatment and understand the need for daily reproducibility of "set-up."
4. Effectively and coherently communicate ideas to patients, patients' families, staff, peers, and faculty.
5. Accurately maintain patient-treatment records with the understanding that they are legal documents.
6. Understand the principles of general quality assurance and continuous quality improvement (CQI) as they apply to the practice of radiation therapy.
7. Understand the principles of radiation safety as they apply to the practice of radiation therapy.
8. Understand the principles of HIPPA as the act applies to the practice of radiation therapy.

### Accreditation

The program is accredited by the Joint Review Committee on Education in Radiologic Technology, 20 North Wacker Drive, Suite 900, Chicago, IL 60606-2901; telephone 312/704-5300.

### Distance education

The Radiation Therapy Technology Program is offered via distance education at Fresno City College, Fresno, California.

### CPR certification

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be

completed at the American Heart Association health care provider level. This must be completed prior to beginning the program of study. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

## Admission

### Prerequisite

To be admitted into the Radiation Therapy Technology Program and to become certified and registered, the applicant must fulfill the following two prerequisites:

Be an ARRT-registered radiologic technologist and

Be a graduate of an accredited radiologic technology program;

*AND* must have credits in the following:

Radiation physics

Human anatomy and physiology with laboratory, complete sequence

College algebra

Radiation protection (available in professional program for those who have not taken it)

Patient-care methods

General psychology

*or*

Be a registered nurse or

Be a graduate of an accredited allied health program (minimum training of two years)

*AND* must have credits in the following:

Human anatomy and physiology with laboratory, complete sequence

College algebra

Medical terminology

Patient-care methods

Radiation physics

Radiation protection (available in professional program for those who have not taken it)

Principles of radiography

General psychology

### Observation experience required

A minimum of forty hours of work observation in a radiation therapy department is required.

Required		Units
AHCJ 403	Pathology II	3.0
RELE 457	Christian Ethics and Health Care	2.0
RTTH 332	Radiation Biology	1.0
RTTH 342	Patient-Care Practices in Radiation Therapy	2.0
RTTH 344	Radiation Therapy Procedures	2.0
RTTH 348	Radiation Therapy Review	1.0
RTTH 355	Physical Principles of Radiation Therapy I	3.0
RTTH 356	Physical Principles of Radiation Therapy II	3.0
RTTH 357	Applied Dosimetry	2.0
RTTH 364	Radiation Oncology I	2.0
RTTH 365	Radiation Oncology II	2.0

RTTH 366	Radiation Oncology III	2.0
RTTH 971	Radiation Therapy Affiliation I	7.0
RTTH 972	Radiation Therapy Affiliation II	7.0
RTTH 973	Radiation Therapy Affiliation III	7.0
RTTH 974	Radiation Therapy Affiliation IV	10.0
RTTH 975	Radiation Therapy Affiliation V	10.0
		Totals 66.0
		<b>Overall Totals 66.0</b>

# Radiologist Assistant—AH

M.S. (online/blended program)

BRIGIT LARA, Program Director

## THE PROGRAM

The student will receive didactic and clinical mentoring on neonatal, pediatric, adult, and geriatric populations. Courses will be a combination of discussion, projects, case studies and Web-based learning. Students are responsible for finding their own clinical site and radiologist mentor. This is an online program; however, students must be on campus during orientation, and the first Autumn, Winter, and Spring quarters, and during the final Spring Quarter.

## MISSION

The mission of the Radiologist Assistant Program is to provide students with a sound clinical, didactic, and moral foundation so that they can impact patient care in a positive and meaningful manner.

## VISION

The Radiologist Assistant Program at Loma Linda University will be one of the premier radiologist assistant programs in the nation—home to a program that students will want to attend. Its diverse and safe learning environment will contribute to the view of Loma Linda University as one of the state's economic and cultural centers.

## PURPOSE

The purpose of the Radiologist Assistant Program is to educate students to competently function as radiologist assistants in the variety of imaging environments.

## PROGRAM OBJECTIVES

1. Graduate competent advanced practice technologists who perform procedures and clinical activities of the profession.
2. Graduate leaders who engage in activities that advance the profession.
3. Graduate midlevel practitioners who will impact health care delivery.
4. Graduate professionals who maintain recognized educational standards of the profession.
5. Graduate professionals who employ proper ethics within the profession.

## ADMISSIONS REQUIREMENTS

To be eligible for admission, the following requirements must be met:

1. A maximum of 105 quarter or 70 semester units from an accredited college/university, which will be accepted as transfer credit, including units for clinical education. Students who have completed a hospital training program are allowed up to 50 quarter units of academic credit on the basis of their registry certificate.
2. Certification in medical radiography from the American Registry of Radiologic Technologists (ARRT).
3. A minimum of two years of full-time consecutive radiography work experience.

4. Completed statistics within the past five years.
5. Completed research methods within the past five years.
6. Completed all general education requirements, 12 quarter units. \*\*

\*\* A.S. to master's degree Track #1

## TWO TRACKS FOR ENTRANCE

Students enter the M.S. degree in radiation sciences two different ways. Track 1 allows the student to enter with an associate degree. In their first year, students take the online core of the Bachelor of Science degree in radiation sciences program, which includes required religion courses.

Students in good standing at the end of their first year will progress to the radiologist assistant curriculum in their second year and will be lock step with the Track 2 radiologist assistant students. At the end of three years, these students will be granted a B.S. degree and an M.S. degree, based on the course work done and the total number of units.

Track 2 allows students to enter with a bachelor's degree and begin their radiologist assistant curriculum in the first quarter of the program. For both tracks, general education requirements will be completed prior to beginning the program.

Junior Year		AS to	
		MS	Prior BS
AHCJ 328	Wholeness Portfolio I	1.0	
AHCJ 494	Senior Portfolio II	2.0	
AHCJ 498	Wholeness Portfolio II	1.0	
HCAD 305	Health Care Communication	4.0	
HCAD 316	Economics for Health Care Managers	4.0	
HCAD 336	Legal Environment of Health Care	4.0	
HCAD 374	Health Care Human Resources	4.0	
HCAD 464	Health Care Finance	4.0	
REL_4__	Upper Division Religion	4.0	
RELT 406	Adventist Beliefs and Life	2.0	
RTCH 325	Excel Basics for Managers	2.0	
RTCH 385	Radiologic Trends in Health Care	3.0	
RTCH 418	Health Information Management and Radiology Coding for Radiology Managers	4.0	
RTCH 464	Moral Leadership	4.0	
RTCH 467	Management of a Radiologic Service	3.0	
RTCH 471	Applied Research Methods I	2.0	
RTCH 472	Applied Research Methods II	1.0	
RTCH 485	Digital Management in Radiology	2.0	
Totals		51.0	—

<b>Senior Year, Autumn Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
AHCJ 519	Graduate Wholeness Portfolio	1.0	
REL_ 4__	Upper Division Religion	3.0	3.0
RTRA 425	Fluoroscopy and Radiation Protection	1.0	1.0
RTRA 426	Radiology Reporting	1.0	1.0
RTRA 431	Pharmacology I	2.0	2.0
RTRA 444	Pathophysiology	2.0	2.0
RTRA 471	Clinical Internship I	2.0	2.0
RTRA 521	Radiology Procedures and Image Evaluation I	3.0	3.0
Totals		15.0	14.0

<b>Winter Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
AHCJ 402	Pathology I	4.0	4.0
RTRA 432	Pharmacology II	2.0	2.0
RTRA 451	Patient Assessment I	2.0	2.0
RTRA 472	Clinical Internship II	5.0	5.0
RTRA 491	Cross-sectional Anatomy I	1.0	1.0
RTRA 522	Radiology Procedures and Image Evaluation II	3.0	3.0
Totals		17.0	17.0

<b>Spring Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
AHCJ 403	Pathology II	3.0	3.0
RTRA 452	Patient Assessment II	2.0	2.0
RTRA 473	Clinical Internship III	6.0	6.0
RTRA 476	Topics for the Radiologist Assistant	2.0	2.0
RTRA 492	Cross-sectional Anatomy II	1.0	1.0
RTRA 523	Radiology Procedures and Image Evaluation III	3.0	3.0
Totals		17.0	17.0

<b>First Year, Autumn Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
RELT 423	Loma Linda Perspectives	2.0-3.0	
Totals		2.0-3.0	—

<b>Graduate Year, Summer Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
RTRA 446	Clinical Management and Education	2.0	2.0
RTRA 524	Radiology Procedures and Image Evaluation IV	3.0	3.0
RTRA 571	Clinical Internship IV	6.0	6.0
Totals		11.0	11.0

<b>Autumn Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
AHCJ 566	Theoretical Foundations of Leadership		3.0
REL_ 5__	Graduate-level Religion	3.0	3.0
RTRA 572	Clinical Internship V	6.0	6.0
RTRA 591	Radiologist Assistant Research Project I	1.0	1.0
Totals		10.0	13.0

<b>Winter Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
RTCH 567	Leadership Theory and Practice	3.0	
RTRA 573	Clinical Internship VI	6.0	6.0
RTRA 588	Comprehensive Review	1.0	1.0
RTRA 592	Radiologist Assistant Research Project II	2.0	2.0
Totals		12.0	9.0

<b>Spring Quarter</b>		<b>AS to</b>	
		<b>MS</b>	<b>Prior BS</b>
AHCJ 519	Graduate Wholeness Portfolio		1.0
RTRA 384	Radiobiology and Health Physics	2.0	3.0
RTRA 424	Medical-Legal Issues in Radiology	1.0	
RTRA 574	Clinical Internship VII	6.0	6.0
RTRA 593	Radiologist Assistant Research Project III	2.0	2.0
Totals		11.0	12.0

<b>Other</b>		<b>AS to MS</b>		<b>Prior BS</b>
RTRA 424	Medical-Legal Issues in Radiology			
Totals		—	—	
<b>Overall Totals</b>		<b>146.0-147.0</b>	<b>93.0</b>	

# Rehabilitation Science—AH

Ph.D.

GRENITH J. ZIMMERMAN, Program Director

The School of Allied Health Professions offers the Doctor of Philosophy degree in rehabilitation science. The degree program by design is inclusive of the many rehabilitation professions and offers opportunities for qualified clinical professionals in allied health to prepare for careers in independent research, teaching, and administration. It is the goal of this program to prepare graduates who will:

- Provide vision and direction for the integration of the rehabilitation professions.
- Commit themselves to whole person care.
- Advance the theory and practice of rehabilitation science through research.
- Acquire and integrate knowledge related to the social and basic medical sciences.
- Assess, develop, and implement interdisciplinary community-based services.

## ADMISSION

Applicants must meet the following minimum requirements:

- Bachelor's or master's degree in any allied health professions area or discipline related to rehabilitation science.
- Minimum G.P.A. of 3.0 in academic and professional course work.

Prospective students are required to submit the following:

1. A formal letter of support from a primary research faculty member whose research interests and availability most closely match those of the applicant. The program director will coordinate meetings between applicants and prospective research faculty.
2. Curriculum vita, including work history, formal education, continuing education, licensure or certification, professional organizations, honors, awards, publications, presentations, and grants.
3. At least one example of written work (e.g., term paper, course assignment, publication, master's degree research project or thesis).

## REQUIREMENTS

A minimum of 114 units beyond the bachelor's degree is required for students holding a master's or doctoral degree in a professional area; up to 45 academic graduate-level quarter units taken in completion of the professional degree may be applicable to the Doctor of Philosophy degree. Application of these credits to the Doctor of Philosophy degree must be reviewed by the School of Allied Health Professions Doctor of Philosophy in Rehabilitation Science Committee prior to submission to the Faculty of Graduate Studies for approval. The student's program course work for the degree must be approved by the Doctor of Philosophy in Rehabilitation Science Committee.

**DOMAIN 1**

Political and professional advocacy

Units

RESC 515	Political and Professional Advocacy in Rehabilitation (3)	6 units minimum	6.0
RESC 516	Practicum in Advocacy (1 to 3)		
SPOL 613	Social Science Concepts I (4)		
SPOL 614	Social Science Concepts II (4)		
		Totals	6.0

**DOMAIN 2**

Theories and applications in health care systems and delivery

Units

AHCJ 545	Legal and Ethical Issues in the Health Professions (3)	3 units minimum	3.0
HADM 528	Organizational Behavior in Health Care (3)		
HADM 542	Managerial Accounting for Health Care Organizations (3)		
HADM 559	Health Care Marketing (3)		
HADM 564	Health Care Finance (3)		
HADM 575	Management Information Systems in Health Care (3)		
HADM 601	Health Systems-Operations Management (3)		
HADM 604	Health Systems Strategic Planning (3)		
OCTH 600	Occupational Science (3)		
OCTH 604	Health, Society, and Participation (3)		
RESC 519	Rehabilitation Theories and Applications in Health Care	Required	3.0
		Totals	6.0

**DOMAIN 3**

Determinants of health behavior

Units

EPDM 509	Principles of Epidemiology I (3)	6 units minimum	6.0
GLBH 517	Dynamics of Culture and Health (3)		
GLBH 548	Violence and Terrorism Issues (3)		
HPRO 509	Principles of Health Behavior (3)		
HPRO 515	Mind-Body Interactions and Health Outcomes (3)		
HPRO 526	Lifestyle Diseases and Risk Reduction (3)		
HPRO 588	Health Behavior Theory and Research (4)		
		Totals	6.0

**DOMAIN 4**

## Leadership and higher education

Units

AHCJ 506	Educational Evaluation and Clinical Assessment (3)	6 units minimum	6.0
AHCJ 509	Teaching and Learning Styles (3)		
AHCJ 515	Curriculum Development in Higher Education (3)		
AHCJ 551	Professional Systems in Management I (3)		
AHCJ 556	Administration in Higher Education (3)		
AHCJ 564	Collaborative Learning in Higher Education (3)		
AHCJ 599	Directed Teaching (3)		
NRSG 544	Teaching and Learning Theory (3)		
NRSG 555	Pharmacology in Advanced Practice I (3)		
OCTH 605	Education in Occupational Therapy (3)		
OCTH 606	Leadership in Occupational Therapy (3)		
Totals			6.0

**Religion**

Include 9 units of religion, chosen from the following ethical, theological, and relational courses (other religion courses selected in consultation with the program director)

Units

RELE 524	Bioethics and Society (3)	3 unit minimum	3.0
RELE 525	Ethics for Scientists (3)		
RELR 525	Health Care and the Dynamics of Christian Leadership (3)	3 unit minimum	3.0
RELR 535	Spirituality and Mental Health (3)		
RELR 536	Spirituality and Everyday Life (3)		
RELT 557	Theology of Human Suffering (3)	3 unit minimum	3.0
RELT 563	Health Care, Humanity, and God (3)		
Totals			9.0

**Research and dissertation**

Didactic course work (12 units minimum)

Units

RESC 697	Research (1.0-12.0)		24.0
AHCJ 605	Critical Analysis of Scientific Literature (2)	9 units minimum	9.0
HPRO 589	Qualitative Research Methods (3)		
MFAM 502	Research Tools and Methodology: Qualitative (3)		
PHTH 535	Research and Statistics I (3)		
STAT 515	Grant- and Contract-Proposal Writing (3)		
STAT 535	Introduction to Modern Nonparametric Statistics (3)		
STAT 564	Survey and Advanced Research Methods (3)		
STAT 568	Data Analysis (3)		

MFTH 601	Statistics I (4)	No more than one of these courses	3.0-4.0
PHTH 536	Research and Statistics II (3)		
PSYC 502	Advanced Statistics II (4)		
STAT 514	Intermediate Statistics for Health-Science Data (3)		
Totals			36.0-37.0
<b>Overall Totals</b>			<b>69.0-70.0</b>

## COMPREHENSIVE EXAMINATIONS

The written comprehensive examination is designed to establish that the student has a broad understanding of rehabilitation science. A student is eligible to take the written examination after completing a minimum of 30 quarter units of course work, including 6 units from each of the four core domains and 6 units in research and statistics.

The oral examination is designed to establish that the student has adequate foundational information in appropriate content areas, as well as a plan to answer a research question appropriate for a doctoral dissertation. Following successful completion of the written comprehensive examination, the oral examination will be scheduled by the student's research mentor in consultation with the program director. Questions for the examination will be over the student's research proposal and the content areas on which the proposal rests.

## ADVANCEMENT TO CANDIDACY

The student may apply for admission to doctoral candidacy after (a) passing the written and oral comprehensive examinations; and (b) securing the approval of his or her research advisory committee.

## DISSERTATION

The candidate's capacity for independent investigation and scholarly achievement must be demonstrated by the presentation and oral defense of an acceptable dissertation, usually resulting in two-to-three publications. One paper must be accepted for publication before the candidate's graduation.

## GENERAL REQUIREMENTS

For information about requirements and practices to which all graduate students are subject, the student should consult the Policies and General Regulations in Section II and the School of Allied Health Professions in Section III.

# Respiratory Care—AH

Certificate, B.S. (traditional, postprofessional)

DAVID LOPEZ, Chair, Department of Cardiopulmonary Sciences; Director, Postprofessional B.S. Program

DAVID M. STANTON, Program Director for Certificate and Entry-Level B.S.

KATHERINE GATTUSO, Director of Clinical Education, B.S.

RICHARD D. NELSON, Program Director, Riyadh, Saudi Arabia Campus

N. LENNARD SPECHT, Medical Director

## FACULTY

Alan Alipoon

Kate Gattuso

David Lopez

Arthur Marshak

Charles B. Spearman

N. Lennard Specht

David M. Stanton

## CLINICAL/CONTRACT FACULTY

G. Ophelia Brooks

Raquel M. Calderone-Vizcaino

Jeffrey Caliva

Mohamed M. Elhanafy

Beth Elliot

Michael Hagelantz

Tony (Pauline) Hilton

Samuel T. Huong

Linda Houston-Feenstra

Leo M. Langga

Michael Lum

Traci L. Marin

Richard D. Nelson

Ehren Ngo

Michael D. Pearson

Curtis Powell

Mark S. Rogers

Douglas Roth

Loreen K. Scott

Lindsey Simpson

Marco Soto

Thomas W. Taylor, Jr.

Michael Terry

Carter K. Tong

Respiratory care is an allied health profession that promotes health and improvement in the cardiopulmonary function of people with heart and lung abnormalities and disease. Newborn, pediatric, adult, and elderly patients are treated for a wide range of problems—infant respiratory distress syndrome; trauma; cardiopulmonary arrest; conditions brought on by shock; postoperative surgical complications; and respiratory diseases such as pneumonia, asthma, cystic fibrosis, chronic bronchitis, and emphysema.

The respiratory care practitioner is a member of the health care team in medical centers, skilled nursing facilities, outpatient rehabilitation programs, physician offices, and in-home care. Many are involved in research and development of new and innovative care and equipment. They are effective communicators and compassionate caregivers, possessing an awareness of cultural sensitivity and diversity. They have leadership roles in patient education, wellness intervention, and development of respiratory care plans. Respiratory care professionals apply critical-thinking skills in cardiopulmonary diagnostics and patient assessment to optimize decision making and delivery of patient care. In a time of high technology, increasing growth of the elderly population, and increasing numbers of patients with asthma and chronic lung disease, there is a greater demand for educated and skilled respiratory care practitioners.

### **PROFESSIONAL ACCREDITATION, LICENSURE, AND CREDENTIALING**

Respiratory Care Program accreditation is provided by the Commission on Accreditation for Respiratory Care (CoARC). Standards and guidelines published by CoARC must be met, relevant to general and respiratory care education and to ongoing program assessment and improvement. Inquiries regarding CoARC can be directed to 1248 Harwood Road, Bedford, TX 76021-4244; telephone, 817/283-2835; or Web site, <coarc.com>. The Respiratory Care Program at Loma Linda University is CoARC accredited.

Graduates of CoARC-accredited respiratory care programs must apply to the state of California Department of Consumer Affairs Respiratory Care Board (RCB) for a license to practice in the state. The RCB requires that graduates of respiratory care programs complete general and respiratory care education courses with grades of C or above, resulting in a minimum of an Associate in Science degree in respiratory care. Graduates must successfully complete an examination for licensure, declare felony convictions, and undergo fingerprinting. License denial may occur due to prior felony conviction(s). Inquiries regarding the RCB can be directed to 444 North 3rd Street, Suite 270, Sacramento, CA 95811; telephone, 916/323-9983; FAX, 916/323-9999; or Web site, <rcb.ca.gov> or <RCBinfo@dca.ca.gov>.

The National Board for Respiratory Care, Inc. (NBRC), provides nationally recognized credentialing examinations for graduates of accredited respiratory care programs. Those who successfully complete the entry-level examination receive the certified respiratory therapist (CRT) credential. This examination is currently required by the state of California for licensure to practice respiratory care. Advanced practitioner examinations are required for the registered respiratory therapist (RRT) credential, neonatal-pediatric specialist certification (NPS), and certified (CPFT) and registered (RPFT) pulmonary function technologist. NBRC inquiries can be made to 18000 West 105th Street, Olathe, KS 66061; telephone, 913/895-4900; FAX, 913/895-4650; or Web site, <nbr.org>.

### **PROFESSIONAL ASSOCIATION**

The American Association for Respiratory Care (AARC) encourages students and graduates to become members and participate in national meetings and local chapters. The AARC's aim is to foster professional growth, encourage research, and provide services and representation for its members. Further information may be obtained from the national office, 9425 North MacArthur Boulevard, Suite 100, Irving, TX 75063; telephone, 972/243-2272; or Web site <aarc.org>.

The California Society for Respiratory Care (CSRC), an affiliate of the AARC, is a nonprofit professional organization whose mission is to represent and encourage excellence in the art and science of cardiopulmonary support.

The CSRC is committed to health, healing, and disease prevention in the California community. The society extends these concepts to its members, students, health care professionals, and the public through education and clinical practice. Further information may be obtained from the CSRC at 1961 Main Street, Suite 246, Watsonville, CA 95076; telephone, 888/730-2772; FAX, 831/763-2814; or Web site, <csrc.org>.

## **RESPIRATORY CARE—CERTIFICATE**

### **CPR certification**

Students are required to have current health care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health care provider level. This may be completed prior to beginning the program of study or may be obtained at Loma Linda University. Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

### **Admission**

To be eligible for admission, the applicant must have completed a minimum of 96 quarter units (64 semester units) from an accredited college or university, or its equivalent from a foreign education program.

### **Prerequisite**

Human anatomy and physiology or general biology with laboratory, complete sequence

Microbiology with laboratory

Introductory chemistry with laboratory, complete sequence; or general chemistry with laboratory, complete sequence

High school-level physics or introductory physics, one quarter/semester in college; or general physics, one quarter/semester in college

Two years of mathematics selected from: algebra I (elementary), algebra II (intermediate), or geometry. Course work may be taken in high school or college.

General psychology

English composition, complete sequence

Introduction to computers (high school or college)

### **Recommended course work**

Speech

### **Required minimum grade**

All course work must have a grade of C (2.0) or better.

### **Professional eligibility**

Upon completion of the curriculum, graduates are eligible to pursue all credentialing examinations offered by the National Board for Respiratory Care (NBRC). Inquiries to NBRC can be made to 8310 Nieman Road, Lenexa, KS 66211-1579; telephone, 913/599-4200; email: <nbrc-info@nbrc.org>; or Web site, <nbrc.org>.

## Fees

- \$216 Lindsey Jones Publishers of Science and Medicine, Respiratory Therapy Credentialing Exams Review
- \$190 Pediatric advanced life support course and text
- \$195 Neonatal resuscitation and text
  
- A total of \$601 is applied to RSTH 393 summer term
- \$40 Written Registered Respiratory Therapist-Self Assessment Examination (applied year two to RSTH 496)

## Equivalency examination/evaluation of credit

Applicants who have comparable education or experience may be able to gain credit toward the certificate by equivalency examination or evaluation of credit on an individual basis. Loma Linda University reserves the right to assess the respiratory care knowledge base and competencies of each applicant by assessment examination(s).

A Loma Linda University grade-point average of C (2.0) is required for all courses in the program. (See Section IV for course descriptions.)

## RESPIRATORY CARE—B.S.

Loma Linda University offers two Bachelor of Science degree curricula in respiratory care. The first curriculum is for students who have had no previous education in respiratory care and who have completed the program prerequisites listed below. The second curriculum is for students who have an Associate in Science degree in respiratory care from a CoARC-accredited respiratory care program and who wish to earn a Bachelor of Science degree in respiratory care.

### The program

The two-year, upper division curriculum leading to the Bachelor of Science degree is a sequence of professional course work intended to prepare competent respiratory therapists with advanced abilities in clinical care. Course work may be designed toward meeting entrance requirements for the Dentistry, Medicine, and Physician Assistant programs.

### Program objectives

Upon completion of the curriculum, the graduate should:

1. Collect and review pertinent clinical information and suggest and implement diagnostic procedures, according to age-specific criteria.
2. Select, obtain, assemble, maintain, and correct malfunctions on all respiratory therapy equipment.
3. Administer medications via aerosol, subcutaneous, and other appropriate routes of delivery, according to age-specific criteria.
4. Apply current and advanced respiratory care concepts and treatment plans in the areas of ventilatory support systems (invasive and noninvasive), medical gas therapy, gas exchange therapy, airway care, and advanced resuscitation techniques, according to age-specific criteria.
5. Assist the physician in the performance of all diagnostic or therapeutic procedures related to cardiopulmonary function.
6. Function as an efficient member of the interdisciplinary team.

7. Demonstrate advanced knowledge and clinical skill in specialty areas selected from

- neonatal/pediatric critical care
- adult critical care
- cardiopulmonary diagnostics
- hyperbaric medicine
- sleep disorders medicine
- cardiopulmonary rehabilitation
- extended care

### Program outcomes

In addition to the stated institutional learning outcomes, the respiratory care student is expected to meet the following learning outcomes:

1. Demonstrate basic cardiopulmonary knowledge in respiratory care.
2. Demonstrate advanced knowledge and clinical skills in respiratory care practice.
3. Demonstrate critical-thinking skills in respiratory care.
4. Pass the NBRC Written Registered Respiratory Therapist Self-Assessment Examination (WRRT-SAE). Required for on-time graduation.

### Admission

To be eligible for admission, the applicant must:

1. Complete the subject requirements noted as prerequisites (students who have not completed these requirements may be accepted on a provisional basis); and
2. Arrange for an interview at the University by appointment (an off-campus or telephone interview can be arranged for the distant student).

### Prerequisite

**Humanities**—20 quarter (14 semester) units minimum (choose minimum of three areas from: history, literature, philosophy, foreign language, art/music appreciation or art/music history)

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

**Natural Sciences**—Human anatomy and physiology with laboratory, complete sequence; or general biology with laboratory, complete sequence; microbiology with laboratory; introductory chemistry with laboratory, complete sequence; or general chemistry with laboratory, complete sequence

High school-level physics or introductory physics, one quarter/semester in college; or general physics, one quarter/semester in college

Two years high school mathematics with grades of C or above or intermediate algebra in college

**Social Sciences**—12 quarter (8 semester) units minimum with required course work of introductory or general psychology, and cultural anthropology or an approved course dealing with cultural diversity. An additional course meeting the social sciences unit requirement may be selected from the following: sociology (recommended), political science, economics, or geography.

**Communications**—English composition, complete sequence; speech  
Computers

**Health and Wellness**—Personal health or nutrition

Two physical activity courses

Electives to meet minimum total requirement of 82 quarter (55 semester) units

For total unit requirements for graduation, see Division of General Studies, LLU General Education Requirements (Section II).

<b>Junior Year, Autumn Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 311	Medical Terminology	2.0	2.0
AHCJ 326	Fundamentals of Health Care	2.0	2.0
AHCJ 328	Wholeness Portfolio I		1.0
RSTH 304	Cardiopulmonary Anatomy and Physiology	4.0	4.0
RSTH 331	Pharmacology I	2.0	2.0
RSTH 334	Patient Assessment	2.0	2.0
RSTH 341	Respiratory Therapy Science I	5.0	5.0
Totals		17.0	18.0

<b>Winter Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 402	Pathology I		4.0
RSTH 332	Pharmacology II	2.0	2.0
RSTH 342	Respiratory Therapy Science II	5.0	5.0
RSTH 366	Diagnostic Techniques	3.0	3.0
RSTH 381	Cardiopulmonary Diseases I	2.0	2.0
RSTH 391	Respiratory Care Practicum I	2.0	2.0
Totals		14.0	18.0

<b>Spring Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 305	Infectious Disease and the Health Care Provider	1.0	1.0
AHCJ 403	Pathology II		3.0
RELE 457	Christian Ethics and Health Care	2.0	2.0
RSTH 323	Pulmonary Function Methodology	3.0	3.0
RSTH 343	Respiratory Therapy Science III	4.0	4.0
RSTH 382	Cardiopulmonary Diseases II	2.0	2.0
RSTH 392	Respiratory Care Practicum II	2.0	2.0
Totals		14.0	17.0

<b>Senior Year, Summer Quarter</b>		<b>Cert</b>	<b>BS</b>
EMMC 316	12-Lead ECG Interpretation	2.0	2.0
RELT 406	Adventist Beliefs and Life		2.0
RSTH 393	Respiratory Care Practicum III	4.0	4.0
RSTH 404	Critical Care	4.0	4.0
Totals		10.0	12.0

<b>Autumn Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 465	Seminars in Leadership		2.0
AHCJ 471	Statistics and Research for Health Professionals I		3.0
AHCJ 498	Wholeness Portfolio II		1.0
RSTH 354	Case Studies in Adult Respiratory Care	2.0	2.0
RSTH 421	Perinatal and Pediatric Respiratory Care	2.0	2.0
RSTH 434	Advanced Patient Assessment	2.0	2.0
RSTH 441	Respiratory Therapy Science IV	3.0	3.0
RSTH 494	Respiratory Care Practicum IV	2.0	2.0
Totals		11.0	17.0

<b>Winter Quarter</b>		<b>Cert</b>	<b>BS</b>
AHCJ 472	Statistics and Research for Health Professionals II		3.0
RELR 475	Art of Integrative Care		2.0
RSTH 422	Advanced Perinatal and Pediatric Respiratory Care	2.0	2.0
RSTH 424	Exercise Physiology and Pulmonary Rehabilitation	3.0	3.0
RSTH 444	Case Studies in Neonatal/Pediatric Respiratory Care	2.0	2.0
RSTH 466	Advanced Diagnostic Techniques		2.0
RSTH 495	Respiratory Care Practicum V	2.0	2.0
Totals		9.0	16.0

<b>Spring Quarter</b>		<b>Cert</b>	<b>BS</b>
EMMC 315	Cardiology	3.0	3.0
RELT 416	God and Human Suffering		2.0
RSTH 464	Case Management in Respiratory Care		2.0
RSTH 471	Instructional Techniques I		2.0
RSTH 474	Cardiopulmonary Health Promotion and Disease Prevention		2.0
RSTH 496	Respiratory Care Practicum VI	3.0	3.0
Totals		6.0	14.0
<b>Overall Totals</b>		<b>81.0</b>	<b>112.0</b>

A minimum of 192 quarter units are required for the Bachelor of Science degree in respiratory care.

### **RESPIRATORY CARE—B.S. (POSTPROFESSIONAL)**

Loma Linda University offers two Bachelor of Science degree curricula in respiratory care. The second curriculum is for students who have an Associate in Science degree in respiratory care from a CoARC-accredited respiratory care program and who wish to earn a Bachelor of Science degree in respiratory care.

The two-year, upper division curriculum leading to the Bachelor of Science degree is a sequence of professional course work intended to prepare respiratory care practitioners for leadership positions in education, management, or advanced clinical practice. Course work may be applied toward meeting entrance requirements for dentistry, medicine, and other graduate programs.

Those electing to study on a part-time basis must complete the junior and senior years within a four-year period.

## The program

The two-year, upper division program leading to the Bachelor of Science degree is a sequence of professional course work intended to graduate individuals who have acquired advanced knowledge in the respiratory care profession, including assessment, therapeutic interventions, and management of patients with cardiopulmonary-related disorders; and who uphold the standards of the mission and goals of the School of Allied Health Professions.

## Program goals

The goals of the curriculum are to:

1. Provide therapists to the respiratory care and medical communities who have advanced practice training in cardiopulmonary care and fundamental knowledge in the areas of leadership and education.
2. Provide an undergraduate program for two-year-level respiratory therapists that enhances and broadens their knowledge in cardiopulmonary health care sciences and general studies, and allows progression into graduate programs.

## Program objectives

Upon completion of the curriculum, the graduate should:

1. Apply fundamental and advanced adult, pediatric, and neonatal respiratory care concepts and treatment plans in the areas of pathophysiology, diagnostics and advanced interventions, gas exchange therapy, medical gas therapy, airway care, and ventilatory support systems (invasive and noninvasive).
2. Apply problem-solving skills in the areas of advanced pulmonary physiology, related diagnostics, and comprehensive pulmonary rehabilitation programs.
3. Perform fundamental and advanced patient assessment and diagnostic skills for various cardiopulmonary diseases.
4. Develop fundamental skills to conduct and interpret research in the health care arena.
5. Develop fundamental skills in leadership.
6. Develop fundamental skills in topic presentation to the health care profession and patient-care community, using appropriate lecture and demonstration techniques.

## Program outcomes

In addition to the stated institutional learning outcomes, the postprofessional respiratory care student is expected to meet the following curriculum learning outcomes:

1. Demonstrate advanced knowledge in respiratory care.
2. Demonstrate advanced leadership skills.
3. Demonstrate critical-thinking skills in respiratory care practice.

## Admission

To be eligible for admission, the applicant must:

1. Be a graduate of a CoARC-approved or provisionally approved, or CoARC-approved advanced practitioner associate degree (or the equivalent) program in respiratory care;

2. Complete the subject requirements noted as prerequisites (students who have not completed these requirements may be accepted on a provisional basis); and,
3. Arrange for an interview at the University by appointment (an off-campus interview can usually be arranged for the distant student).

### Prerequisite

Humanities—20 units minimum (choose minimum of three areas; history, literature, philosophy, foreign language, art/music appreciation, or art/music history)

Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

Human anatomy and physiology with laboratory, complete sequence; or general biology with laboratory, complete sequence; or general zoology with laboratory, complete sequence

Microbiology with laboratory

Introductory chemistry with laboratory or general chemistry with laboratory

High school-level physics; or introductory physics, one quarter/semester in college; or general physics, one quarter/semester in college

Two years of high school mathematics with grades of C or above or intermediate algebra in college

General psychology or sociology

Cultural anthropology or an approved course dealing with cultural diversity

Select 4 more quarter units from sociology, psychology, economics, geography, political science

English composition, complete sequence

Speech

Computers

Personal health or nutrition

Two physical activity courses

Electives to meet minimum total requirement of 96 quarter units

For total unit requirements for graduation, see Division of General Studies, LLU General Education Requirements (Section II).

### Electives

The senior project is a culminating body of work, developed by the student in consultation with the program director and presented to the department faculty. Work may be a research paper, clinical presentation, management project, or other project approved by the program director.

Senior Year, Autumn Quarter		Units
AHCJ 328	Wholeness Portfolio I	1.0
AHCJ 465	Seminars in Leadership	2.0
AHCJ 498	Wholeness Portfolio II	1.0
RSTH 301	Advanced Respiratory Therapy Science I	3.0
RSTH 422	Advanced Perinatal and Pediatric Respiratory Care	2.0
RSTH 434	Advanced Patient Assessment	2.0
Totals		11.0

<b>Winter Quarter</b>		<b>Units</b>
AHCJ 402	Pathology I	4.0
AHCJ 471	Statistics and Research for Health Professionals I	3.0
RSTH 424	Exercise Physiology and Pulmonary Rehabilitation	3.0
RSTH 431	Senior Project I	2.0
RSTH 466	Advanced Diagnostic Techniques	2.0
RSTH 485	Evidenced-Based Medicine in Respiratory Care	4.0
<b>Totals</b>		<b>18.0</b>
<b>Spring Quarter</b>		<b>Units</b>
AHCJ 403	Pathology II	3.0
AHCJ 472	Statistics and Research for Health Professionals II	3.0
EMMC 315	Cardiology	3.0
EMMC 316	12-Lead ECG Interpretation	2.0
RSTH 401	Cardiopulmonary Intensive Care	2.0
RSTH 432	Senior Project II	2.0
RSTH 471	Instructional Techniques I	2.0
RSTH 486	Evidenced-Based Medicine in Respiratory Care II	4.0
<b>Totals</b>		<b>21.0</b>
<b>Summer Quarter</b>		<b>Units</b>
RSTH 433	Senior Project III	2.0
RSTH 451	Respiratory Care Affiliation I	2.0
RSTH 487	Evidenced-Based Medicine in Respiratory Care III	4.0
<b>Totals</b>		<b>8.0</b>
<b>Overall Totals</b>		<b>58.0</b>

## School Certificates

A certificate is defined as a document of completion of a nondegree educational experience. School of Allied Health Professions school certificates are awarded upon completion of organized programs of study at the postsecondary level. Currently, four school certificates are offered.

Students registering in one of these school certificate programs register through the Office of University Records for the courses, but the certificate is issued by the School of Allied Health Professions, not Loma Linda University. The Records Office maintains a record of registration but not the certificate. Records of the certificate and its awarding are maintained by the sponsoring department in the School of Allied Health Professions.

Financial aid is NOT available to students registered in school certificate programs. These programs do not meet necessary requirements established by the U.S. Department of Education for aid eligibility.

# Computed Tomography (CT)—AH

## School Certificate

STEVEN L. LEBER, Program Director

### OVERVIEW OF PROGRAM

The computed tomography technologist works in a highly specialized field operating sophisticated computerized tomography equipment. This technology provides detailed cross-sectional images of the human body, assisting physicians with quality patient diagnosis and treatment.

This is a full-time, six-month certificate program completed in two quarters—Fall and Winter. Fall Quarter starts at the end of September and Winter Quarter ends around the middle of March. During the program, students take formal course work along with clinical instruction. It is a full-time program with no arrangements for part-time or evening status. Clinical sites are available, but the student is not guaranteed placement close to the student's residence.

The program requires forty hours per week, which includes didactic and clinical experience. Clinical experience includes four eight-hour days per week. Classes are scheduled for one day per week and may require the student to be on campus.

The program also offers a combined nine-month CT/MRI curriculum. Interested applicants should check the appropriate box on the application.

### PROGRAM OUTCOMES

Upon completion of the program, the graduate should :

1. Be a knowledgeable professional in the field of study.
2. Demonstrate leadership and critical thinking in all areas of CT scanning.
3. Behave with ethical standards as a professional CT technologist.
4. Positively interact and communicate with patients, department personnel, and professional staff.
5. Maintain skills and knowledge by interacting with fellow professionals, attending educational conferences, and staying current with changing technology.

### THE CT STUDENT PROFILE

- Enthusiastic and interested in maintaining high standards of academics, clinical performance, and patient care.
- Possesses a broad knowledge of human anatomy and computer skills.
- Demonstrates strong academic performance in science and related courses.
- Is detail oriented, able to work under pressure, and demonstrates critical-thinking and problem-solving skills.

The applicant should submit meaningful recommendations from prior teachers, work supervisors, or health professionals who are knowledgeable about their qualifications. An applicant who is completing a program in radiologic technology prior to the start of the program may apply as long as they have completed ARRT, CRT, and CPR requirements by the program start date.

## PROGRAM REQUIREMENTS

1. Current ARRT Registry in Radiation Technology (RT)
2. Current California (CRT) license
3. Current CPR card with the American Heart Association
4. A minimum G.P.A. of 2.5 maintained in all didactic and clinical course work.

## OBSERVATION EXPERIENCE

A minimum of eight hours of career observation in CT is required. The career observation form is available as a download from the forms page on the Web site.

## APPLICATION PROCEDURE

1. Application should include a statement of purpose, application fee, three recommendations, and transcripts. Official transcripts must come directly from other schools to the School of Allied Health Professions admissions office.
2. Applications are accepted starting January of each year.
3. Deadline for applications is May 1.

## INTERVIEWS

Interviews are conducted towards the end of May. All applicants will be interviewed by the program director and representatives of the School of Allied Health Professions. Applicants residing in southern California should plan for a personal interview. Applicants will be notified by phone or email of their interview schedule.

The interviews are rated in the following four areas:

1. Work experience or training background
2. Recommendations
3. Academic background
4. Communication skills, knowledge, motivation, etc.

## SELECTION

After all applicants have been interviewed, the selection committee for the CT program meets to make the final selections. Selections are usually decided by the middle of June, and confirmation of each decision is mailed to the respective applicant from the Office of Admissions for the School of Allied Health Professions.

## ACCEPTANCE

Accepted applicants are notified by the end of June.

Autumn Quarter		CT	CT & MRI
RTSI 364	CT Patient Care and Procedures	2.0	2.0
RTSI 369	CT Physics	2.0	2.0
RTSI 971	Special Imaging (CT/MRI) Affiliation I	10.0	10.0
Totals		14.0	14.0

<b>Winter Quarter</b>		<b>CT</b>	<b>CT &amp; MRI</b>
RTSI 361	MRI Physics I		2.0
RTSI 367	Cross-sectional Radiographic Anatomy	2.0	2.0
RTSI 972	Special Imaging (CT/MRI) Affiliation II	10.0	10.0
Totals		12.0	14.0

<b>Spring Quarter</b>		<b>CT</b>	<b>CT &amp; MRI</b>
RTSI 362	MRI Physics II		2.0
RTSI 365	MRI Patient Care and Procedures		2.0
RTSI 973	Special Imaging (CT/MRI) Affiliation III		10.0
Totals		—	14.0
<b>Overall Totals</b>		<b>26.0</b>	<b>42.0</b>

# Dietary Management—AH

## School Certificate

The dietary manager's certification course is designed for the extended care dietary manager who needs Dietary Managers Association certification as required by law. This is an online program with three didactic components—including, management, sanitation, and clinical nutrition providing 150 hours of didactic instruction. A supervised practice component of 150 hours is also part of the program. The course is approved by the Dietary Management Association.

Certified dietary managers are nationally recognized experts at managing dietary operations. They are trained to manage menus, food purchasing, and food preparation; and to apply nutrition principles, document nutrition information, ensure food safety, manage work teams, and provide leadership in the department.

## CERTIFICATION GOALS

1. Provide formal education and training for the dietary manager to qualify the graduate to take the certification examination of the Dietary Managers Association.
2. Develop professional competency and leadership skills to serve as director of a dietary department in health care organizations.
3. Provide continuing professional education for the dietary manager.

## STUDENT LEARNING OUTCOMES

1. Recognizes legal, professional requirements and qualifies as a certified dietary manager.
2. Demonstrates competency as an effective dietary manager.
3. Serves as a leader in his/her role in the dietary department.
4. Provides high-quality food and nutrition service to clients in the health care organization.

## ADMISSION

Admission is open to individuals who are currently dietary managers or who desire to enter the profession. There are no prerequisites; some preparation courses in English, mathematics, accounting, management, and nutrition are desirable but not required. Online application is required.

## PROGRAM OF INSTRUCTION

The certification program is offered via an online format. Students will complete an online orientation session prior to beginning the program.

Required		Units
DTCH 246	Nutrition Care in Long-term Care	3.0
DTCH 276	Nutrition Care Management in Long-term Care	3.0
DTCH 277	Sanitation and Safety for the Dietary Manager	2.0
DTCH 278	Supervised Practice in Dietary Management	2.0
Totals		10.0
<b>Overall Totals</b>		<b>10.0</b>

# Magnetic Resonance Imaging (MRI) – AH

## School Certificate

STEVEN L. LEBER, Program Director

### OVERVIEW OF PROGRAM

Magnetic resonance imaging technologists work in a highly specialized field operating sophisticated computerized equipment. They provide detailed cross-sectional images of the human body, assisting physicians with quality patient diagnosis and treatment.

This is a full-time, six-month certificate program that requires two quarters—Winter and Spring. The program starts in January and ends around the middle of June. During the program, students take formal course work along with clinical instruction. There are no arrangements for part-time or evening status. Clinical sites are available, but the student is not guaranteed placement close to his/her residence.

The program requires 40 hours per week, which includes didactic and clinical experience. Clinical experience involves four eight-hour days per week. Classes are scheduled for one day per week and may require the student to be on campus.

A combined nine-month MRI/CT curriculum is also offered. Interested applicants should check the appropriate box on the application.

### PROGRAM OUTCOMES

Upon completion of the program, the graduate should be qualified to:

1. Be a knowledgeable professional in the field of study.
2. Demonstrate leadership and critical thinking in all areas of MRI scanning.
3. Behave with ethical standards as a professional MRI technologist.
4. Positively interact and communicate with patients, department personnel, and professional staff.
5. Maintain skills and knowledge by interacting with fellow professionals, attending educational conferences, and staying current with changing technology.

### THE MRI STUDENT PROFILE

1. Enthusiastic and interested in maintaining high standards of academics, clinical performance, and patient care.
2. Possesses a broad knowledge of human anatomy and computer skills.
3. Demonstrates strong academic performance in science and related courses.
4. Detail oriented, able to work under pressure, and demonstrates critical-thinking and problem-solving skills.

The applicant should submit meaningful recommendations from prior teachers, work supervisors, or health professionals who are knowledgeable about their qualifications. An applicant who is completing a program in radiologic technology prior to the start of the program may apply as long as s/he has completed ARRT, CRT, and CPR requirements by the program start date.

## PROGRAM REQUIREMENTS

- Current ARRT registry in radiation technology (RT)
- Current California (CRT) license
- Current CPR card with the American Heart Association
- A minimum G.P.A. of 2.5 maintained in all didactic and clinical course work.

## OBSERVATION EXPERIENCE

A minimum of eight hours of career observation in MRI is required. The career observation form is available as a download from the forms page on the Web site.

## APPLICATION PROCEDURE

1. Applications are accepted starting January of each year.
2. Deadline for applications is May 1. The program starts the following January.
3. Application should include a statement of purpose, application fee, three recommendations and transcripts. Official transcripts must come directly from other schools to the School of Allied Health Professions admissions office.

## INTERVIEWS

Interviews are conducted towards the end of May. All applicants will be interviewed by the program director and representatives of the School of Allied Health Professions. Applicants residing in southern California should plan for a personal interview. Applicants will be notified by phone and/or -mail of their interview schedule. Interviews are rated in the following four areas:

- Work experience or training background
- Recommendations
- Academic background
- Communication skills, knowledge, motivation, etc.

## SELECTION

After all applicants have been interviewed, the selection committee for the MRI program meets to make the final selections. Selections are usually decided by the middle of June, and confirmation of each decision is mailed to the respective applicant from the Office of Admissions for the School of Allied Health Professions.

## ACCEPTANCE

Applicants accepted for the following Winter Quarter are notified by the end of June.

Autumn Quarter		MRI	CT & MRI
RTSI 364	CT Patient Care and Procedures		2.0
RTSI 369	CT Physics		2.0
RTSI 971	Special Imaging (CT/MRI) Affiliation I		10.0
Totals		—	14.0

<b>Winter Quarter</b>		<b>MRI</b>	<b>CT &amp; MRI</b>
RTSI 361	MRI Physics I	2.0	2.0
RTSI 367	Cross-sectional Radiographic Anatomy	2.0	2.0
RTSI 972	Special Imaging (CT/MRI) Affiliation II	10.0	10.0
Totals		14.0	14.0

<b>Spring Quarter</b>		<b>MRI</b>	<b>CT &amp; MRI</b>
RTMR 381	Topics in Medical Radiography I	2.0	2.0
RTSI 362	MRI Physics II	2.0	2.0
RTSI 973	Special Imaging (CT/MRI) Affiliation III	10.0	10.0
Totals		14.0	14.0
<b>Overall Totals</b>		<b>28.0</b>	<b>42.0</b>

# Phlebotomy—AH

## School Certificate

RODNEY ROATH, Chair, Department of Clinical Laboratory Science

TERI J. ROSS, Program Director

PAUL C. HERRMANN, Medical Director

Procedures in phlebotomy are designed to train individuals to collect blood for laboratory analysis, which is necessary for the diagnosis and care of the patient. Ideal for health professionals seeking to expand their current skills, or for those interested in a profession in laboratory medicine, this training program is approved by the California Department of Public Health, Laboratory Field Services. The School of Allied Health Professions issues a certificate in phlebotomy to successful participants.

## THE PROGRAM

The program trains the modern phlebotomist to perform venipuncture and capillary punctures. Topics include medical terminology, laboratory safety, basic anatomy and physiology, quality assurance methods, and medicolegal issues of phlebotomy. A minimum of forty hours of supervised clinical experience is available at Loma Linda University Medical Center and other medical affiliates, allowing participants to achieve proficiency in the health care setting.

## ACCREDITATION

The program is approved by the California Department of Public Health (CDPH), Laboratory Field Services (LFS), 850 Marina Bay Parkway, Building P, 1st Floor, Richmond, CA 94804-6403; telephone: 510/620-3792; Web site: <[cdph.ca.gov/programs/lfs](http://cdph.ca.gov/programs/lfs)>.

## PROFESSIONAL REGISTRATION

Upon successful completion of the certificate program, participants receive a certificate of completion in phlebotomy and are eligible to take examinations such as the national certifying examination offered by the Board of Certification, American Society of Clinical Pathologists (ASCP), 33 W. Monroe Ste. 1600, Chicago, IL 60603; telephone, 800/267-2727; Web site: <[ascp.org](http://ascp.org)> or the National Center for Competency Testing (NCCT), 7007 College Boulevard, Overland Park, Suite 705, KS 66211; telephone: 800/875-4404; Web site: <[ncctinc.com](http://ncctinc.com)>; or any others recognized by the state of California.

## ADMISSION

To be eligible for admission, the applicant must be 18 years of age or older and have a high school diploma or GED. All registrants must have current immunizations (measles, mumps, rubella, tetanus) PPD skin test, proof of hepatitis B vaccine, CPR (American Heart Association) Basic Life Support Certificate; and must pass a background check.

## HOW TO APPLY

Complete an online application at <[llu.edu/central/apply](http://llu.edu/central/apply)>.

<b>Required</b>		Units
AHCJ 105	Procedures in Phlebotomy	5.0
		Totals 5.0
		<b>Overall Totals 5.0</b>

# Radiography Advanced Placement—AH

## School Certificate

ANDREW SHEPARD, Program Director

### FACULTY

Laura Alipoon

Mark Clements

Will Edmunds

Timothy Seavey

Andrew Shepard

The purpose of the Radiography Advanced Placement Program is to enable candidates to be able to take the American Registry of Radiologic Technologists (ARRT) examination if they need to "regraduate" from a radiography program due to failing the registry examination, or graduate from a U.S. program for the first time if they graduated from a program outside of the United States.

The American Registry of Radiologic Technologists distinguishes four types of candidates eligible for this program:

1. A person who received his/her radiologic technology education more than five years ago and did not take the national examination.
2. A person who has failed the national examination three times.
3. A person who received his/her professional education in a country without an accreditation mechanism that was recognized by the ARRT at the time of the program's completion.
4. Ex-military personnel whose program was not accredited at the time of program completion.

Individual courses may be taken on a case-by-case basis if an individual wishes to review a certain registry section in-depth prior to taking the test, or has failed the ARRT examination fewer than three times and wants to review certain areas.

## THE PROGRAM

There are five academic and two clinical courses. Each candidate must complete the clinical competencies required by the ARRT. If a student can complete the competencies in one quarter of clinical work, s/he does not need to take the second clinical course.

Required		Units
RTAP 221	Patient Care and Education	1.0
RTAP 255	Radiographic Procedures	2.0
RTAP 283	Equipment Operation and Quality Control	1.0
RTAP 284	Radiation Protection	1.0
RTAP 287	Image Production and Evaluation	2.0
RTAP 971	Clinical Affiliation	2.0
RTAP 972	Clinical Affiliation	2.0
Totals		11.0
<b>Overall Totals</b>		<b>11.0</b>

**ACCREDITATION**

Loma Linda University is regionally accredited by the Western Association of Schools and Colleges (WASC), 985 Atlantic Avenue, Suite 100, Alameda, CA 94501; telephone, 510/748-9001; FAX, 510/748-9797; Web site, <[www.wascweb.org](http://www.wascweb.org)> or <[wascsr@wascsr.org](mailto:wascsr@wascsr.org)>.

**STUDENT LEARNING OUTCOMES**

Upon completion of the program, the graduate should be qualified to:

1. Demonstrate clinical competence.
2. Demonstrate effective patient care.
3. Pass the registry examination.

**ADMISSION**

Individuals must have successfully completed a radiography program (not limited permit).

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Implant Dentistry, M.S. (optional), M.S.D. (optional), post-D.D.S./D.M.D., certificate

Oral and Maxillofacial Surgery, M.S. (optional), M.S.D. (optional), post-D.D.S./D.M.D., certificate

Orthodontics and Dentofacial

Orthopaedics, M.S., post-D.D.S./D.M.D., certificate

Pediatric Dentistry, M.S. (optional),  
M.S.D. (optional), post-D.D.S./  
D.M.D., certificate

Periodontics, M.S. (optional), M.S.D.  
(optional), post-D.D.S./D.M.D.,  
certificate

Prosthodontics, M.S. (optional), M.S.D.  
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## Dean's Welcome

Dentistry is a strategic component of overall health; and Loma Linda University School of Dentistry is a vibrant center of education where you will acquire knowledge, technical skills, management expertise, and the ability to exceed patients' expectations—thereby providing you with the capacity to thrive in your dental career.

Our faculty are committed to providing you with an evidence-based education that incorporates the most advanced electronic education resources available. You will receive abundant experience in patient care, both in the School of Dentistry and at extramural clinics that help meet the dental health needs of individuals with limited or no access to dental care.

Our ongoing commitment to clinical and foundational research provides you with rich opportunities to work with outstanding faculty in a wide variety of investigative activities.

You will receive an excellent contemporary education filled with rich clinical experience. However, it is the people who have been drawn to this unique environment of Christian education that make Loma Linda University a special place. I invite you to learn more about our clinical services; our programs; and our exceptional family of students, faculty, and staff.



A handwritten signature in black ink that reads "Charles J. Goodacre". The signature is written in a cursive, flowing style.

Charles J. Goodacre, D.D.S., M.S.D.  
Dean, School of Dentistry

# School Foundations

## HISTORY

A small but determined group of dentists met during the summer of 1943 in Grand Ledge, Michigan. Their purpose was to establish an organization that would serve as a catalyst, urging the Seventh-day Adventist Church to sponsor a dental school where young adults could learn the dental profession in an environment consistent with their religious beliefs. These men were the founders of the National Association of Seventh-day Adventist Dentists (NASDAD).

Under the leadership of Dr. J. Russell Mitchell, the organization's first president, the goal of a Christian dental school began taking conceptual form. NASDAD expanded in membership and objectives through men such as Dr. C. C. Ray, who toured the country on his own time in search of fellow Seventh-day Adventist dentists who were willing to pursue NASDAD's goals.

Dr. M. Webster Prince served as president of NASDAD in 1948 and 1949. At a meeting in San Francisco in 1949, NASDAD members voted unanimously to support the dental school project. Later that year at a NASDAD session in Hinsdale, Illinois, the members pledged a strong financial base in support of their goals.

The momentum of the effort became evident in the early 1950s. The General Conference of Seventh-day Adventists, under the guidance of President W. H. Branson, asked Dr. Prince to conduct a feasibility study. Official action was taken in 1951 to authorize establishment of the School of Dentistry as a unit of Loma Linda University's School of Medicine. Dr. Prince was selected as the first dean of the School of Dentistry. His leadership in organizing and eventually administering the new School of Dentistry was facilitated by his prior experience as president of the Michigan Dental Association and as chair of the American Dental Association Council on Dental Education. Forty-two students comprised the inaugural class in the late fall of 1953.

A dental hygiene curriculum leading to a Bachelor of Science degree was developed in 1959 under the direction of Dr. Gerald A. Mitchell, chair of the Department of Periodontics. Violet Bates became chair of the new department, and the first class of ten dental hygienists graduated in 1961.

In 1960, Dr. Charles T. Smith became dean. During this period, the school experienced positive growth in many areas. A dental assisting curriculum was developed in 1968 under the leadership of Betty Zendner. The first class graduated in 1969, receiving the Associate in Science degree. A dental auxiliary utilization (DAU) program was initiated to provide enhanced learning for dental students. The Monument Valley Dental Clinic for Navajo Indians was started in 1966, and Dean Smith succeeded in finding from public sources fiscal support for the clinic building and for faculty housing. New advanced education (postdoctoral) programs were initiated in five clinical disciplines: orthodontics, oral surgery, periodontics, endodontics, and oral pathology.

During the 1970s, the School of Dentistry continued its evolution into one of the premier clinical programs in the United States. Dr. Judson Klooster became dean in 1971. One of his major contributions was the expansion of Prince Hall, which was completed in May 1976. The new building more than doubled the number of clinical units; provided facilities for specialized areas of clinical instruction; and included eight new research laboratories, new classrooms, seminar rooms, amphitheaters, urgently needed teacher office space, and a commensurate expansion of support facilities and services. The Oral and Maxillofacial Surgery Clinic was remodeled, and an outpatient surgicenter was developed to meet the needs of patients requiring general anesthesia for dental treatment.

The School of Dentistry became an important regional resource for providing dental care for developmentally disabled children and adults, many of whom require such a treatment setting. The Biomaterials Research Laboratory was constructed; and new advanced education programs were initiated

in pediatric dentistry, implant dentistry, dental anesthesiology, and prosthodontics. A new program was established in 1985 to provide a U.S. dental education for foreign-trained dentists. An increasing number of dental professionals from other countries were seeking an American education and the opportunity to practice dentistry in the United States or to gain advanced knowledge to share in their own countries. The International Dentist Program continues to offer an intensive, twenty-one-month course of study leading to a D.D.S. degree. The program has added a six-month certificate program limited to dental missionaries from other countries who sense the need for updated continuing education.

In 2000, the first major expansion of the School of Dentistry in more than twenty years added 15,000 square feet to Prince Hall on the east side and provided two new patient entrances. The expanded Special Care Dentistry Clinic and the enlarged Pediatric Dentistry Clinic were relocated to the ground floor. An additional student laboratory was also included on that level. On the second floor, the new space allowed for expansion of the predoctoral clinic, with thirty-six additional operatories.

A preclinical laboratory was remodeled into a simulation laboratory in 2008. The laboratory included flat-panel monitors with access to the substantial digital resource library created by faculty. In 2009, the Department of Orthodontics and the advanced education program moved into new facilities designed as a model for providing student education and patient care in a digital world.

The School of Dentistry continues to regularly expand the opportunities for enhanced student learning by improving physical facilities; making regular curricular modifications; and introducing new interactive, navigable, nonlinear digital education programs.

## Our Mission

Loma Linda University School of Dentistry seeks to further the healing and teaching ministry of Jesus Christ wherein:

- Students learn to provide high-quality oral health care based on sound biologic principles.
- Patients receive competent care that is preventive in purpose, comprehensive in scope, and provided with compassion and respect.
- Faculty, students, and staff value patient relationship, respect diversity, and share responsibility by working together toward academic, professional, spiritual, and personal growth.
- Scholarly activity and research provide a foundation for evidence-based learning and enhance whole person care.
- The workplace environment attracts and retains a superior and diverse faculty and staff who motivate, educate, and serve.
- Our communities (local, global, and professional) benefit from our service, stewardship, and commitment to lifelong learning.

## Vision

Loma Linda University School of Dentistry is a preeminent health care organization seeking to represent God in all we do. We are enthusiastically committed to excellent, innovative, comprehensive education of our students and whole person care of our patients.

Our students, staff, and faculty are empowered through an enabling environment that honors the dignity, diversity, and worth of everyone.

Our graduates are exemplary professionals and progressive clinicians of integrity.

Our Lord's example inspires us to enrich our local and global communities through service. This is our calling.



## Core Values

- Belief in God
- Respect for the individual
- Principled spirituality
- Student focused
- Empathic care
- Commitment to service
- Pursuit of truth
- Progressive excellence
- Analytic thinking
- Effective communication

## General Information

### GENERAL REGULATIONS

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. This section of the CATALOG provides the general setting for the programs of the School of Dentistry and outlines the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

### SPECIFIC PROGRAM REQUIREMENTS

Information on the preceding pages pertains to general requirements governing all students. The student is reminded of individual responsibility to be fully informed not only of these general requirements but also of the specific requirements in the following pages, which govern the curriculum of the chosen program.

### PROGRAMS AND DEGREES

The School of Dentistry offers a comprehensive range of programs. Each of the school's five programs draws on the curricula of the various departments.

1. The undergraduate curriculum, the DENTAL HYGIENE program and the DENTAL HYGIENE DEGREE COMPLETION program, leads to the Bachelor of Science degree and prepares the dental hygienist to enter a variety of careers. Dental hygiene is a four-year college curriculum; the junior and senior years are taken in the Loma Linda University School of Dentistry. Pending approval from Loma Linda University Board of Trustees, WASC, and CODA, the DENTAL HYGIENE ASSOCIATE IN SCIENCE program will be available beginning Summer Quarter of 2011. This is a three-year college curriculum in which the first year prerequisites are taken at a regionally accredited college, and the remaining two years (a minimum of seven quarters) are taken at the Loma Linda University School of Dentistry off-campus site.
2. The four-year professional curriculum, the GENERAL DENTISTRY program, leads to the Doctor of Dental Surgery degree and equips the general dentist to meet the needs of a diverse patient population.
3. THE INTERNATIONAL DENTIST program, a twenty-four-month (two academic years) curriculum, leads to a Doctor of Dental Surgery degree from Loma Linda University upon completion of the program. The program is designed for the dentist who has earned a dental degree outside the United States.
4. The ADVANCED DENTAL EDUCATION programs lead to postdoctoral certificates in eight specialty and nonspecialty areas of dentistry and, at the student's option, additionally to the Master of Science or a Master of Science in Dentistry degree.
5. The COMBINED DEGREES programs lead to a Doctor of Dental Surgery degree (through the School of Dentistry) earned concurrently with a Master of Public Health degree (through the School of Public Health)—D.D.S./M.P.H.; or to the Doctor of Dental Surgery degree (through the School of Dentistry) earned concurrently with a Master of Science degree or Doctor of Philosophy degree—D.D.S./M.S. or D.D.S./Ph.D.



## COMBINED DEGREES PROGRAMS

### **D.D.S. / M.P.H.**

A combined Doctor of Dental Surgery and Master of Public Health degrees program is open to qualified students who want to influence and manage the future as skilled leaders—in public or private sectors—from large health care systems to mission hospitals, from research laboratories to primary care. The Master of Public Health degree can be taken, within a twelve-month period after either the second or third year of the Doctor of Dental Surgery degree program, in any of the following majors: biostatistics, environmental and occupational health, community wellness, epidemiology, health administration, health education, international health, maternal and child health, or nutrition.

### **D.D.S. / M.S.**

A combined degrees program leading to the Doctor of Dental Surgery and the Master of Science degrees is open to qualified students of dentistry. The student who is interested in establishing a broader professional base in science or who is looking toward a career in teaching or research may take an interim

leave from the School of Dentistry after the second or third professional year and fulfill professional degree requirements subsequent to or concurrent with completing course work and research for the Master of Science degree.

The combined degrees program in dentistry and in biomedical and clinical ethics is designed to fit the schedule of Doctor of Dental Surgery degree students. Ethics in dentistry is an emerging academic interest, and this program aims to evolve the Loma Linda University dental school into one of a very select few in the nation known for their expertise in ethical issues. This program requires 48 units of credit. This degree is offered cooperatively by the School of Religion and the School of Dentistry.

### **D.D.S. / Ph.D.**

The biomedical sciences program provides opportunity for well-qualified and motivated students to pursue both a professional and a graduate education and to prepare for careers in clinical specialization, teaching, or investigation in health and human disease. The student who has a baccalaureate degree and the approval of the School of Dentistry Office of Academic Affairs may enter the combined degrees program and work concurrently toward the Doctor of Dental Surgery and the Doctor of Philosophy degrees. A minimum of six years is required to complete a combined degrees program, offered cooperatively by the School of Dentistry and the School of Medicine, or the School of Science and Technology.

### **ADVANCED DENTAL EDUCATION PROGRAMS**

The School of Dentistry offers advanced dental education programs in specialty and nonspecialty disciplines of dentistry. Postdoctoral certificates, Master of Science (M.S.) and Master of Science in Dentistry (M.S.D.) degrees are available. The purpose of these programs is to offer candidates an opportunity to integrate advanced clinical training with meaningful exposure to applied basic science and research. For additional information and to submit an online application, interested applicants should visit the School of Dentistry Web site (Graduate Programs).

Advanced dental education programs leading to a professional certificate with an option to also pursue the Master of Science (M.S.) degree or the Master of Science in Dentistry (M.S.D.) degree are:

Dental Anesthesiology  
Endodontics  
Implant Dentistry  
Oral and Maxillofacial Surgery  
Orthodontics and Dentofacial Orthopedics (M.S. degree only)  
Pediatric Dentistry  
Periodontics  
Prosthodontics

These programs are organized to comply with the standards of the Council on Dental Education of the American Dental Association, and the objectives and content meet the requirements of the respective specialty boards. In addition, the programs in endodontics, oral and maxillofacial surgery, orthodontics and dentofacial orthopedics, pediatric dentistry, periodontics, and prosthodontics are accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. For additional information, the student may contact:

The Office of Advanced Education  
Loma Linda University  
School of Dentistry  
Loma Linda, CA 92350

<llu.edu/dentistry/gradprograms>

### **Admission requirements for advanced dental education programs/postdoctoral programs**

An appropriate degree from an accredited college or university is required for admission into the advanced dental education programs and postgraduate programs. A doctoral degree in dentistry (Doctor of Dental Surgery or Doctor of Dental Medicine) or the equivalent is required for admission to all programs. The applicant should have achieved a general grade-point average of not less than 3.0 on a 4-point scale, with no grade below 2.0. In addition to acceptable scholastic performance, the applicant must give evidence of personal and professional fitness for growth in the science and art of the intended dental discipline. For application deadlines, see the section on each individual program or refer to the chart on the following page.

After applicants are accepted into the advanced dental education programs in dental anesthesiology, endodontics, oral and maxillofacial surgery, pediatric dentistry, periodontics, prosthodontics, or the postdoctoral program in implant dentistry, they may apply for admission to the Faculty of Graduate Studies for the purpose of earning an M.S. degree; or to the Office of Advanced Education to earn an M.S.D. degree (in addition to the advanced program certificate). For the purpose of the Faculty of Graduate Studies application only, a Graduate Record Examination (GRE) certificate is required at the time of application to the Faculty of Graduate Studies. Applicants for the Master of Science (M.S.) degree who meet or exceed the minimum entrance requirements may be accepted to the Faculty of Graduate Studies (FGS) by the School of Dentistry's associate dean for advanced dental education. The master's degree thesis must be completed, defended, and accepted in final form (as evidenced by a completed Form D) by both the graduate program and the Faculty of Graduate Studies. The time lapse from acceptance to the master's degree program to completion of all degree requirements and the thesis may not exceed five years.

For additional information regarding the dates and times for GRE, call toll free 609/771-7670; or visit Web site, <ets.org/gre>. Applicants for whom English is a second language must show satisfactory results on the Test of English as a Foreign Language (TOEFL). For additional information, call toll free 800/257-9547.

### **Residence**

The required time in residence varies with each program. For the length of a program, refer to the information under each program description.

### **Stipends**

Stipends are provided in the Dental Anesthesiology and the Oral and Maxillofacial Surgery programs. For details, contact the program directors.

### **Tuition**

Tuition and fees quoted in the school financial information section of this CATALOG are for the academic year 2011-2012.

**Thesis**

The student must complete a research project presented in thesis format and orally defended according to the standards set by the Faculty of Graduate Studies. A written thesis, approved by the student's research committee, must be submitted to the Faculty of Graduate Studies in order to receive a satisfactory grade for the course.

**Publishable paper**

Students on the Master of Science in Dentistry degree track must submit a publishable paper (or optional thesis) no later than one year from the date they complete their certificate program. Candidates are admitted to only one master's degree track of their choosing.

**General requirements**

For information about requirements and practices to which all graduate students are subject, the student should consult Section II of this CATALOG.

**Dual major option**

Applicants to the programs in implant dentistry, periodontics, and prosthodontics have the option to select an extended program (approximately four-and-one-half years in total length) to pursue dual majors in two of the following disciplines of study: periodontics, prosthodontics, or implant dentistry.

Students must complete all the requirements of each ADA-recognized specialty program (periodontics and prosthodontics) in order to be eligible to pursue board certification. Dual credit of up to 100 units may be awarded for courses required by the two programs.

Individuals who wish to pursue the dual major option must indicate such interest by completing separate applications to both programs. Applicants to one of the optional dual major programs must not only meet the admissions requirements of each program, but must also be admitted to the advanced education programs they designate.

### Admissions criteria for advanced dental education programs

(Since January 1, 2007 a completed LLU online application has been required before admission can be granted to any graduate program.)

PROGRAM	Official Transcript(s) <sup>1</sup>	Cumulative G.P.A. <sup>2</sup>	GRE <sup>3</sup>	National Boards, Part I <sup>4</sup>	TOEFL <sup>5</sup>	Letters of Recommendation
Dental Anesthesiology <sup>6</sup> <i>24 mo. / 6 positions</i>	Required	3.0	Not Required	Required (all applicants)	Required	3
Endodontics <sup>11</sup> <i>27 mo. / 3 positions</i>	Required	3.0	Required for internationally trained applicants	Required (only U.S.-trained applicants)	Required	3
Implant Dentistry <i>36 mo. / 3 positions</i>	Required	3.0	See #3	Not Required	Required	3
Oral and Maxillofacial Surgery <sup>8</sup> <i>4 yrs. / 3 positions; 6 yrs. / 2 positions</i>	Required	3.0	See #3	Required (all applicants) score of 86 or higher	Required	3
Orthodontics and Dentofacial Orthopedics <sup>7,9,12</sup> <i>27 mo. / 6 positions</i>	Required	3.0	Required <sup>9</sup>	Required (all applicants)	Required	3
Pediatric Dentistry <sup>13</sup> <i>24 mo. / 4 positions</i>	Required	3.0	Required for internationally trained applicants	Required (only U.S.-trained applicants)	Required	3
Periodontics <sup>10</sup> <i>36 mo. / 3 positions</i>	Required	3.0	See #3	Required (only U.S.-trained applicants)	Required	3
Prosthodontics <i>36 mo. / 4 positions</i>	Required	3.0	See #3	Required (only U.S.-trained applicants)	Required	3

## Application and program dates

PROGRAM	LLU APPLICATIONS		ADMISSIONS COMMITTEE MEETS	PASS APPLICATIONS		ADVANCED EDUCATION PROGRAMS	
	OPEN	CLOSE		OPEN	CLOSE	START DATE	ENDING DATE
DENTAL ANES	1/1/2011	9/1/2011	November	5/2011 Match Participant	8/18/2011	July 1	June 30
ENDN	1/1/2011	8/1/2011 (Rolling Admissions)	September	5/2011	7/18/2011	July 1	Late September
IMPD	1/1/2011	9/15/2011	December	n/a	n/a	July 1	June 30
OMFS	1/1/2011	10/15/2011	January	5/2011 Match Participant	10/1/2011	July 1	June 30
ORDN	1/1/2011	8/1/2011	November	n/a	n/a	Late June	Late September
PEDN	1/1/2011	10/15/2011	January	5/2011 Match Participant	10/1/2011	Late June	June 30
PERI <sup>10</sup>	1/1/2011	9/1/2011 (Rolling Admissions)	September	5/2011	8/18/2011	July 1	June 30
PROS	1/1/2011	9/1/2011	October	5/2011	8/18/2011	July 1	June 30

<sup>1</sup> Transcripts: Transcripts from all postsecondary schools from which credit was received, whether or not the work pertains to the LLU degree, are required to complete the application.

<sup>2</sup> Grade-point Average (GPA): A cumulative G.P.A. of 3.0 (on a 4.0 scale) is required for admission.

<sup>3</sup> GRE (Graduate Record Examination) criteria: Although the Graduate Record Examination (GRE) may not be required by all programs for admission, it is required of all students who wish to apply for admission to the Faculty of Graduate Studies and pursue a Master of Science (M.S.) degree. The sum of the GRE verbal and quantitative percentile rankings must equal or exceed 100. Furthermore, neither the verbal nor quantitative score may be lower than the 35th percentile for that section. In addition, only GRE test scores within the past five years will be accepted.

The GRE Writing Assessment score must equal or exceed 4.0.\*

The Master of Science (M.S.) degree track is available to students currently enrolled in one of the following professional certificate programs: endodontics, implant dentistry, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics, and prosthodontics.

\*Applicants with a GRE Writing Assessment score below 4.0 are encouraged to retake this examination to improve their performance. Alternatively, enrolled certificate students/residents may register for and satisfactorily complete a Loma Linda University course in English writing, as specified by the Office of Advanced Dental Education. *The tuition for a writing course must be paid separately by the student because this is not a requirement or part of the program curriculum.*

<sup>4</sup> National Boards, Part I: Refers to Part I of the two-part U.S. National Board Examinations. Part II must also be submitted when available. All must be passing grades.

<sup>5</sup> English language skills: Non-US applicants for whom English is not their primary language and whose secondary education has been given outside the U.S. are required to take the TOEFL examination. Applicant must demonstrate satisfactory verbal and written English language skills. A minimum TOEFL score of 550 (paper based) and 80 (internet based) is required. TOEFL scores are valid for two years from the test date.

<sup>6</sup> Dental license: All applicants for the Dental Anesthesiology, Advanced Program who are not currently enrolled in a U.S. or Canadian dental school must have a current U.S. or Canadian dental license.

<sup>7</sup> International Dentist Program: All applicants trained outside of the U.S. or Canada who are applying to the Orthodontics and Dentofacial Orthopedics, Advanced Program must complete an accredited international dentist program.

<sup>8</sup> Oral and Maxillofacial Surgery: All applicants to the six-year program also must submit their DAT scores to University Admissions through official channels.

<sup>9</sup> Orthodontics and Dentofacial Orthopedics: This program requires applicants to meet the requirements for the certificate program and the Master of Science (M.S.) degree track. Therefore, to be considered, applicants must take the GRE and meet or exceed the requirements stated above in item #3.

<sup>10</sup> Periodontics: This program has a rolling admission process between January 1 and September 1, which means it reserves the right to fill its entering class prior to the September 1 deadline.

<sup>11</sup> Endodontics: This program has a rolling admission process between January 1 and August 1, which means it reserves the right to fill its entering class prior to the August 1 deadline.

<sup>12</sup> Orthodontics and Dentofacial Orthopedics: The program reserves the right to admit selected students to the certificate program, which would require submission of a certificate application.

<sup>13</sup> Pediatric Dentistry: All applicants for the Pediatric Dentistry, Advanced Program who have received their dental school training outside of the U.S. or Canada must have a current dental license from their country and submit a notarized copy with their application.

## **DOCTOR OF DENTAL SURGERY (D.D.S.) PROGRAM**

### **Application and admission**

The Admissions Committee looks for evidence of scholastic competence, moral and ethical standards, and significant qualities of character and personality. In broad terms, the following are standards required for admission:

- Intellectual capacity to complete the curriculum
- Emotional adaptability and stability
- Social and perceptual skills
- Physical ability to carry out observation and communication activities, and the possession of sufficient motor and sensory abilities to practice general dentistry
- Commitment to a dynamic spiritual journey and service to mankind

Materials submitted for admission should be sent to:

Office of Admissions  
School of Dentistry  
Loma Linda University  
Loma Linda, CA 92350

Official transcripts should be sent to:

Admissions Processing  
Loma Linda University  
Loma Linda, CA 92350

### **Admission requirements**

Although the predentistry curriculum in an accredited college can be completed in three years, a baccalaureate degree or equivalent is strongly recommended. The following college courses are required for entrance into the D.D.S. degree program:

#### **Humanities**

Freshman English (complete course sequence, two semesters or two quarters) to include composition and literature

#### **Natural Sciences**

A complete course sequence, two semesters or two quarters or equivalent, is required in each science listed unless otherwise noted.

General biology or zoology with laboratory

General chemistry with laboratory

General physics with laboratory

Organic/inorganic chemistry with laboratory

Biochemistry (one semester or a minimum of 4 units; two quarters or a minimum of 6 units)

#### **Electives (strongly recommended)**

Cell and molecular biology

Genetics

Gross anatomy

Histology

Immunology

Microbiology

Neuroscience

Systems physiology

Accounting

Ceramics

Management

Nutrition

Psychology

Students preparing for the predoctoral program are required to complete a minimum of three academic years with no fewer than 96 semester or 144 quarter units in a college or university accredited by a regional accrediting association. Preference is given to applicants who have completed or will complete the requirements for a baccalaureate degree prior to admission. A maximum of 64 semester or 96 quarter units of credit may be accepted from an accredited junior or community college.

A complete academic year of class work (8 semester or 12 quarter units) in general biology, general chemistry, organic and inorganic chemistry, and general physics is required. Also required is a complete sequence of freshman English that includes composition and literature (two semesters or two quarters). The biochemistry requirement is one semester or a minimum of 4 units or two quarters or a minimum of 6 units. *All science prerequisites must be completed within five years prior to admission, with a grade of C or above in each course.* A minimum grade-point average of 2.7 in science subjects and in nonscience subjects, averaged separately, is required. The average grade-point average for accepted students is substantially higher.

Students who are enrolled in another program in Loma Linda University are not considered for admission until they have completed or have been released from the program.

Prior to consideration for admission, the applicant must meet specific criteria related to past academic performance (G.P.A.), performance on the Dental Admission Test (DAT), and a personal interview. Applicants are expected to have taken the DAT within the previous two years, preferably not later than October of the year preceding expected matriculation. At the applicant's request, test results are sent to the school by the testing service. Information may be obtained directly from the American Dental Education Association, 211 East Chicago Avenue, Chicago, IL 60611.

In order to be better prepared with specific vocabulary and understanding, the applicant should include science courses with content similar to courses offered during the first year of the professional curriculum. The applicant's purpose should be the pursuit of diverse knowledge, the cultivation of an inquiring mind, the practice of efficient methods of study, and the habit of thinking and reasoning independently.

The choice of electives can broaden the applicant's view of the scope of knowledge. Being well-read will give a perspective on the sweep of human thought throughout the ages, and often this will be of assistance in written and verbal communication and will improve the individual's ability to think and express him-/herself well. Psychological, social, philosophical, and religious insights will help to develop basic resources for the solution of personal problems and the growth of self-understanding the student must have in order to understand and help associates.

An applicant from a college or university outside the United States or Canada or from a nonaccredited college or university in the United States must complete a minimum of one full academic year (24 semester or 36 quarter credits) in competition with other preprofessional students in an accredited college or university in the United States. This includes the required specific core sciences in the areas of biology, organic and inorganic chemistry, biochemistry, and physics (all sciences must include laboratories). A grade of C or above in each course completed is required. (A grade of C- will not be accepted.)

### **Application procedure**

The school participates in the American Association of Dental Schools Application Service (AADSAS). Cards requesting an AADSAS application are available at most colleges and universities and also on the Internet at <adea.org>; or email at <aadsas@adea.org>. The application should be completed and returned to the Washington address indicated on the application. AADSAS processes this application and sends copies to the schools of the applicant's choice. The School of Dentistry at Loma Linda University

recommends that applicants file their AADSAS application before August 1 in order to be competitive. To be given consideration for the next entering class, the student's application deadline is December 1. The following is a step-by-step process for completing an application to Loma Linda University (LLU).

1. **AADSAS application.** The Office of Admissions receives applications from AADSAS.
2. **Supplementary application.** The applicant then receives an email invitation from LLU to complete an electronic supplementary application.
3. **Supplementary application deadline.** The applicant must return the completed supplementary application and materials within thirty days. This includes an essay specific to Loma Linda University, a wallet-sized photograph, and the application fee of \$75.
4. **Transcripts.** Official transcripts must be sent to AADSAS. When an applicant becomes an accepted student, official transcripts—mailed directly from all colleges/universities to LLU—are required in order for the student to be registered for the first quarter of classes.
5. **References.** The applicant is asked to supply a minimum of three personal references. It is recommended that these include an academic reference from a science instructor; a reference from an employer; a character or religious reference, such as from a minister; and a reference from a friend in the dental profession. If the applicant has attended a college or university that has a preprofessional committee that prepares a preprofessional evaluation, it is required that Loma Linda University be sent a copy of this evaluation from the committee. Members of the applicant's family are excluded from writing the required letters of reference, although letters will be accepted for the file in addition to those required. Recommendation letters must be sent to AADSAS and released then by AADSAS to Loma Linda University School of Dentistry.
6. **Dental Admission Test.** The applicant is required to complete and meet specific criteria related to performance on the Dental Admission Test (DAT). Preference is given to applicants who have taken the test by October of the academic year preceding that for which admission is desired. The student entering the first year is expected to have taken the test within the past two years. If the test has been taken more than one time, the most recent scores are used for admission criteria. The committee reviews all scores on the test. The DAT scores must be on file at Loma Linda University before an acceptance to the school will be issued. Test results should be sent to Loma Linda University, School of Dentistry, Office of Admissions. References may also be sent directly to Loma Linda University School of Dentistry.
7. **Interview.** The applicant's records will be screened when the supplementary application, recommendations, and transcripts are on file. The applicant may then be invited to the school for a personal interview. An interview is required for admission. The interview provides an opportunity for evaluation of noncognitive factors, including communication skills, personal values, motivation, and commitment to goals of the profession; as well as genuine concern for others in the service of dentistry. At the time of the interview, a tour of the school will be given by a current student in the program.
8. **Observation.** It is important that preprofessional students seek experience observing and assisting in a dental office to become familiar with the work of a dentist. Prior to interviewing, applicants are expected to complete a minimum of twenty hours of observation/work experience in a dental facility, ten of which must be done in a general practitioner's office.
9. **Acceptance.** The accepted student receives an acceptance letter and a follow-up letter with information relative to required forms and deposit deadlines.

10. **Pre-entrance health requirements/Immunizations.** It is expected that necessary routine dental and medical care will have been attended to before the student registers.

New students are required to have certain immunizations and tests before registration. Forms to document the required immunizations are provided for the physician in the acceptance packet sent to the student by the school. In order to avoid having a hold placed on registration, the student is encouraged to return the documentation forms in the provided envelope to Student Health Service no later than six weeks prior to the beginning of classes.

Students enrolling in the School of Dentistry must provide documentation of having had the following immunizations and tests:

- MMRs—measles (rubeola), mumps, rubella (German measles) (or provide proof of two previous MMRs)
- PPD (TB) skin test (current skin test result or x-ray report)
- Tetanus/Diphtheria booster
- Chicken pox blood test and/or immunization. If no known history of chicken pox, then student may choose blood test (which may reveal pre-existing immunity) and/or immunization (if no prior immunity).
- Hepatitis-B vaccination series. Students who know themselves to have had hepatitis-B in the past should employ extra protection when involved in direct patient care and may request a modified curriculum, if necessary. This series of three vaccinations may be completed at this University (even if it was begun elsewhere) through the Student Health Service. (The student will be charged a fee.)
- A recent eye examination performed by an ophthalmologist or optometrist

For further information, consult the *Student Handbook*, Section V—University Policies—Communicable disease transmission prevention policy; or the Student Health Service office, 909/558-8770.

If a returning student is assigned to a clinical facility that requires a tuberculosis skin test, the student is required to have the test within the six months before the assignment begins.

11. **Deposits.** The student accepted into dentistry must submit a deposit of \$1,000 and the required forms to the Office of Admissions. All deposits become part of the first quarter's tuition. Failure to submit this deposit will result in the loss of the applicant's position in the class. The remaining balance of the first quarter's tuition and fees is due no later than the day of matriculation in late September. If the applicant has submitted a completed application for financial aid by March 2, and if the Stafford application has been submitted by June 15, the final installment can be paid utilizing University-assisted sources.
12. **Financial requirement.** Non-U.S. citizens and nonpermanent residents are required by U.S. immigration regulation to secure sufficient funds and pay for their first year's tuition and fees before they can register for Autumn Quarter. In addition, they must provide documentary evidence of sufficient funds for their second year. International students will receive the necessary visa applications and registration clearance after they have submitted their \$1,000 deposit and payment plan.
13. **Financial aid.** A financial aid advisor and financial aid programs are available. Please contact the Office of Financial Aid by email, <finaid@llu.edu>; or by telephone, 909/558-4509. Web site information is located at <llu.edu/central/ssweb/finaid>.

## Transfer

Transfer from another school of dentistry in the United States is considered only in unusual circumstances. **Credits from professional schools (business, medical technology, nursing, pharmacy, chiropractic, or medicine) do not fulfill admission requirements.** Credit for studies taken at a military service school is granted to veterans according to recommendations in the *Guide of the American Council on Education* and/or the California Committee for the Study of Education. The University reserves the right to require satisfactory completion of written or practical examinations in any course for which transfer credit is requested.

A transfer applicant should expect to begin at the first-year level and will be considered only if there is space available at the appropriate level. An application for transfer will be considered when the following information is received in the school's Office of Academic Affairs:

- letter from applicant, stating reason for requesting transfer;
- letter of recommendation from the dean of the dental school where the applicant is enrolled;
- official transcripts sent directly to the Office of Academic Affairs for both pre dental and dental school courses completed;
- Dental Admission Test results.

## INTERNATIONAL DENTIST PROGRAM

### Application and admission

Application forms are available online at <llu.edu/central/apply>. Requests for information are accepted by mail, email, or telephone.

### Admission requirements

- Dental degree from a recognized foreign dental school.
- Successful completion of the National Dental Board Examination, Part I and Part II.
- TOEFL examination, with a minimum score of 550 on the written examination or a minimum score of 213 on the computer examination or a minimum of 20 in each area of the Internet-based examination.
- Dental school transcript (evaluated by an evaluation center approved by the University).

Other documentation is required, as outlined in the application. An application fee of \$75 is required with the application and accompanying documentation between February 1 and August 1. All application material sent to the Office of Admissions becomes the property of the school.

Students currently enrolled in a similar program at another university are not eligible to apply and will not be accepted for admission.

### Application procedure

1. **References.** The applicant is required to supply a minimum of two personal references. It is recommended that these include an academic reference from a science professor and a reference from an employer. Members of the applicant's family are excluded from writing the required letters of reference, although letters will be accepted for the file in addition to those required. Letters should be sent directly to the School of Dentistry Office of Admissions.

## 2. Selection process

- *Screening*: Completed applications submitted before the application deadline will first be evaluated by the Office of Admissions.
  - *Dexterity and case study testing*: Testing is conducted on one or more Sundays in the fall.
  - *Interview*: Based on dexterity and case study testing, applicants may be invited to interview.
  - *Final selection*: The results of the testing and interview, as well as the applicant's application materials, are presented to the School of Dentistry Admissions Committee for final selection. Twenty-four applicants are accepted each year for enrollment in the International Dentist Program that begins in the spring.
3. **Transcripts.** Official transcripts with English translations must be mailed directly from all colleges/universities attended by the student, and all postsecondary education prior to offers of admission.
  4. **Language.** All classes are conducted in English, and patients treated in the clinic communicate in English. Applicants must demonstrate competence in both written and spoken English.
  5. **Deposits.** A student accepted into the International Dentist Program must submit a deposit of \$2,500 USD to Loma Linda University by the date specified. Students must also pay in advance for two quarters' tuition costs. For students eligible for government-sponsored financial aid programs, only the first quarter's tuition is required at the initial registration. Living expenses vary, depending on the student's lifestyle. Generally, living expenses range from \$1,000-\$1,800 (or more) per month.
  6. **Financial requirement.** Students applying for or holding F-1 U.S. student visas are required by U.S. immigration regulation to secure sufficient funds for their first year's tuition and fees and provide documentary evidence of sufficient funds for their second year.
  7. **Financial aid.** A financial aid advisor and financial aid programs are available. Applicants should contact the Office of Financial Aid at email <finaid@llu.edu>; or by telephone, 909/558-4509. Web site information can be obtained at <llu.edu/central/ssweb/finaid>.
  8. **Pre-entrance health requirements/Immunizations.** It is expected that necessary routine dental and medical care will have been attended to before a student registers. New students are required to have certain immunizations and tests before registration. Forms to document the required immunizations are provided for the physician in the acceptance packet sent to the student by the school. In order to avoid having a hold placed on the registration packet, the student is encouraged to return the documentation forms in the provided envelope to Student Health Service no later than six weeks prior to the beginning of classes.

Students enrolling in the School of Dentistry must provide documentation for completing the following immunizations and tests:

- MMRs—measles (rubeola), mumps, rubella (German measles) (or provide proof of two previous MMRs)
- PPD (TB) skin test (current skin test result or x-ray report).
- Tetanus/Diphtheria booster
- Chicken pox blood test and/or immunization. If no known history of chicken pox, then student may choose blood test (which may reveal pre-existing immunity) and/or immunization (if no prior immunity)
- Hepatitis-B vaccination series. Students who know themselves to have had hepatitis-B in the past should employ extra protection when involved in direct patient care and may request a

modified curriculum, if necessary. This series of three vaccinations may be completed at this University (even if it was begun elsewhere) through the Student Health Service. (The student will be charged a fee.)

- A recent eye examination performed by an ophthalmologist or optometrist

For further information, consult the *Student Handbook*, Section V--University Policies: Communicable disease transmission prevention policy; or the Student Health Service office, 909/558-8770.

Students in the International Dentist Program have the same benefits, including health care coverage, as are described elsewhere in this CATALOG.

## DENTAL HYGIENE PROGRAMS

### Application and admission

Dental Hygiene is an undergraduate program in the School of Dentistry. A student must have a high school diploma or its equivalent and must meet college entrance requirements. After successful completion of the required prerequisite courses in a regionally accredited college or university, admission to the Dental Hygiene Program is in the junior year for the Bachelor of Science degree and in the sophomore year for the Associate in Science degree.

The application is available at <llu.edu/central/apply>. Applications and all other required documentation must be submitted between July 1 and February 1 for the Bachelor of Science degree. The Bachelor of Science Degree Completion Program requires applications and all other required documentation for the term starting in March must be submitted between March 1 and August 1 the year prior to matriculation. For the term starting in September, all applications and other required documentation must be submitted between July 1 and February 1, the year prior to matriculation. Contact LLUSD admissions for the application dates for the Associate of Science dental hygiene program.

### Admission requirements

The Bachelor of Science degree in dental hygiene applicant must meet the following minimum requirements:

- Ninety-six (96) quarter or 64 semester units of accredited college course work.  
*NOTE:* Loma Linda University requires all students who graduate with a baccalaureate degree to complete a minimum of 68 quarter units of general education, which is integrated into the entire undergraduate program.
- A grade-point average of 2.7 or higher in science and nonscience course work, averaged separately; *a minimum grade of C for all pre-entrance course work to be transferred to the University.* The entering grade-point average is typically 3.2 or higher.
- A personal interview with a representative designated by the School of Dentistry. This interview will assess personal qualities—such as, values, spiritual heritage, communication skills, service orientation, and volunteer experience. The interview is by invitation only.
- A minimum of twenty hours of experience observing with a dental hygienist is encouraged prior to an interview. Dental assisting experience is also highly recommended.
- Dental hygiene applicants are expected to complete all general education requirements before matriculating in the School of Dentistry. A student may be accepted with a deficiency in one or

more of the areas but is expected to eliminate deficits before enrolling in the Dental Hygiene Program.

- Required science courses must be completed within five years prior to the desired date of matriculation.

The Associate in Science degree dental hygiene applicant must meet the following minimum requirements:

- Forty-four (44) quarter or 32 semester units of transferrable college course work.
- A grade-point average of 2.7 or higher in science and nonscience course work, averaged separately; *a minimum grade of C for all pre-entrance course work to be transferred to the University.*
- A personal interview with a representative designated by the School of Dentistry. This interview will assess personal qualities—such as, values, spiritual heritage, communication skills, service orientation, and volunteer experience. The interview is by invitation only.
- Three personal letters of reference.
- Minimum of twenty hours of experience observing with a dental hygienist.
- Dental hygiene applicants are expected to complete all general education requirements *before* matriculating in the School of Dentistry.

## Dental Hygiene general education requirements (B.S. degree)

### Domain I: 28-32 units

#### *Religion and Humanities*

Four (4) quarter or 3 semester units of religion for each full year of attendance at a Seventh-day Adventist college, based on the total units graded; cultural heritage courses (20 quarter units or 14 semester units) selected from a minimum of three different areas—history and/or civilization, fine arts (theory course work only), literature, philosophy/ethics, foreign language, performing arts/visual arts (not to exceed 4 quarter units).

### Domain II: 24-32 units

#### *Scientific Inquiry and Analysis and Social Sciences*

One full year of chemistry covering inorganic, organic, and biochemistry—*each with laboratory*; human anatomy and human physiology with laboratory (may be two separate courses or sequential courses); *microbiology with laboratory. Required science course work must be completed within five years prior to matriculation.* Nonremedial college mathematics or statistics. Introductory sociology, general psychology, and cultural anthropology/diversity courses are required.

### Domain III: 9-13 units

#### *Communication*

English composition and literature, a complete sequence (two semesters or two quarters); and a speech/interpersonal communication/persuasion course are required. An introductory course in computers is highly recommended.

**Domain IV: 2-6 units*****Health and Wellness***

A personal health or nutrition course and two physical education activity courses are required. The same physical education activity course should not be taken more than once.

**Dental Hygiene general education requirements (A.S. degree)****Domain II: 20 quarter or 15 semester units*****Scientific Inquiry and Analysis and Social Sciences***

One full year of chemistry covering inorganic, organic, and biochemistry—*each with laboratory*; human anatomy and human physiology with laboratory (may be two separate courses or sequential courses); *microbiology with laboratory*. *Required science course work must be completed within five years prior to matriculation*. Nonremedial college mathematics or statistics. Introductory sociology, general psychology.

**Domain III: 13 quarter or 9 semester units*****Communication***

English composition and literature, a complete sequence; and a speech/interpersonal communication/persuasion course. An introductory course in computers is highly recommended.

**Domain IV: 3 quarter or 2 semester units*****Health and Wellness***

A personal health or nutrition course and one physical education activity course are required.

**LOMA LINDA UNIVERSITY SCHOOL OF DENTISTRY LEARNING OUTCOMES FOR THE NEW DENTAL GRADUATE (SLOS)**

Graduating dental students must be competent to independently:

1. Perform clinical decision making that is supported by foundational knowledge and evidence-based rationales.
2. Promote, improve, and maintain oral health in patient-centered and community settings.
3. Function as a leader in a multicultural work environment and manage a diverse patient population.
4. Understand the importance of maintaining physical, emotional, financial, and spiritual health in one's personal life.
5. Apply ethical principles to professional practice.

**LEARNING OUTCOMES FOR THE DENTAL HYGIENE B.S. DEGREE COMPLETION PROGRAM (SLOS)**

Graduating dental hygiene B.S. degree completion program students will be able to:

1. Retrieve, interpret, and evaluate research for evidence-based decision making.
2. Utilize the principles of adult learning in allied dental or public/community health education settings.

3. Demonstrate skills in communication practices, including the gathering, integrating, and conveying of information in written and oral forms.
4. Recognize the language of ethics that incorporates social and cultural diversity and professional responsibility.
5. Integrate a lifelong learning approach through self-reflection and through academic and professional achievements.

### **LOMA LINDA UNIVERSITY SCHOOL OF DENTISTRY ADVANCED DENTAL EDUCATION PROGRAMS STUDENT LEARNING OUTCOMES (SLOS)**

Graduate students and residents in advanced dental education programs are expected to:

1. Understand the didactic foundation of their discipline and master the clinical skills required to utilize that foundation.
2. Integrate advanced clinical training with meaningful exposure to the applied basic sciences.
3. Engage in a project involving advanced clinical training with meaningful exposure to research.
4. Integrate interdisciplinary treatment planning into their didactic and clinical activity.
5. Apply for and pursue board certification in their discipline through the appropriate sponsoring organization.
6. Understand the importance of developing a commitment to the University-wide student learning outcomes.

## Student Life

### SCHOOL OF DENTISTRY TECHNICAL STANDARDS

In harmony with its own education, research, and service objectives, and using the American Dental Education Association suggested guidelines, Loma Linda University School of Dentistry has identified technical standards for its programs. The qualified applicant will meet, or will have the potential to meet, the following technical standards—standards that every student in the dentistry programs is expected to reach.

#### Cognitive abilities

School of Dentistry students must have abilities that allow them to accurately and effectively measure, verify, calculate, reason, analyze, and synthesize. Students must be able to comprehend three-dimensional relationships and understand the spatial relationships of structures in order to fully and completely solve dental problems. In addition, students must be able to visualize and comprehend physical demonstrations in the classroom, laboratory, and clinic. Effective problem solving requires students to gather, organize, and assess relevant information in order to arrive at an integrated solution.

#### Sensory and perceptual abilities

For learning to occur, students will be required to observe and interpret demonstrations and experiences. Such observation requires the functional use of vision, touch, hearing, and somatic sensation. Observation is further enhanced by the sense of smell.

Students must be able to acquire information from written documents; and to visualize information presented in images from papers, films, slides, videos, or DVDs. They must be able to interpret radiographic and other graphic images, with or without the use of assistive devices. Students must be able to observe patients accurately and observe and appreciate verbal and nonverbal communications when performing dental operations or administering medications.

Students in the School of Dentistry must possess adequate visual and tactile skills to perform dental examinations and provide treatment. Visual acuity, accommodation, and color vision are necessary to discern differences and variations in color, shape, and general appearance between normal and abnormal hard and soft tissues. Touch and somatic sensation are required for effective learning, as well as for effective evaluation and treatment of patients. Students must also possess sufficient visual acuity to read electronic charts, records, small print, and handwritten notations.

#### Communication

Students in the School of Dentistry must be fluent in the use of standard written and spoken English. Specifically, an individual must be able to observe, hear, and speak to patients in order to elicit information. Students must be able to observe and describe changes in mood, activity, and posture in their patients; and must possess skills in effective perception and understanding of nonverbal communications. Individuals must be able to communicate effectively and sensitively with patients, faculty, staff, and other students. In addition, students must have the ability to read and understand written communications, and be able to generate effective oral and written communications with all members of the health-care team. This includes the ability to discern when a matter is confidential in order to maintain that confidentiality.

## **Motor skills**

School of Dentistry students should have sufficient motor and sensory capability in both hands to be able to provide general dental care. Students must possess the motor and sensory capabilities necessary to directly perform palpation, percussion, auscultation and other diagnostic maneuvers, basic laboratory tests, and diagnostic procedures. Exercising these capabilities requires coordination of both gross and fine muscular movements, equilibrium, and functional tactile and visual senses. Students must be able to operate foot controls, utilizing fine movements; and to operate high- or low-speed dental instruments, accurately performing movements of less than one-half millimeter. Students must also have the capability to utilize dental hand instruments with tactile sense and precise control.

Students must be able to perform basic life support (e.g., CPR), transfer and position disabled patients, and physically restrain patients who lack motor control. Additionally, they must be able to position or reposition themselves around the patient and dental chair while sitting or standing.

## **Behavioral and psychosocial skills**

Students must possess the emotional stability and resilience required for full utilization of their abilities in the context of a full and challenging education program. Success in the educational program requires use of good judgment; prompt completion of all responsibilities attendant to the diagnosis and care of patients; and development of mature, sensitive, and effective relationships with patients, staff, and colleagues.

It is also imperative that students be able to tolerate physically taxing workloads and to function effectively under stress. Students must be able to adapt to changing environments, must display flexibility, and must learn to function in the face of uncertainties inherent in the clinical problems of many patients. Compassion, integrity, honesty, concern for others, interpersonal skills, interest, cultural sensitivity, and motivation are personal qualities that will be assessed during the admissions and education process.

## **Disabled applicants and students**

It is Loma Linda University's policy to comply fully with the provisions of the Americans with Disabilities Act, Sect. 504 of the Rehabilitation Act. The school is committed to providing dental education—including support services and reasonable accommodations for disabilities—to qualified applicants who will be able to perform all technical standards with or without accommodations; and for whom such accommodation does not fundamentally alter the School of Dentistry courses or create an undue burden.

During the application process, the school requests that an applicant disclose any disability for which an accommodation may be needed. The Admissions Committee requires written documentation of the disability, which they will review prior to making an assessment as to whether or not the applicant can be expected to perform the essential functions of the program.

A student who desires accommodation for any disability identified after admission must request the associate dean for student affairs for evaluation with appropriate University entities. Appropriate and reasonable accommodation will be provided, as necessary.

## **POLICIES FOR THIS SCHOOL**

The information on student life contained in this CATALOG is brief. The *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies; and is available to each registered student. Students need to familiarize themselves with the contents of the *Student Handbook*.

## PROFESSIONAL ETHICS

The following core values are identified by the Loma Linda University School of Dentistry to be of utmost importance in the life of students:

- Belief in God
- Spiritual principles
- Care for others
- Service to others
- Commitment to progressive excellence
- Critical thinking
- Respect for the individual
- Personal integrity
- Student focused
- Pursuit of knowledge
- Industry
- Effective communication

The School code of ethics expands and elaborates Loma Linda University's standards of ethical conduct.

Organized dentistry is proud of its reputation for honesty and integrity. These virtues are essential for each member of the profession, if dentistry is to continue to maintain its position of trust within society. The establishment of peer review committees, ethics committees, codes of ethics, and other regulatory and/or advisory processes and standards within the professions indicate a vital and continuing concern with maintaining high standards of integrity.

The School of Dentistry is a place where the professionals are selected and trained in the development of professional and ethical attitudes consistent with the highest goals of the profession. For this purpose the School of Dentistry has developed a code of ethics. This code is a means of educating and training the future dental professionals in ethics, and is a means of developing an ethical and moral awareness that will help the individual serve the public and the professions in an enlightened manner.

In addition, the school seeks to broaden students' ethical perceptions by including a religious perspective not always found in ethical codes. By adding a spiritual foundation to the professions' ethical frameworks, it is anticipated that the dental professionals' ethic will be more completely informed, and will not only reflect concern for his or her fellows, but also reflect an intimate relationship with the creator God.

The code contains specific admonitions which are limited in number but comprehensive in nature. It is anticipated that values of honesty, integrity, and altruism will be enhanced by students during their professional training so that following graduation these virtues will be second nature in the professional service provided to patients. Thus, the relationship of trust between dental professional and patient can develop to benefit both the profession and the public. This is a goal the School feels it must meet as it seeks to train the dental professionals to become competent in all aspects of patient care.

The School of Dentistry code of professional ethics applies to all students (dental hygiene, predoctoral, and international dentist students; as well as, graduate, certificate, residents, fellows, preceptors, research scholars, and exchange students).

The School of Dentistry code of professional ethics with its specific guidelines is available for review in the School of Dentistry section of the LLU *Student Handbook*.

## PROFESSIONAL PROCESSES AND STANDARDS

### Professional leadership

For all leadership positions, students must maintain a minimum G.P.A. of 2.7 (for president or vice president) and a minimum G.P.A. of 2.5 for all other offices.

### Dental Student Association

The primary student organization in the School of Dentistry is the Dental Student Association (DSA). DSA purposes to foster service-learning activities, stimulate scientific research, facilitate professional development, involve students in the governance of the school, and encourage recreational and social experiences. All predoctoral dental and international dentistry students and dental hygiene students automatically become members of the DSA at matriculation. DSA officers are elected by ballot every spring with their term beginning in summer. The officers include: president, vice president, social vice president, secretary, treasurer, and chaplain.

### Professional organizations

Students are invited to represent the school in the relevant professional organizations. The Office of Student Affairs facilitates the process to elect representatives for the following organizations:

- Loma Linda University Dental Student Association (DSA)
- American Student Dental Association (ASDA)
- American Dental Hygiene Association (ADHA)
- California Dental Association (CDA)
- American Dental Education Association (ADEA)

### Class leadership

Class leaders are elected annually during the Fall Quarter for the first year and summer quarters thereafter. Leaders are elected by class colleagues and voted into office by a confidential vote. The leaders work as a team to coordinate class events—including learning, spiritual, and social experiences. The leaders also facilitate communication between their class and school administration.

### Standing committees

Students are invited to serve on numerous standing committees for the school for each academic year. The Office of Student Affairs consults with DSA prior to nominating students to serve on committees, including Academic Review Committee and Professional Standards Committee. The election process takes place during the Summer Quarter.

## SPECIAL OPPORTUNITIES

### Conventions

The annual Alumni-Student Convention, sponsored since 1960 by the Alumni Association, gives opportunity for students to meet alumni and listen to presentations by prominent guest lecturers in the dental profession.

Students have the opportunity to research presentations in the form of table clinics. The winners are then invited to present their table clinics at state and national conventions.

**Dedication service**

A dedication service is held during the convention, giving students an opportunity to dedicate their professional life to Christ. First-year students (D1) are presented with personalized Scriptures; graduating students are given personalized Loma Linda University laboratory coats.

# Academic Information

## GENERAL POLICIES

### Registration

The student must register on or before the dates designated by the Office of University Records. Early registration is encouraged. Registration procedures are completed electronically at the myLLU registration portal <ssweb.llu.edu/login>. Once at the portal, a student must clear registration holds (student health, transcript, housing) and finance. At the beginning of the first quarter of attendance, a student is required to have a picture taken for the student identification badge. International students must also register with the International Student Affairs office each quarter.

Late registration is permissible only in case of a compelling reason. A charge is applied if registration is not completed by the designated dates. The student may not attend class without being registered, and in no case may registration take place later than the first week of the term. A change in registration after the second week affects the grade record. A student may not concurrently register for courses in another school of the University without permission from the executive associate dean.

### Attendance

Regular attendance at lectures, clinics, and other assemblies is required of all students. All lectures and laboratories provide information essential for successful completion of the program. Each student is responsible for all material covered and assignments made. *Absences in excess of 15 percent may be sufficient cause for a failing or unsatisfactory grade to be recorded.* Clinics and individual courses/instructors may have more stringent requirements.

### Length of academic residence

To fulfill the requirement pertaining to length of academic residence, the student must be registered for a full course load at the University for the entire senior year for the Bachelor of Science degree; and the entire third (D3) and fourth (D4) years for the Doctor of Dental Surgery degree.

### Dean's list

Outstanding academic performance will be rewarded by publication of the Dean's List each quarter. The eligibility requirements are:

- Complete at least 12 units of graded course work during the quarter;
- Achieve a term grade-point average of at least 3.5 with no grade lower than a B-;
- Receive no incomplete grades on the grade report.

### Course waiver

A course requirement may be waived if the applicant has previously taken the course and earned a grade of B or above, but no credit results. Evaluation for waiver of courses will be completed only after an applicant has been accepted to the program, and must be approved by the course director at this University and the school's executive associate dean. Tuition is not reduced if courses are waived or if a student takes less than a full load.

### **Special examination**

It is the policy of the school that all students are expected to take examinations at the scheduled time. The only acceptable excuse for not taking an examination on time is major illness (documented by the Student Health Service and conveyed to the course director and the Office of Student Affairs prior to the examination). The consequences of missing an examination under the circumstances of documented illness are determined by the course director. If a student appears late for an examination, s/he may be denied admission to the examination site. If a student arrives late for an examination and is allowed to take it, s/he will be required to finish the examination at the same time as students who arrive on time.

### **Repeating/Remediating a course (predoctoral, IDP, and dental hygiene programs)**

If a student receives an unsatisfactory or failing grade in a required course, it will be necessary for him/her to do additional work. Based on the original grade earned by the student, and upon the recommendation of the Academic Review Committee, one of the following plans will be pursued:

1. For courses with unsatisfactory performance (D+/D/U grades) the student must reregister for the course, review the course work independently, repeat required assignments or quizzes, and take any or all course examinations as required by the course director. The highest grade allowed for a remediated course is C. At the discretion of the Academic Review Committee and course director, the student may be required to repeat the course at the next course offering.
2. For courses with failing performance (F grades), the student must reregister for the course, attend the class and/or laboratory, and take all course examinations at the next regular course offering.
3. Both the original and repeat grades are entered into the student's permanent academic record, but only the repeat grade units are computed in the grade-point average.

## **ACADEMIC CRITERIA FOR PROMOTION (PREDOCTORAL, IDP, AND DENTAL HYGIENE PROGRAMS)**

### **Academic criteria for academic advancement and program completion**

#### **Predocctoral**

##### *Level D1 to Level D2*

- Cumulative didactic and preclinical laboratory G.P.A. at or above 2.0.
- Successful completion of D1 comprehensive examination.
- Successful completion of all courses in the D1 curriculum.

##### *Level D2 to Level D3*

- Cumulative didactic and preclinical laboratory G.P.A. at or above 2.0.
- Successful completion of National Board Examination, Part I.
- Successful completion of all courses in the D2 curriculum

*Level D3 to Level D4*

- Cumulative didactic and preclinical laboratory G.P.A. at or above 2.0.
- Successful completion of National Board Examination, Part II.
- Successful completion of all courses in the D3 curriculum.

**IDP***Level 3 to Level 4*

- Cumulative didactic and clinical course G.P.A. at or above 2.0.
- Successful completion of all courses in the D3 curriculum.

**Dental Hygiene (B.S. degree)***Junior to Senior*

- Cumulative didactic and preclinical G.P.A. at or above 2.0.
- Successful completion of junior clinic promotion OSCE.
- Successful completion of all courses in the junior curriculum.

**Dental Hygiene (A.S. degree)***Sophomore to Junior*

- Cumulative didactic and preclinical G.P.A. at or above 2.0.
- Successful completion of sophomore clinic promotion OSCE.
- Successful completion of all courses in the sophomore curriculum.

**Graduate students/Residents**

- Cumulative didactic and laboratory G.P.A. at or above 3.0 (B).
- Successful completion of all evaluations.
- Successful completion of annual student evaluation (includes a review of entire academic record).
- Selection for advancement to Master of Science degree candidacy (for those on M.S. degree track only).

**SCHOOL OF DENTISTRY ACADEMIC REQUIREMENTS FOR GRADUATION**

A candidate completing requirements in the Spring Quarter is expected to be present at the commencement exercises and receive the diploma in person. Permission for the degree to be conferred in absentia is contingent upon the recommendation of the school dean to the University president and can be granted only by the president. If a candidate has not satisfactorily fulfilled all requirements, the University reserves the right to prohibit participation in commencement exercises.

## Dentistry

A candidate for the Doctor of Dental Surgery degree must be at least twenty-one years of age and must have:

1. Satisfactorily completed all the requirements of the curriculum—including specified attendance, level of scholarship, length of academic residence, number of credit units, and service-learning requirements.
2. Completed special examinations, as required by the faculty.
3. Successfully completed Parts I and II of the National Board Examination.
4. Demonstrated evidence of satisfactory moral and professional conduct, of due regard for Christian citizenship, and of consistent responsiveness to the established aims of the University.
5. Discharged financial obligations to the University.
6. Been certified by the faculty as approved for graduation.

## Dental Hygiene (B.S. degree)

In order to be eligible for graduation, the student must have:

1. Completed the Undergraduate Intent to Graduate form.
2. Completed all the requirements for admission to the chosen curriculum.
3. Satisfactorily completed all chosen requirements of the curriculum, including specified attendance, level of scholarship, length of academic residence, and number of credit units.
4. Attended a regionally accredited college for the first two years, and Loma Linda University School of Dentistry for the junior and senior years.
5. Achieved no lower than a C- grade in all core courses and a minimum grade-point average of 2.0.
6. Completed special examinations as required by faculty.
7. Passed the Dental Hygiene National Board Examination.
8. Demonstrated evidence of satisfactory moral and professional conduct, of due regard for Christian citizenship, and of consistent responsiveness to the established aims of the University.
9. Discharged financial obligations to the University.
10. Been certified by the faculty as approved for graduation.
11. Completed dental hygiene training with a certificate or Associate in Science degree from an accredited college and completed the Degree Completion Program at the School of Dentistry (pertains to Degree Completion Program graduates only).

## Dental Hygiene (A.S. degree)

In order to be eligible for graduation, the student must have:

1. Completed the Undergraduate Intent to Graduate form.
2. Completed all the requirements for admission to the chosen curriculum.
3. Satisfactorily completed all the chosen requirements of the curriculum, including specified attendance, level of scholarship, length of academic residence, and number of credit units.
4. Attended a regionally accredited college for one year, and Loma Linda University School of Dentistry for two years (minimum of seven quarters).
5. Achieved no lower than a C- grade in all core courses and a minimum grade-point average of 2.0.
6. Completed special examinations, as required by faculty.
7. Passed the Dental Hygiene National Board Examination.

8. Demonstrated evidence of satisfactory moral and professional conduct, of due regard for Christian citizenship, and of consistent responsiveness to the established aims of the University.
9. Discharged financial obligations to the University.
10. Been certified by the faculty as approved for graduation.

## **NATIONAL DENTAL BOARDS**

Successful completion of the National Board Examination, Parts I and II (NBE-I and NBE-II) is a requirement for graduation. The National Board examinations are designed to assess cognitive knowledge of the basic, behavioral, and clinical sciences. Eligibility to sit for either part of the National Board Examination is determined by successful completion of the curriculum leading up to the examination. In addition, students are required to pass a comprehensive examination that assesses mastery of the test specifications prior to each National Board Examination. The eligibility requirements and timetable for passing the National Board Examination are stated below:

### **Part I**

#### **First attempt**

Scheduled during June or July following completion of the second year. If a student fails the examination, s/he will have her/his scheduled clinic time substantially reduced. During this time, students will be required to study for a reexamination no later than December.

#### **Second attempt**

If a student does not successfully complete the second attempt of the Part I examination by the end of Autumn Quarter, s/he will be required to take a two-quarter leave of absence to prepare for re-examination the succeeding Summer Quarter.

#### **Third attempt**

After taking the reexamination in the succeeding Summer Quarter, the student will be allowed to work on the clinic until examination results are received. If the student successfully completes the Part I examination, s/he will continue to work on the clinic for the Summer and Autumn quarters and will begin didactic courses again during the Winter Quarter with the current third-year students. If the student does not successfully complete the National Board Examination, Part I on the third attempt, s/he will be discontinued from the program.

### **Part II**

#### **First attempt**

Scheduled in December of the fourth year. If the examination is not successfully completed, access to the clinic will be restricted in order to provide additional time for study. The student will be given an opportunity to retake the examination in the following Spring Quarter. National Board Examination policy requires subsequent attempts to be at least ninety days apart. If a student fails the Part II examination, s/he will not be permitted to participate in licensure examinations.

**Second attempt**

A student who fails the Part II examination a second time will be required to take a leave of absence to prepare for a re-examination. A candidate for the Doctor of Dental Surgery degree must have successfully completed Parts I and II of the National Board Examination before being awarded the D.D.S. degree.

**PROCEDURES FOR ACADEMIC REVIEW (PREDOCTORAL, IDP, AND DENTAL HYGIENE PROGRAMS)**

There are six academic review committees: D1, D2, D3, D4, IDP, and Dental Hygiene. Membership of each committee consists of the executive associate dean, the associate dean for student affairs, the associate dean for admissions, and the course directors of all courses required of the respective class in the academic year. The associate dean for clinic administration and primary attending faculty are members of the D3/D4 academic review committees. In addition, each committee has two student members appointed by the dean in consultation with the DSA officers. Student committee members will be in the class one year ahead of the class being reviewed.

The academic review committees meet once per quarter to evaluate student academic and clinical performance and progress records. Students whose performance does not meet the stated academic standards and students who are being considered for discontinuation may be scheduled for a hearing with the committee.

The committee also recommends to the dean all appropriate candidates for promotion, academic probation, repeat, or other appropriate actions; as well as students who should receive special recognition for academic excellence.

The process for evaluation of academic performance is as follows:

1. The academic review committee—by reviewing grades, reports, and other pertinent information—identifies students whose academic and/or clinical performance is below acceptable levels.
2. The associate dean for student affairs notifies a student facing possible academic sanctions regarding the time and place for a hearing called for the purpose of allowing the student to appear before the committee to present reasons why action should not be taken. The academic review committee considers the student's presentation and all available information before making a recommendation.
3. The dean may enforce one or more of four academic sanction options:
  - Academic probation
  - Remedial action
  - Academic leave of absence
  - Academic discontinuation

Please refer to the academic disciplinary policy for more specific descriptions regarding each academic sanction.

4. A student may appeal the decision of the academic review committee to the dean. Such appeals are not expected to be routine and should be considered only in circumstances where new and relevant information exists that was not available for consideration by the academic review committee. The dean will review the matter and either render a decision or appoint a three-member ad hoc committee. Members of this committee will not have been involved in the academic review committee decision process. The ad hoc committee will determine whether the

process was appropriately followed, review new information, and judge whether the record supports the decision. They will report their findings and recommendation to the dean, who will decide if the appealing student will be permitted to continue participating in classes and/or clinical assignments during the appeal proceedings.

## **ACADEMIC DISCIPLINARY POLICY (PREDOCTORAL, IDP, AND DENTAL HYGIENE PROGRAMS)**

### **Academic probation**

Academic probation is a specified period of time during which the student is given an opportunity to comply with specific academic standards. Such action must be confirmed by letter to the student.

#### **Criteria for placement on academic probation**

A student will be placed on academic probation if s/he meets one or more of the following conditions:

1. Term or cumulative grade-point average (G.P.A.) below 2.0.
2. Failing or unsatisfactory (U/F/D+/D) grades in any course required for the degree.
3. Clinical performance below minimum expected for current academic level.
4. Social/behavioral/ethical problems that significantly impact academic and/or clinical performance.

#### **Level of academic probation**

The level of academic probation indicates the seriousness of the cumulative academic deficiency. However, depending on the seriousness or nature of the academic deficiency, a student may be considered for academic leave of absence or discontinuation at any level of probation.

Level I First term on academic probation.

Level II Second term on academic probation, consecutive or nonconsecutive.

EXCEPTION: Continued academic probation due to failing grade in a course that cannot be repeated until a later term or failure to reregister in the succeeding quarter.

Level III Third term on academic probation, consecutive or nonconsecutive. If a student is unable to remove academic probationary status within the following term, s/he will be considered for academic discontinuation.

EXCEPTION: Continued academic probation due to failing grade in a course that cannot be repeated until a later term or failure to reregister in the succeeding quarter.

Level IV If a student meets the criteria for academic probation for a fourth term, consecutive or nonconsecutive, s/he will be considered for academic discontinuation.

### **Clinic probation (predoctoral program)**

#### **Student in good clinic standing**

The student who meets attendance requirements, clinic point requirements, and requirements as defined by the clinical departments in the School of Dentistry shall receive a "Satisfactory" (S) grade for the quarter.

**Clinic Probation Level I (CPI)**

A student who meets one or more of the following criteria:

1. Fails to meet the attendance requirement.
2. Fails to meet the published minimum clinic point requirement.
3. Fails to achieve the standards of care expected in the quality of patient treatment.
4. Fails to meet the requirements defined by the clinical departments in the School of Dentistry.

A student on CPI will receive a "Marginal Satisfactory" (MS) grade and may be required to attend Friday afternoon clinic sessions for the following quarter. The student on CPI will not be eligible for honors programs during the time s/he is on probation. The student is notified in writing of his/her probation status.

If a student, while on CPI, meets the attendance requirements, achieves the overall minimum clinic point requirement at the end of the remedial quarter, improves the quality of patient treatment as needed, and completes all requirements as defined by the clinical departments, s/he returns to "good standing" status and will not be required to attend the Friday afternoon clinic sessions the following quarter.

**Clinic Probation Level II (CPII)**

A student who, while on Clinic Probation Level I, meets one or more of the following criteria:

1. Fails to meet the attendance requirement.
2. Falls more than 200 points below the minimum points required for the remedial quarter.
3. Fails to achieve the standards of care expected in the quality of patient care.
4. Fails to complete requirements defined by the clinical departments in the School of Dentistry.

A student on Clinical Probation Level II will receive an "Unsatisfactory" (U) grade, reregister for the SDCL course for which s/he received the "U" grade, and continue to attend Friday afternoon clinic sessions. A student on CPII will not be eligible for honors programs. The student on CPII will have one quarter to meet the attendance requirement, finish the quarter with fewer than 200 points below the requirement, meet the standard of care expected in the quality of patient care, and complete all requirements as defined by the clinical departments in the School of Dentistry.

If a student, while on CPII, meets the attendance requirement, improves the quality of patient care, completes the requirements defined by the clinical departments of the School of Dentistry, and finishes the quarter with fewer than 200 points below the minimum, s/he will return to CPI. The student can eventually work back to good standing.

**Clinic Probation Level III (CPIII)**

A student who, while on CPII, meets one or more of the following criteria:

1. Completes the remedial quarter more than 200 points below the minimum.
2. Fails to meet the attendance requirement.
3. Fails to achieve the standards of care expected in the quality of patient care.
4. Fails to complete requirements defined by the clinical departments in the School of Dentistry during the remedial quarter.

Clinic Probation Level III requires the academic review committee to consider discontinuing the student or to require him/her to repeat one academic year. If the academic review committee votes to require a student to repeat a year, the student will join the next graduating class at that point in the academic calendar. The academic review committee will determine which courses (if any) the student must repeat. When a student is required to repeat one year, s/he immediately returns to "good standing" status.

### **Restrictions for a student on academic probation**

A student on academic probation:

1. May not serve as an officer for any class, school, or extracurricular organization.
2. May not take any elective courses.
3. May not participate in any elective off-campus service learning or mission activities.
4. Remains on academic probation until all the terms of the probation sanctions have been fulfilled, unless the student is discontinued.

### **Remedial action or remediation**

As a condition for continued enrollment, remedial action for the student may consist of:

1. Counseling, tutoring, and/or repeating assignments or course work; or completing additional assignments or course work, possibly including repeating an academic year or portion thereof.
2. Other specified requirements.

### **Academic leave of absence**

Academic leave of absence is a specified period of time during which the student is withdrawn from the academic program. Upon request to and approval by the academic review committee, the student may return to the program at a year/term level specified by the committee. The student may be requested to fulfill specific requirements prior to re-entering the academic program.

The following guidelines pertain to when an academic leave of absence may be considered for a student who is in one or more of the following situations:

- Student has a serious academic deficit which cannot be removed while continuing with current course work.
- At the end of the academic year, student does not meet the criteria for promotion to the next academic year.
- Student has three consecutive quarters on academic probation.
- Student has not passed the National Board Examination on schedule after two attempts and needs full study time to prepare for the National Board Examination.
- Student fulfills criteria for academic discontinuation, yet shows promise for future success despite current deficiencies.

Return from an academic leave of absence requires that the student reapply for admission by written request to the executive associate dean. The student must meet the requirements for readmission specified by the academic review committee at the time the leave of absence was granted. The requirements for readmission may also be reviewed by the academic review committee.

## Academic discontinuation

Guidelines for academic discontinuation are indicated below for predoctoral, IDP, and dental hygiene students:

### D1 Year

- Any term with one or more failing grades, regardless of term or cumulative G.P.A.
- Three or more unsatisfactory or failing grades within the academic year, regardless of term or cumulative G.P.A.
- Three consecutive quarters on academic probation.
- Failure to fulfill terms of academic probation within the specified time period.
- Failure to meet criteria for promotion to D2 year by the end of the D1 year.

### D2 Year

- Any term with one or more failing grades, regardless of term or cumulative G.P.A.
- Four or more unsatisfactory or failing grades since enrollment in the program, regardless of term or cumulative G.P.A.
- Failure to fulfill terms of academic probation within the specified time period.
- Level IV academic probation.
- Failure to meet criteria for promotion to D3 year by the end of the D2 year.

### D3 Year

- Any term with one or more failing grades, regardless of term or cumulative G.P.A.
- Five or more unsatisfactory or failing grades since enrollment in the program, regardless of term or cumulative G.P.A.
- Failure to fulfill terms of academic probation within the specified time period.
- Level IV academic probation.
- Failure to meet criteria for promotion to D4 year by the end of the D3 year.

### D4 Year

- Failure to pass either section of the National Board Examination within three attempts.
- Failure to achieve eligibility for graduation within five full academic years of enrollment in the dental program. *Exception for students who are required to repeat an academic year or who are on a revised program. These students must achieve eligibility for graduation within one year of the new graduation date assigned at the time of change to an alternate program.*

### Dental hygiene juniors

- Any term with one or more failing grades, regardless of term or cumulative G.P.A.
- Three or more unsatisfactory or failing grades within the academic year, regardless of term or cumulative G.P.A.
- Failure to fulfill terms of academic probation within the specified time period.
- Failure to meet criteria for promotion to DH senior year by the end of the DH junior year.

### Dental hygiene seniors

- Any term with one or more failing grades, regardless of term or cumulative G.P.A.
- Three or more unsatisfactory or failing grades within the academic year, regardless of term or cumulative G.P.A.
- Failure to fulfill terms of academic probation within the specified time period.
- Failure to pass the National Board Examination within three attempts.
- Failure to achieve eligibility for graduation within three full academic years of enrollment in the dental hygiene program.

In some situations the academic review committee may recommend that a student repeat an academic year (or portion thereof) as an alternative to discontinuation.

### STUDENT-INITIATED ACADEMIC GRIEVANCE PROCEDURE

If a student wishes to contest a grade, s/he should discuss the grade first with the instructor, where appropriate; then with the course director, if applicable; and finally with the department chair. If the student is not satisfied, s/he may then appeal to the executive associate dean (for further discussion of the academic grievance process, see Loma Linda University *Student Handbook*, Section V—University Policies).

### ACADEMIC STANDARDS FOR ADVANCED DENTAL EDUCATION PROGRAMS

#### Grading system for advanced education programs

The following information outlines the grading systems for all postdoctoral students/residents enrolled in advanced education programs in the School of Dentistry. Each course taught in the school has been approved for either a letter grade or an S/U grade, and deviations from this are not allowed other than the MS grade as specified below.

#### Grades and grade points for postdoctoral students/residents

A	4.0	Outstanding performance
A-	3.7	Very good performance
B+	3.3	
B	3.0	Satisfactory performance for which credit is granted toward degree. Minimum grade for program/department required core courses. (This also is the minimum final grade for tuition reimbursement by Loma Linda University for faculty and staff taking graduate classes.)

Postdoctoral students/residents who receive one or more of the following grades in any quarter will be placed on academic probation if their cumulative G.P.A. is below 3.0.

B-	2.7	Passing grade but cumulative G.P.A. must be 3.0 or higher to avoid academic probation.
C+	2.3	Remediation* required and cumulative G.P.A. must be 3.0 or higher to avoid academic probation.
C	2.0	Remediation* required and cumulative G.P.A. must be 3.0 or higher to avoid academic probation.

Postdoctoral students/residents who receive one or more of the following grades in any quarter will be placed on academic probation and must retake the course(s) for which these grades were received.

C-	1.7	Course must be retaken.
D+	0.0	Failure; course must be retaken.
D	0.0	Failure; course must be retaken
F	0.0	Failure; course must be retaken.
S	none	Satisfactory performance, counted toward graduation. Equivalent of a B grade or better. An S grade is not computed in the grade-point average.
MS	none	Marginally satisfactory, equivalent to a C+ or C; remediation* required. *To remediate a course, a detailed, written plan must be developed by the course instructor/program director outlining how deficiencies will be remedied and reassessed. The plan must be approved by the Office of Advanced Education, after which the student is required to register for the appropriate directed study course in the quarter following receipt of the MS grade for the number of units to be remediated. Select SDCL 696 Directed Study for didactic courses and SDCL 896 Clinical Directed Study for clinical courses. An Independent Study Title Request form must be completed (electronically) by the student for each directed study course, and must include a description of the approved remediation plan.
U	none	Unsatisfactory performance, given only when performance falls below a B grade level. The U grade is not computed in the grade-point average. Course must be remediated or repeated to count toward a degree.
S/N	none	Satisfactory performance in a clock hour course. Not included in total units. Same grading criteria as the S grade given for a credit hour course.
U/N	none	Unsatisfactory performance in a clock hour course. Not included in total units. Same grading criteria as the U grade given for a credit hour course.
CR	none	Credit earned for credit by examination. Counted toward graduation/units earned, but not units attempted. Such credit cannot be counted for financial aid purposes.

NC none No credit for satisfactory performance for a credit by examination. Does not count for any purpose.

University policy states that "a student may repeat a course only once, and no more than two courses may be repeated in a student's degree program."

## **ACADEMIC CRITERIA FOR ACADEMIC ADVANCEMENT AND PROGRAM COMPLETION**

### **Postdoctoral student/Resident**

- Cumulative, didactic, and laboratory G.P.A. at or above 3.0 (B).
- Selection for advancement to Master of Science (M.S.) degree candidacy.
- Selection for advancement to Master of Science in Dentistry (M.S.D.) degree candidacy.
- Successful completion of all evaluations.
- Successful completion of annual student evaluation (includes a review of entire academic record).

## **ACADEMIC DISCIPLINARY POLICY**

### **Academic probation**

Academic probation is a specified period of time during which the student is given an opportunity to comply with specific academic standards. Such action must be confirmed by memorandum to the student. For a postdoctoral student/resident, a grade of 3.0 (B) is considered satisfactory performance for graduate credit.

### **Criteria for advisory notice of potential for academic probation (postdoctoral students and residents)**

A postdoctoral student/resident will be sent an advisory letter of the potential for placement on academic probation under the following conditions:

1. Term G.P.A. of 2.7 (B-).
2. One or more courses with grade of B-.
3. One or more courses with a grade of marginally satisfactory (MS).

### **Criteria for placement on academic probation (postdoctoral students and residents)**

A postdoctoral student/resident will be placed on academic probation if s/he meets one or more of the following conditions:

1. Term G.P.A. of 2.3 (C+) or below.
2. One or more courses with B-, C+, or C grade; and an overall G.P.A. below 3.0.
3. Failing (F/U/D+/D/D-) or unsatisfactory (C-) grades in any course required for the specialty certificate, Master of Science (M.S.) degree, or Master of Science in Dentistry (M.S.D.) degree program.
4. Clinical performance below minimum expected for his/her year level.
5. Social/behavioral/ethical problems that significantly impact academic and/or clinical performance.

**Level of academic probation (postdoctoral student and resident)**

The level of academic probation indicates the seriousness of the cumulative academic deficiency. However, depending on the seriousness or nature of the academic deficiency, a student/resident may be considered for academic leave of absence or discontinuation at any level of probation.

**Level I**

First term on academic probation.

**Level II**

Second term on academic probation, consecutive or nonconsecutive.

**EXCEPTION:** Continued academic probation due to failing grade in a course that cannot be repeated until a later term.

**Level III**

Third term on academic probation, consecutive or nonconsecutive. If a student/resident is unable to remove academic probationary status within the following term, s/he will be considered for academic discontinuation.

**EXCEPTION:** Continued academic probation due to failing grade in a course that cannot be repeated until a later term.

**Level IV**

If a student/resident meets criteria for academic probation for a fourth term, consecutive or nonconsecutive, s/he will be considered for academic discontinuation.

**Restrictions for a student on academic probation**

A student/resident on academic probation:

1. May not serve as an officer for any class, school, or extracurricular organization.
2. May not take any elective courses.
3. May not participate in any elective off-campus service learning or mission activities.
4. Remains on academic probation until all the terms of the probation sanctions have been fulfilled, unless the student/resident is discontinued.

**Remedial action (remediation)**

As a condition for continued enrollment, remedial action may consist of:

1. Counseling, tutoring, and/or repeating assignments or course work; or completing additional assignments or course work—possibly including repeating an academic year or portion thereof.
2. Other specified requirements.

**DISCIPLINARY ACTIONS**

A student who is not performing up to expectations can receive the following:

1. Restriction of clinical privileges—by program director.
2. Academic probation (Level I to III)—by the associate dean for advanced education or upon the recommendation of the program director.

3. Behavioral probation (Level I to III)—by the associate dean for advanced education or upon the recommendation of the program director.
4. Clinical probation (Level I to III)—by the associate dean for advanced education or upon the recommendation of the program director.
5. Discontinuation—by the associate dean for advanced education or upon the recommendation of the program director recommended to the dean.

### **Probation**

All recommendations to the associate dean for advanced education must be supported by well-documented evidence of repeated counseling and other internal measures designed to point out deficiencies and take corrective action through a detailed remediation program. A remediation program must be specific in design, implemented, and monitored for any student/resident who is not performing up to a program's stated standards. It is important to have documentary evidence on record by multiple faculty members with detailed accounts of dates, times, explanations of counseling, discussions, and corrective measures. Written statements from support staff should also be included if they have direct contact or knowledge of a matter involving a postdoctoral student/resident.

Postdoctoral students/residents may be placed on academic probation, behavioral probation, and/or clinical probation. Probation begins at Level I and may progress to Level III. Postdoctoral students/residents should be placed on probation for a prescribed period of time: one quarter, two quarters, etc. This information should be conveyed to a student/resident in writing (required) and also verbally (recommended).

### **Continuation**

Students who are not progressing as expected may be continued in their year group for as long as necessary before being promoted to the next year or discontinued. To exercise this option, the associate dean for advanced education must inform University Records of the decision to continue a student/resident and state the anticipated length of that continuation. Program directors make the determination as to when to recommend continuing a student and when to recommend discontinuing a student/resident and allowing him/her to graduate or continue his/her studies. Invariably, the length of the continuation period will determine when a student/resident actually completes his/her program.

### **Discontinuation**

Students who do not make any measurable improvement by the end of the prescribed remediation and counseling periods may be recommended for discontinuation by the associate dean for advanced education or upon the recommendation of the respective program director to the associate dean for advanced dental education. Recommendations to discontinue a student/resident are then sent to the dean (in writing) for action.

### **Criteria for discontinuation**

- Three or more unsatisfactory or failing grades within the academic year, regardless of term or cumulative G.P.A.
- Three consecutive quarters of academic probation.
- Failure to fulfill terms of academic probation within the specified time period.
- Failure to achieve eligibility for award of a certificate in the clinical specialty program within the standard number of full academic years.

## **SERVICE-LEARNING**

Service-learning at Loma Linda University School of Dentistry continues the original purpose of the school—to train dental health professionals to provide service to underserved populations, both locally and abroad.

Field experience for students of dentistry and dental hygiene includes extramural opportunities within the U.S. and in foreign countries. In addition to providing clinical treatment, service-learning experiences include local health fairs and elementary school dental health presentations. Service experiences may last from one day to several weeks.

All students are required to complete assigned service-learning rotations and minimum clock hours, as described in each program. Predoctoral dental students are required to complete a minimum of 120 service-learning hours. Forty hours must be completed doing local community service dentistry. Up to 30 of the remaining 80 hours may be completed doing nondental service. Dental hygiene students must complete 75 service-learning hours. Thirty-five hours of local service are required, and up to 15 nondental service hours may be credited. International Dentist Program students must complete 60 hours of service. Of the 60 hours, 40 will be assigned by the program. Up to 10 hours of nondental service may be completed as part of the 60 hours total requirement. In addition, a didactic component is included within the service-learning program. Lectures are embedded within existing courses and occur throughout the curricula.

Students are required to be in good and regular standing to be eligible to participate in elective international service-learning experiences.

## **LEARNING ENVIRONMENT**

Because the study of dental sciences and arts is based on a foundation in essentially the same science subjects as are studied in medicine and allied health curricula, the School of Dentistry shares with the School of Medicine the facilities for teaching basic sciences.

Classrooms, laboratories, student lounges, teachers' offices, and clinical facilities related solely to dentistry occupy the School of Dentistry building, named in honor of M. Webster Prince, the first dean. Prince Hall is on the University mall facing the University Church and adjacent to the Medical Center. The facilities effectively accommodate collaboration with the Medical Center in ongoing research and service programs.

The total resources of the University constitute a wealth of opportunity for the student with initiative and willingness to develop individual capacity to the fullest extent. Students find varied opportunities for serving and learning in the immediate University community, in school-sponsored service-learning clinics, in clinical and research electives, and in diverse volunteer programs.

## **BASIC SCIENCES**

The Loma Linda University departments of basic sciences include anatomy, biochemistry, microbiology, and physiology and pharmacology. The basic sciences serve as the foundation for the dental sciences by leading toward an understanding of normal structure and function, as well as introducing the basis for pathology in the practice of dentistry.

Subjects are taught in the first year of the dental hygiene and the first two years of the general dentistry curricula as part of three conceptually integrated sequences of courses—sequences in physiology, in anatomy, and in applied science. Throughout the basic sciences, an appreciation of God's creation and His wisdom is reinforced through the study of human biology. Students are encouraged to extend their knowledge and apply it for their own well-being and for the well-being of their patients.

The purpose of the basic science curriculum is to provide a foundation of knowledge that is essential for the practice of dentistry and dental hygiene. The faculty are dedicated to providing students with tools that expand their thinking and challenge them to ask probing questions and to earnestly search for answers. Their aim is to prepare students to excel scientifically. The higher aim is, through the Christian atmosphere of this University, to prepare students to become truly compassionate dentists.

## Financial Information

### FINANCIAL POLICIES

The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy in regard to reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs in regard to these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees on the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### GENERAL FINANCIAL PRACTICES

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Previous accounts with other schools or this University must have been settled.

### Satisfactory Academic Progress Policy (all programs)

To be eligible for federal, state, and University financial aid, students are required by the U.S. Department of Education and the State of California to maintain satisfactory progress toward their degree objectives. In compliance with prescribed regulations, the University and School of Dentistry have established guidelines that are designed to ensure that students successfully complete courses to promote timely advancement toward a specific degree objective.

#### Definition of satisfactory academic progress

The School of Dentistry defines satisfactory academic progress by the following three criteria:

1. Meeting a minimum grade-point average requirement.
2. Making yearly progress by completing the academic requirements defined for a program.
3. Completing the degree objective within the maximum time allowed.

#### Grade-point average requirement

To maintain satisfactory academic progress, students in the dental and dental hygiene programs must maintain a minimum cumulative grade-point average of 2.0. In addition, dental hygiene students must achieve no lower than a C- grade in all core courses.

#### Yearly progress requirement

Each student's academic progress is evaluated by the Academic Review Committee at the end of each academic term, and a cumulative review is conducted to determine eligibility for promotion at the end of each academic year. The Office of Academic Affairs monitors the minimum grade-point average requirement. The Financial Aid Office monitors yearly progress and the maximum time allowance.

Students whose academic standing or degree progress falls below the standard receive a financial aid warning during the next quarter of registration. If their academic standing or degree progress is not raised to the standard by the end of the quarter in which the financial aid warning was issued, all financial aid will be terminated for these students until the requirements have been met.

**Reasonable degree progress**

It is expected that students will complete the requirements for a degree within the scheduled curriculum time for the degree. The Doctor of Dental Surgery degree is scheduled to be completed in four years and may not exceed six years. The Bachelor of Science degree in dental hygiene is scheduled to be completed in two years in the professional curriculum and may not exceed three years. The Bachelor of Science dental hygiene online degree completion program is scheduled to be completed in six quarters and may not exceed 12 quarters in the professional curriculum. The Associate of Science degree in dental hygiene is scheduled to be completed in seven quarters and may not exceed 14 quarters in the professional curriculum.

**Certification of status**

The Office of Academic Affairs will certify the official status of each enrolled student at the end of each academic year to University Records and to the Office of Financial Aid.

**Student financial aid**

Federal loans are available only to United States citizens, green card holders, or those with permanent resident status. With good credit or a creditworthy cosigner, federal loans may be used to cover the entire academic budget. For more information, contact the Office of Financial Aid by email:

<finaid@univ.llu.edu>; or by telephone: 909/558-4509.

**SCHEDULE OF CHARGES (2011-2012)**

(subject to change by Board of Trustees action)

**Dentistry****Tuition\***

First Year	\$52,392	Rate effective Autumn, Winter, Spring quarters
Second Year	\$63,464	Rate effective beginning Summer Quarter
Third Year	\$63,464	Rate effective beginning Summer Quarter
Fourth Year	\$63,464	Rate effective beginning Summer Quarter

**Enrollment Fees**

First Year	\$2,037	Rate effective Autumn, Winter, Spring quarters
Second Year	\$2,716	Rate effective beginning Summer Quarter
Third Year	\$2,716	Rate effective beginning Summer Quarter
Fourth Year	\$2,716	Rate effective beginning Summer Quarter

**School of Dentistry Fees\***

First Year	\$1,670	Rate effective Autumn, Winter, Spring quarters
Second Year	\$920	Rate effective beginning Summer Quarter
Third Year	\$920	Rate effective beginning Summer Quarter
Fourth Year	\$920	Rate effective beginning Summer Quarter

**Instruments, Departmental and Other Supplies and Fees\***

First Year	\$9,468	Rate effective Autumn, Winter, Spring quarters
Second Year	\$9,032	Rate effective beginning Summer Quarter
Third Year	\$2,931	Rate effective beginning Summer Quarter
Fourth Year	\$1,422	Rate effective beginning Summer Quarter

**Total Tuition and Fees\***

First Year	\$65,482	Rate effective Autumn, Winter, Spring quarters
Second Year	\$76,132	Rate effective beginning Summer Quarter
Third Year	\$70,031	Rate effective beginning Summer Quarter
Fourth Year	\$68,522	Rate effective beginning Summer Quarter

**IDP 3rd Year****Tuition**

Spring 2011	\$19,852	Rate effective Spring Quarter
Summer 2011	\$21,043	Rate effective Summer Quarter
Autumn 2011	\$21,043	Rate effective Autumn Quarter
Winter 2012	\$21,043	Rate effective Winter Quarter

**Enrollment Fees**

Spring 2011	\$625	Rate effective Spring Quarter
Summer 2011	\$679	Rate effective Summer Quarter
Autumn 2011	\$679	Rate effective Autumn Quarter
Winter 2012	\$679	Rate effective Winter Quarter

**School of Dentistry Fees\***

Spring 2011	\$195	Rate effective Spring Quarter
Summer 2011	\$195	Rate effective Summer Quarter
Autumn 2011	\$195	Rate effective Autumn Quarter
Winter 2012	\$195	Rate effective Winter Quarter

**Instruments, Supplies, and Other Fees\***

Spring 2011	\$8,457	Rate effective Spring Quarter
Summer 2011	\$551	Rate effective Summer Quarter
Autumn 2011	\$277	Rate effective Autumn Quarter
Winter 2012	\$240	Rate effective Winter Quarter

**Total Tuition and Fees\***

Spring 2011	\$29,129	Rate effective Spring Quarter
Summer 2011	\$22,468	Rate effective Summer Quarter
Autumn 2011	\$22,194	Rate effective Autumn Quarter
Winter 2012	\$22,157	Rate effective Winter Quarter

**IDP 4th Year****Tuition**

Spring 2011	\$19,852	Rate effective Spring Quarter
Summer 2011	\$21,043	Rate effective Summer Quarter
Autumn 2011	\$21,043	Rate effective Autumn Quarter
Winter 2012	\$21,043	Rate effective Winter Quarter

**Enrollment Fees**

Spring 2011	\$625	Rate effective Spring Quarter
Summer 2011	\$679	Rate effective Summer Quarter
Autumn 2011	\$679	Rate effective Autumn Quarter
Winter 2012	\$679	Rate effective Winter Quarter

**School of Dentistry Fees\***

Spring 2011	\$195	Rate effective Spring Quarter
Summer 2011	\$195	Rate effective Summer Quarter
Autumn 2011	\$195	Rate effective Autumn Quarter
Winter 2012	\$195	Rate effective Winter Quarter

**Instruments, Supplies, and Other Fees\***

Spring 2011	\$229	Rate effective Spring Quarter
Summer 2011	\$258	Rate effective Summer Quarter
Autumn 2011	\$246	Rate effective Autumn Quarter
Winter 2012	\$439	Rate effective Winter Quarter

**Total Tuition and Fees\***

Spring 2011	\$20,901	Rate effective Spring Quarter
Summer 2011	\$22,175	Rate effective Summer Quarter
Autumn 2011	\$22,163	Rate effective Autumn Quarter
Winter 2012	\$22,356	Rate effective Winter Quarter

**Dental Hygiene****Tuition**

Junior Year	\$27,846	Rate effective Autumn, Winter, Spring quarters
Senior Year	\$37,128	Rate effective beginning Summer Quarter

**Enrollment Fees**

Junior Year	\$1,983	Rate effective Autumn, Winter, Spring quarters
Senior Year	\$2,644	Rate effective beginning Summer Quarter

**School of Dentistry Fees\***

Junior Year	\$1,665	Rate effective Autumn, Winter, Spring quarters
Senior Year	\$2,165	Rate effective beginning Summer Quarter

**Instruments Issue\***

Junior Year	\$5,532	Rate effective Autumn, Winter, Spring quarters
Senior Year	\$88	Rate effective beginning Summer Quarter

**Supplies and Other Fees\***

Junior Year	\$1,927	Rate effective Autumn, Winter, Spring quarters
Senior Year	\$475	Rate effective beginning Summer Quarter

**Total Tuition and Fees\***

Junior Year	\$38,953	Rate effective Autumn, Winter, Spring quarters
Senior Year	\$42,500	Rate effective beginning Summer Quarter

\*NOTE: The figures listed above are estimates based on the best information available for the 2011-2012 school year as of January 2011. Students should plan on an annual increase consistent with inflation in the education sector.

**ON- AND OFF-CAMPUS STUDENT HOUSING**

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) for housing information and a housing application form.

**AWARDS****General dentistry program**

Dentistry students are eligible to receive awards of various kinds for demonstrated excellence, scholastic attainment, leadership ability, technical ability, professional proficiency, initiative, and other accomplishments or achievements, according to the bases established by the donors. The names of all award recipients are printed in the University commencement program.

**General awards**

- Academy of Dentistry International
- Academy of General Dentistry
- Academy of Osseointegration Outstanding Implant Dentistry
- Academy of Operative Dentistry
- Alpha Omega Scholarship
- American Academy of Gold Foil Operators
- American Academy of Implant Dentistry
- American Academy of Oral and Maxillofacial Pathology
- American Academy of Oral and Maxillofacial Radiology
- American Academy of Oral Medicine
- American Academy of Orofacial Pain
- American Academy of Pediatric Dentistry
- American Academy of Periodontology
- American Association of Endodontists
- American Association of Oral and Maxillofacial Surgeons
- American Association of Oral Biologists
- American Association of Orthodontics
- American College of Dentists, Southern California Section

American College of Prosthodontists  
 American Dental Society of Anesthesiology  
 American Student Dental Association  
 Ben W. Oesterling  
 Boyko Award for Christ-like Service in Dentistry  
 California Association of Oral and Maxillofacial Surgeons  
 California Dental Association—Senior Awards  
 California Dental Association Community Leadership  
 David Anderson Recognition  
 Delta Dental Student Leadership  
 Dental Foundation of California Scholarships  
 Dentsply Student Clinician  
 Fixed Prosthodontics Department  
 G. Hartzell Clinician  
 Graduate Implant Dentistry  
 ICOI/Sullivan Schein Dental Pre-doctoral Achievement  
 International College of Dentists  
 Kenneth E. Wical  
 LLU Center for Dental Research  
 Omicron Kappa Upsilon William S. Kramer  
 Oral Surgery Department  
 PCSP/JPD Award in Excellence Prosthodontics  
 Pacific Dental Services Scholarship  
 Pierre Fauchard Academy  
 Pierre Fauchard Academy Scholarship  
 Service-Learning  
 Southern California Academy of Endodontics  
 Southern California Academy of Oral Pathology  
 Southern California Society of Dentistry for Children  
 Wil Alexander  
 Wilfred A. Nation

***Alumni Association Award***

The Alumni Association Award is given for manifested qualities and abilities indicative of potential for professional and community leadership.

***President's Award***

The President's Award is made annually in recognition of superior scholastic attainment and active participation in the student community, within the framework of Christian commitment. One recipient is selected from each school of the University.

***Dentistry Academic Excellence Silver Award***

A dental student who achieves a score of one standard deviation above the national mean on the NBE-I is acknowledged as follows:

- Certificate of recognition given at School of Dentistry Awards Chapel at the end of the fourth year

- School pays the fee for NBE-II
- Recognition in *LLU Dentistry Journal*
- Recognition in *LLU Dentalgram* (online version)
- Press release to student's home newspaper

#### ***Dentistry Academic Excellence Gold Award***

A dental student who achieves a score of one standard deviation above the national mean on both NBE-I and NBE-II is acknowledged as follows:

- Certificate of recognition given at the School of Dentistry Awards Chapel at the end of the fourth year
- School pays \$1500 towards the application fee for one state or regional licensure examination
- Recognition in *LLU Dentistry Journal*
- Recognition in *LLU Dentalgram* (online version)
- Recognition on a "perpetual" plaque on public display
- Press release to student's home newspaper

#### ***NASDAD Award***

An award is given by the National Association of Seventh-day Adventist Dentists to promote scholarship and to encourage high standards of character and conduct and the demonstration of leadership ability.

#### ***OKU Honor Society***

Omicron Kappa Upsilon (OKU), the national honor society for dentistry, was founded in 1914 for the purpose of promoting scholarship among dental students. Only students who rank in the upper 20 percent of the class qualify for consideration. A maximum of 12 percent of each graduating class is eligible for alumni membership.

#### ***M. Webster Prince Award***

M. Webster Prince, the first dean of the School of Dentistry, established in 1957 an annual award to be given to a fourth year student recognized by the D4 class and the faculty as having outstanding qualities of scholarship, leadership, and stewardship.

### **International Dentist Program**

In addition to being eligible for the special awards listed, students in the International Dentist Program are eligible to receive awards based on accomplishments and achievements that reflect the ideals of the program. The names of all awards recipients are noted in the University commencement program.

Professionalism Award

Lloyd Baum Clinical Excellence Award

Omicron Kappa Upsilon (OKU) Honor Society

LLUSD Clinical Excellence Award

Clinical Group Award

## Dental Hygiene programs

Dental hygiene students are eligible to receive awards by demonstrating scholastic attainment, leadership ability, technical and professional competency, and other accomplishments and achievements that reflect the ideals of the dental hygiene profession. The names of all award recipients are printed in the University commencement program.

The AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY AWARD is presented to a student who has demonstrated a special interest in community dentistry and commitment to dental public health. Selection is by vote of the dental hygiene faculty.

The BATES AWARD is given to the student who demonstrates notable achievement during training. Selection is by vote of the faculty.

The CALIFORNIA DENTAL HYGIENISTS' ASSOCIATION OUTSTANDING LEADERSHIP AWARD is presented by the California Dental Hygienists' Association to a student demonstrating professional leadership. The recipient of this award is selected by the dental hygiene class and faculty liaison.

The CLINICIAN'S AWARD is given to the student who demonstrates outstanding clinical achievements and the highest level of concern for patients. Selection is by vote of the faculty.

The DEAN'S AWARD is given for excellence in the combined characteristics of clinical ability and professionalism. Selection is based on the recommendation of the dental hygiene faculty and the dean.

The KLOOSTER HUMANITARIAN AWARD is given to the student who demonstrates a spirit of giving, kindness, and enthusiasm. Selection is by vote of the faculty.

The MIDDLETON AWARD is given in recognition of high standards of service, spiritual leadership, and dedication to church and humanity. The recipient of this award is chosen by the class.

The MITCHELL AWARD is given, by vote of the class, to the student considered to be the most outstanding leader during the two years of dental hygiene training.

The PREVENTIVE DENTISTRY AWARD FOR RESEARCH is sponsored by Johnson & Johnson and is presented in recognition of outstanding achievement in dental hygiene research. Selection is by vote of the dental hygiene faculty.

The SIGMA PHI ALPHA AWARD constitutes election to the national honor society for dental hygienists. It is based on scholarship and character and is limited to 10 percent of the class, chosen from the top 20 percent scholastically.

The STUDENT OF THE YEAR AWARD is given to the student who embodies the attributes of excellence and professionalism—the ideal student. Selection is by vote of the faculty.

The TRI-COUNTY DENTAL HYGIENIST'S SOCIETY AWARD is given in recognition of outstanding student contribution to the professional association. Selection is by vote of the Tri-County Society in conjunction with the faculty liaison.

The WESTERN SOCIETY OF PERIODONTOLOGY AWARD is given to a student who demonstrates outstanding achievement and aptitude in periodontics. The faculty vote on the recipient(s) of this award.

The DENTAL HYGIENE ACADEMIC EXCELLENCE AWARD is given to a dental hygiene student who achieves a score of 90 or above on the Dental Hygiene National Board Examination. The recipient will be acknowledged as follows:

- Notification of receipt of the Academic Excellence Award
- Certificate of recognition awarded during the pinning ceremony on commencement weekend
- \$750 scholarship
- Recognition in *LLU Dentistry Journal*
- Recognition in *LLU Dentalgram* (online version)

## Dentistry, General—SD

D.D.S.

CHARLES J. GOODACRE, Dean, School of Dentistry

The goal of the General Dentistry Program is to train practitioners in the delivery of high-quality dental care that is preventive in purpose and comprehensive in scope, and that is based on sound biological principles.

### CURRICULUM

Dentistry, like all health professions, exists to benefit society and, therefore, continually assesses its professional services to ascertain what measures, attitudes, and skills most effectively serve society.

The School of Dentistry is committed to:

- Beginning the curriculum with a strong foundation in the sciences that are basic to knowledge of the structure and function of the human being in health and in sickness.
- Providing an educational environment that progressively leads a student to mastery and correlation of clinical sciences and skills.
- Developing a frame of reference from which to mobilize the resources of dentists and associated professional personnel in both delivery of health care and contribution to community well-being by education for the prevention of illness.

These concepts include responsibility for contributing to the body of scientific knowledge by questioning, investigating, and teaching; for remaining sensitive and adaptive to the needs of humanity in ever-changing conditions; and for maintaining consciousness of the individual obligation to live, practice, and strive for the good of humanity.

The curriculum in dentistry, organized to be completed in four academic years, fulfills requirements for the Doctor of Dental Surgery degree.

### OBJECTIVE

The primary objective of the dental curriculum is to graduate men and women who attest to the purpose of the University and the goals of the School of Dentistry, which include advancing knowledge and understanding of health, disease, and ways to improve health and the dental health care delivery system through basic and applied research.

### ADMISSION

Information and procedures for applying to the Doctor of Dental Surgery Program can be found under Application and Admissions in the School of Dentistry general information in Section III of this CATALOG.

### REGULATIONS

The student is also subject to the conditions of registration, attendance, financial policy, governing practices, and graduation requirements outlined in Section II and in the School of Dentistry general information in Section III of this CATALOG.

## **INSTRUMENTS, TEXTBOOKS, ADDITIONAL MATERIALS**

The instruments, textbooks, and materials required for the study and practice of dentistry are prescribed by the School of Dentistry. The school issues dental instruments each quarter as needed in the program.

Unauthorized or incomplete equipment is not acceptable. Advance administrative approval must be obtained for any exception.

## **EMPLOYMENT**

Because the dental program is very rigorous, first-year students in dentistry may not accept part-time employment during the first term. Such employment thereafter may be accepted by the student only upon receiving written permission from the executive associate dean.

## **ACADEMIC INCENTIVE PROGRAM**

Detailed information on the Academic Incentive Program may be found under that heading in the School of Dentistry general information in Section III of this CATALOG.

## **LICENSING**

Eligibility to take examinations given by the state and regional boards of dental examiners is based on essentially the same requirements as are stipulated by the School of Dentistry for the Doctor of Dental Surgery degree. Information about the examinations of the respective states is available from the executive associate dean. Credentials from the National Board of Dental Examiners are accepted in lieu of the written portion of a state examination in most states. Many states require the National Board Examination and provide no alternative. (The national board does not include a clinical examination.)

## **D.D.S. COMPETENCIES**

The curriculum is designed to ensure that by graduation all students will have the skills, attitudes, and competencies important to the successful practice of dentistry. Students must be competent in the following knowledge and skills, and are expected to be able to perform them independently.

### **Domain I**

1. **CRITICAL THINKING**—Perform clinical decision making that is supported by foundational knowledge and evidence-based rationales.

The new dentist must be able to:

- a. Understand the fundamental principles governing the structure and functioning of the human organism.
- b. Integrate information from biomedical, clinical, and behavioral sciences in addressing clinical problems.
- c. Read and evaluate scientific literature and other appropriate sources of information in making oral health management decisions.
- d. Demonstrate the ability to use sound, scientifically derived laboratory and clinical evidence to guide clinical decision making.
- e. Apply critical-thinking and problem-solving skills in the comprehensive care of patients.
- f. Understand the role of lifelong learning and self-assessment in maintaining competency and attaining proficiency and expertise.

2. COMMUNITY INVOLVEMENT—Promote, improve, and maintain oral health in patient-centered and community settings.

The new dentist must be able to:

- a. Explain the role of the dental professional in a community setting.
- b. Recognize the effectiveness of community-based programs.
- c. Explain the role of professional dental organizations in promoting the health of the public.
- d. Explain the concept of a worldwide community as described in the world mission of the Seventh-day Adventist Church.

3. DIVERSITY—Function as a leader in a multicultural work environment and manage a diverse patient population.

The new dentist must be able to:

- a. Demonstrate the ability to serve patients and interact with colleagues and allied dental personnel in a multicultural work environment without discrimination.
- b. Demonstrate honesty and confidentiality in relationships with staff.
- c. Explain the principles of leadership and motivation.
- d. Demonstrate the skills to function successfully as a leader in an oral health care team.
- e. Communicate effectively with patients, peers, other professionals, and staff.

4. PROFESSIONAL PRACTICE—Understand the basic principles important in developing, managing, and evaluating a general dental practice.

The new dentist must be able to:

- a. Evaluate the advantages and disadvantages of different models of oral health care management and delivery.
- b. Explain legal, ethical, and risk management principles relating to the conduct of dental practice.
- c. Explain the basic principles of personnel management, office systems, and business decisions.
- d. Apply financial management skills to debt and business management.
- e. Apply knowledge of informational technology resources in contemporary dental practice.
- f. Understand the importance of spiritual principles as a basis for developing a philosophy of health care.

5. PERSONAL AND PROFESSIONAL BALANCE—Understand the importance of maintaining physical, emotional, financial, and spiritual health in one's personal life.

The new dentist must be able to:

- a. Demonstrate the ideal of service through the provision of compassionate, personalized health care.
- b. Understand the importance of maintaining a balance between personal and professional needs for successful life management.
- c. Explain the issues associated with chemical dependency, its signs in oneself and others, and the resources and treatments available.

- d. Explain the basic principles of personal financial planning and retirement planning.
  - e. Explain the concept of personal wholeness espoused by Loma Linda University and the Seventh-day Adventist Church.
6. PATIENT MANAGEMENT—Apply behavioral and communication skills in the provision of patient care.
- The new dentist must be able to:
- a. Recognize and manage significant cultural, psychological, physical, emotional, and behavioral factors affecting treatment and the dentist-patient relationship.
  - b. Establish rapport and maintain productive and confidential relationships with patients, using effective interpersonal skills.
  - c. Recognize common behavioral disorders and understand their management.
  - d. Use appropriate and effective techniques to manage anxiety, distress, discomfort, and pain.
  - e. Manage dental fear, pain, and anxiety with appropriate behavioral and pharmacologic techniques.
7. ETHICS—Apply ethical principles to professional practice and personal life.

## **Domain II: Assessment of the patient and the oral environment**

8. EXAMINATION OF PATIENTS—Conduct a comprehensive examination to evaluate the general and oral health of patients of all ages within the scope of general dentistry.
- The new dentist must be able to:
- a. Identify the chief complaint and take a history of the present illness.
  - b. Conduct a thorough medical history, social history, and dental history.
  - c. Perform an appropriate clinical and radiographic examination using diagnostic aids and tests, as needed.
  - d. Identify patient behaviors that may contribute to orofacial problems.
  - e. Identify biologic, pharmacologic, and social factors that may affect oral health.
  - f. Identify signs of abuse or neglect.
  - g. Establish and maintain accurate patient records.
9. DIAGNOSIS—Determine a diagnosis by interpreting and correlating findings from the examination.
- The new dentist must be able to:
- a. Identify each problem that may require treatment.
  - b. Establish a clinical or definitive diagnosis for each disorder identified.
  - c. Assess the impact of systemic diseases or conditions on oral health and/or delivery of dental care.
  - d. Recognize conditions that may require consultation with or referral to another health care provider and generate the appropriate request.

10. TREATMENT PLANNING—Develop a comprehensive treatment plan and treatment alternatives.  
The new dentist must be able to:
  - a. Identify treatment options for each condition diagnosed.
  - b. Identify systemic diseases or conditions that may affect oral health or require treatment modifications.
  - c. Identify patient expectations and goals for treatment.
  - d. Explain and discuss the diagnosis, treatment options, and probable outcomes for each option with the patient or guardian.
  - e. Develop an appropriately sequenced, integrated treatment plan.
  - f. Modify the treatment plan, when indicated, due to unexpected circumstances, noncompliant individuals, or for patients with special needs (such as frail or elderly; or medically, mentally, or functionally compromised individuals).
  - g. Present the final treatment plan to the patient, including time requirements, sequence of treatment, estimated fees, payment options, and other patient responsibilities in achieving treatment outcomes.
  - h. Secure a signed consent to treatment.
  
11. MANAGEMENT OF PAIN AND ANXIETY—Manage pain and anxiety with pharmacologic and nonpharmacologic methods.  
The new dentist must be able to:
  - a. Evaluate the patient's physical and psychological state and identify factors that may contribute to orofacial pain.
  - b. Manage patients with craniofacial pain and be able to differentiate pain of a nondental origin.
  
12. EMERGENCY TREATMENT—Manage dental emergencies and medical emergencies that may be encountered in dental practice.  
The new dentist must be able to:
  - a. Manage dental emergencies of infectious, inflammatory, and traumatic origin.
  - b. Provide basic life support measures for patients.
  - c. Develop and implement an effective office strategy for preventing and managing medical emergencies.
  
13. HEALTH PROMOTION AND MAINTENANCE—Provide appropriate preventive and/or treatment regimens for patients with various dental carious states, using appropriate medical and surgical treatments.  
The new dentist must be able to:
  - a. Use accepted prevention strategies, such as oral hygiene instruction, microbiologic evaluation, nutritional education, and pharmacologic intervention to help patients maintain and improve their oral and systemic health.
  - b. Properly isolate the tooth/teeth from salivary moisture and bacterial contamination.

- c. Differentiate between sound enamel, hypomineralized enamel, remineralized enamel, and carious enamel.
  - d. Develop and implement an appropriate treatment plan for enamel surfaces that can be managed by remineralization therapies.
  - e. Develop and implement an appropriate treatment plan for tooth surfaces with caries involving the enamel and/or dentin.
  - f. Remove or treat carious tooth structure and restore with appropriate materials.
  - g. Determine when a tooth has such severe carious involvement as to require extraction.
14. ASSESSMENT OF TREATMENT OUTCOMES—Analyze continuously the outcomes of patient treatment to improve such treatment.  
The new dentist must be able to:
- a. Perform periodic chart review and case presentations.
  - b. Review and assess patient-care outcomes.

### **Domain III: Restoration to optimal oral health, function, and esthetics**

15. TREATMENT OF PERIODONTAL DISEASE—Evaluate and manage the treatment of periodontal diseases.  
The new dentist must be able to:
- a. Design and provide an appropriate oral hygiene instruction plan for the patient.
  - b. Remove hard and soft deposits from the crown and root surfaces.
  - c. Evaluate the outcomes of the initial phase of periodontal treatment.
  - d. Manage the treatment of patients in the maintenance phase of therapy.
  - e. Recognize and manage the treatment of advanced periodontal disease.
  - f. Recognize the need for and appropriately use chemotherapeutic agents.
  - g. Manage the treatment of mucogingival periodontal problems.
  - h. Manage the treatment of hard- and soft-tissue problems in preparation for restorative procedures.
16. MANAGEMENT OF DISEASES OF PULPAL ORIGIN—Evaluate and manage diseases of pulpal origin and subsequent periradicular disease.  
The new dentist must be able to:
- a. Prevent and manage pulpal disorders through the use of indirect and direct pulp capping and pulpotomy procedures.
  - b. Assess case complexity of each endodontic patient.
  - c. Manage endodontic emergencies.
  - d. Manage nonsurgical endodontic therapy on permanent teeth.
  - e. Recognize and manage endodontic procedural accidents.
  - f. Manage pulpal and periradicular disorders of traumatic origin.
  - g. Manage endodontic surgical treatment.
  - h. Manage bleaching of endodontically treated teeth.
  - i. Evaluate outcome of endodontic treatment.

17. MANAGEMENT OF PATHOLOGIC CHANGES—Recognize and manage pathologic changes in the tissues of the oral cavity and of the head and neck area.

The new dentist must be able to:

- a. Recognize clinical and radiographic changes that may indicate disease.
- b. Recognize variations of normal and developmental anomalies.
- c. Identify conditions that may require treatment.
- d. Manage oral and maxillofacial pathologic conditions using pharmacologic and nonpharmacologic methods.

18. BASIC SURGICAL CARE—Provide basic surgical care.

The new dentist must be able to:

- a. Perform uncomplicated extractions of teeth.
- b. Manage surgical extraction, as well as common intraoperative and postoperative surgical complications.
- c. Manage pathological conditions, such as lesions requiring biopsy, localized odontogenic infections, and impacted third molars.
- d. Manage patients with dentofacial deformities or patients who can benefit from preprosthetic surgery.

19. MANAGEMENT OF OCCLUSAL INSTABILITY—Recognize and manage problems related to occlusal stability.

The new dentist must be able to:

- a. Recognize and manage occlusal discrepancies.

20. ASSESSMENT AND MANAGEMENT OF MAXILLARY AND MANDIBULAR SKELETODENTAL DISCREPANCIES—Assess and manage maxillary and mandibular skeletodental discrepancies—including space maintenance, as represented in the early, mixed, and permanent dentitions.

The new dentist must be able to:

- a. Perform mixed dentition analyses utilizing the Moyers and Nance methods.
- b. Perform a Steiner cephalometric analysis to evaluate for individual sagittal and coronal plane skeletodental discrepancies compared to normative data.
- c. Evaluate the noncephalometric skeletodental facial esthetics of the child, adolescent, or adult patient.
- d. Manage multidisciplinary treatment cases involving orthodontics.
- e. Recognize the effects of abnormal swallowing patterns, mouth breathing, bruxism, and other parafunctional habits on the skeletodental structures; and manage treatment.

21. RESTORATION AND REPLACEMENT OF TEETH—Manage the restoration of individual teeth and the replacement of missing teeth, for proper form, function, and esthetics.

The new dentist must be able to:

- a. Assess teeth for restorability.
- b. Assess esthetic and functional considerations.
- c. Manage preservation of space following loss of teeth or tooth structure.
- d. Select appropriate methods and restorative materials.
- e. Design fixed and removable prostheses.
- f. Implement appropriate treatment sequencing.
- g. Perform biomechanically sound preparations.
- h. Fabricate and place biomechanically sound provisional restorations.
- i. Make impressions for diagnostic and treatment casts.
- j. Obtain anatomic and occlusal relation records for articulation of casts.
- k. Prepare casts and dies for the construction of restorations and prostheses.
- l. Manage the laboratory fabrication of restorations and prostheses.
- m. Evaluate and place restorations that are clinically acceptable.
- n. Instruct patients in follow-up care of restorations and prostheses.
- o. Determine causes of postoperative problems after restoration and resolve such problems.

## DISTRIBUTION OF INSTRUCTION

### General Dentistry Program

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Autumn Quarter</b>						
ANAT 511	Human Anatomy for Dentists I	40	40	—	80	5.0
DNES 708	Introduction to the Dental Profession	10	—	—	10	1.0
PHSL 503	Biochemical Foundations of Physiology	44	—	—	44	4.0
PHSL 504	Physiological Systems of the Human Body	55	—	—	55	5.0
RELT 775	Spirituality and the Christian Health Professional	20	—	—	20	2.0
RESL 701	Restorative Dentistry I Lecture	20	—	—	20	2.0
RESL 701L	Restorative Dentistry I Laboratory	—	60	—	60	2.0
Totals		189	100	—	289	21.0
<b>Winter Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
ANAT 512	Human Anatomy for Dentists II	40	40	—	80	5.0
DNES 707	Personal Development	19	3	—	22	2.0
PHSL 505	Homeostatic Mechanisms of the Human Body	55	—	—	55	5.0
RELE 734	Christian Ethics for Dentists	20	—	—	20	2.0
RESL 702	Restorative Dentistry II	28	—	—	28	2.0
RESL 702L	Restorative Dentistry II Laboratory	—	66	—	66	2.0
Totals		162	109	—	271	18.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Spring Quarter</b>						
ANAT 513	Human Anatomy for Dentists III	40	40	—	80	5.0
DNES 705	Etiology and Management of Dental Caries	22	—	—	22	2.0
ODRP 501	Principles of Microbiology DN	44	—	—	44	4.0
PERI 705	Introduction to Periodontics	20	—	—	20	2.0
RESD 708	Restorative Dentistry III Lecture	20	—	—	20	2.0
RESD 708L	Restorative Dentistry III Laboratory	—	80	—	80	2.0
Totals		146	120	—	266	17.0
<b>Second Year, Summer Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNES 718	Communication Basics for the Dentist	10	—	—	10	1.0
ODRP 701	Radiology I: Clinical Procedures	11	16	—	27	1.5
ODRP 725	Patient Assessment and Data Management	28	17	—	45	3.0
ODRP 751	General and Systemic Pathology I	40	—	—	40	4.0
PERI 742	Essential Periodontal Therapy Laboratory	10	38	—	48	2.0
RESD 709	Restorative Dentistry IV Lecture	20	—	—	20	2.0
RESD 709L	Restorative Dentistry IV Laboratory	—	60	—	60	2.0
Totals		119	131	—	250	15.5
<b>Autumn Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
ANES 751	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	33	11	—	44	4.0
ODRP 726	Patient Diagnosis and Treatment Planning	12	13	—	25	1.5
ODRP 752	General and Systemic Pathology II	40	—	—	40	4.0
ODRP 755	Radiology II: Theory and Interpretation	20	—	—	20	2.0
RESD 764	Removable Prosthodontics	44	49	—	93	5.5
RESD 771	Single Casting Technique Lecture	20	—	—	20	2.0
RESD 771L	Single Casting Technique Laboratory	—	60	—	60	2.0
SDCL 711	Clinic Orientation I	10	—	—	10	1.0
Totals		179	133	—	312	22.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Winter Quarter</b>						
ODRP 761	Oral Pathology and Diagnosis	60	—	—	60	6.0
PERI 741	Essential Periodontal Therapy	20	—	—	20	2.0
RESD 772	Fixed Prosthodontics Lecture	20	—	—	20	2.0
RESD 772L	Fixed Prosthodontics Laboratory	—	60	—	60	2.0
RESD 875	Restorative Dentistry Clinic 1 of 10--Grade given at end of multiple-quarter course.	—	—	15	15	0.5
SDCL 712	Clinic Orientation II	20	—	—	20	2.0
Totals		120	60	15	195	14.5
<b>Spring Quarter</b>						
DNES 789	National Board Part I Review	40	—	—	40	2.0
ENDN 831	Endodontics I	10	—	—	10	1.0
ENDN 832	Endodontics II	—	30	—	30	1.0
ODRP 735	Dental Emergency Diagnosis and Treatment	10	—	—	10	1.0
ORDN 751	Principles of Orthodontics I	10	—	—	10	1.0
PEDN 753	Pediatric Dentistry I Lecture	22	—	—	22	2.0
PEDN 753L	Pediatric Dentistry I Laboratory	—	44	—	44	1.0
PHRM 501	Pharmacology and Therapeutics SD	44	—	—	44	4.0
RESD 875	Restorative Dentistry Clinic 2 of 10--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
SDCL 713	Clinic Orientation III	—	—	30	30	1.0
Totals		136	74	60	270	15.0
<b>Third Year, Summer Quarter</b>						
ANES 801	Dental Anesthesia: Advanced Topics	20	—	—	20	2.0
DNES 804	Applied Statistics	22	—	—	22	2.0
DNES 806	Research Design	16	24	—	40	2.0
ODRP 825	Oral Diagnosis, Radiology, and Pathology Clinic 1 of 4--Grade given at end of multiple-quarter course.	—	—	20	20	1.0
OMFS 805	Oral and Maxillofacial Surgery I	10	—	—	10	1.0
PEDN 825	Pediatric Dentistry Clinic 1 of 4--Grade given at end of multiple-quarter course.	—	—	15	15	0.5
RESD 773	Fixed Prosthodontics II Lecture	11	—	—	11	2.0
RESD 773L	Fixed Prosthodontics II Laboratory	—	66	—	66	2.0
RESD 811	Dental Materials II	10	—	—	10	1.0
RESD 875	Restorative Dentistry Clinic 3 of 10--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
SDCL 801	Clinical Patient Care	10	—	44	54	2.0
Totals		99	90	139	328	17.5

Autumn Quarter			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
DNES 806L	Research Design Laboratory	Multiple-quarter course. Final grade is given at the end of spring quarter.	—	33	—	33	1.0
ENDN 834	Endodontics III		10	—	—	10	1.0
ODRP 807	Oral Medicine I: TMJ/Orofacial Pain I		10	—	—	10	1.0
ODRP 821	Special Care Dentistry		10	—	—	10	1.0
ODRP 825	Oral Diagnosis, Radiology, and Pathology Clinic	2 of 4--Grade given at end of multiple-quarter course.	—	—	15	15	0.5
OMFS 811	Oral and Maxillofacial Surgery II	1 of 2--Grade give at end of multiple-quarter course.	11	—	—	11	1.0
OMFS 825	Oral and Maxillofacial Surgery Clinic I		—	—	30	30	1.0
ORDN 801	Minor Tooth Movement		20	—	—	20	2.0
PEDN 825	Pediatric Dentistry Clinic	2 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PERI 765	Special Topics in Periodontal Therapy		22	—	—	22	2.0
RELR 717	Diversity and the Christian Health Professional		22	—	—	22	2.0
RESD 854	Implant Dentistry		22	—	—	22	2.0
RESD 854L	Implant Dentistry Laboratory		—	30	—	30	1.0
RESD 875	Restorative Dentistry Clinic	4 of 10--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
SDCL 802	Clinical Patient Care		—	—	66	66	2.0
Totals			127	63	201	391	20.5

Winter Quarter		Clock Hours				Total Units	
		Lec/Sem	Lab	Clin	Total		
ODRP 808	Oral Medicine II: Medically Compromised Patient	20	—	—	20	2.0	
ODRP 825	Oral Diagnosis, Radiology, and Pathology Clinic	3 of 4--Grade given at end of multiple-quarter course.	—	—	15	15	0.5
OMFS 811	Oral and Maxillofacial Surgery II	2 of 2--Grade given at end of multiple-quarter course.	11	—	—	11	1.0
ORDN 811	Principles of Orthodontics II		11	—	—	11	1.0
PEDN 821	Pediatric Dentistry II		10	—	—	10	1.0
PEDN 825	Pediatric Dentistry Clinic	3 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PERI 805	Periodontal Surgical Therapy		10	—	—	10	1.0
REL_ 7__	Professional-level Religion Elective		20	—	—	20	2.0
RESD 822	Operative Dentistry II Lecture	Multiple quarter course. Final grade given at the end of spring quarter.	22	—	—	22	2.0
RESD 822L	Operative Dentistry II Laboratory	Multiple quarter course. Final grade given at the end of spring quarter.	—	60	—	60	2.0
RESD 875	Restorative Dentistry Clinic	5 of 10--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
SDCL 803	Clinical Patient Care		—	—	66	66	2.0
Totals			104	60	171	335	17.5

Spring Quarter		Clock Hours				Total Units	
		Lec/Sem	Lab	Clin	Total		
DNES 794	Public Health Dentistry	20	—	—	20	2.0	
ODRP 811	Oral Medicine III: TMJ/Orofacial Pain II	10	—	—	10	1.0	
ODRP 825	Oral Diagnosis, Radiology, and Pathology Clinic	4 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PEDN 825	Pediatric Dentistry Clinic	4 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PHRM 503	Clinical Pharmacology in Dentistry	20	—	—	20	2.0	
RELR 749	Personal and Family Wholeness	20	—	—	20	2.0	
RESD 801	Fixed Prosthodontics and Occlusion	10	—	—	10	1.0	
RESD 875	Restorative Dentistry Clinic	6 of 10--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
SDCL 804	Clinical Patient Care		—	—	66	66	2.0
Totals		80	—	186	266	14.0	

Fourth Year, Summer Quarter			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
ENDN 835	Endodontics IV		—	40	—	40	1.0
ODRP 826	Oral Medicine IV: Clinical Oral Pathology and Oncology		20	—	—	20	2.0
ODRP 875	Oral Diagnosis, Radiology, and Pathology Clinic	1 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PEDN 875	Pediatric Dentistry Clinic	1 of 4--Grade given at end of multiple-quarter course.	—	—	10	10	0.5
PERI 875	Periodontics Clinic	1 of 4--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
RESD 875	Restorative Dentistry Clinic	7 of 10--Grade given at end of multiple-quarter course.	—	—	210	210	7.0
SDCL 805	Clinical Patient Care		—	—	66	66	2.0
Totals			20	40	376	436	15.5

Autumn Quarter			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
DNES 807	Practice Management I		22	—	—	22	2.0
DNES 889	National Board Part II Review		50	—	—	50	2.0
ODRP 875	Oral Diagnosis, Radiology, and Pathology Clinic	2 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PEDN 875	Pediatric Dentistry Clinic	2 of 4--Grade given at end of multiple-quarter course.	—	—	10	10	0.5
PERI 875	Periodontics Clinic	2 of 4--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
RESD 861	Senior Topics in Removable Prosthodontics		20	—	—	20	2.0
RESD 875	Restorative Dentistry Clinic	8 of 10--Grade given at end of multiple-quarter course.	—	—	210	210	7.0
SDCL 806	Clinical Patient Care		—	—	66	66	2.0
Totals			92	—	376	468	18.5

			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
<b>Winter Quarter</b>							
DNES 809	Practice Management II		22	—	—	22	2.0
DNES 851	The Dentist and the Law		22	—	—	22	2.0
ODRP 875	Oral Diagnosis, Radiology, and Pathology Clinic	3 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
PEDN 875	Pediatric Dentistry Clinic	3 of 4--Grade given at end of multiple-quarter course.	—	—	20	20	1.0
PERI 875	Periodontics Clinic	3 of 4--Grade given at end of multiple-quarter course.	—	—	60	60	2.0
RELR 715	Christian Dentist in Community		20	—	—	20	2.0
RESD 875	Restorative Dentistry Clinic	9 of 10--Grade given at end of multiple-quarter course.	—	—	210	210	7.0
SDCL 807	Clinical Patient Care		—	—	66	66	2.0
Totals			64	—	386	450	19.0
			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
<b>Spring Quarter</b>							
ENDN 875	Endodontics Clinic		—	—	30	30	1.0
ODRP 875	Oral Diagnosis, Radiology, and Pathology Clinic	4 of 4--Grade given at end of multiple-quarter course.	—	—	30	30	1.0
OMFS 875	Oral and Maxillofacial Surgery Clinic II		—	—	30	30	1.0
ORDN 875	Orthodontics Clinic		—	—	30	30	1.0
PEDN 875	Pediatric Dentistry Clinic	4 of 4--Grade given at end of multiple-quarter course.	—	—	20	20	1.0
PERI 875	Periodontics Clinic	4 of 4--Grade given at end of multiple-quarter course.	—	—	45	45	1.5
RESD 844	Restorative Study Club Seminar		8	—	—	8	0.5
RESD 875	Restorative Dentistry Clinic	10 of 10--Grade given at end of multiple-quarter course.	—	—	210	210	7.0
SDCL 808	Clinical Patient Care		—	—	66	66	2.0
Totals			8	—	461	469	16.0
<b>Overall Totals</b>			<b>1,645</b>	<b>980</b>	<b>2,371</b>	<b>4,996</b>	<b>261.5</b>

**DENTAL ANESTHESIOLOGY**

LARRY D. TRAPP, Director, Advanced Education Program

JOHN W. LEYMAN, Director, Special Care Dentistry Clinic

**FACULTY**

Barry K. Krall

John W. Leyman

Larry D. Trapp

The Dental Anesthesiology Department is staffed by dentists with advanced training in anesthesiology. Staff members provide didactic and clinical instruction in all areas of pain and anxiety control in dentistry. Undergraduate, predoctoral, and postdoctoral students learn techniques ranging from local anesthesia and parenteral sedation to general anesthesia. Related topics taught include physical diagnosis, clinical pharmacology, management of medically compromised patients, and management of medical emergencies. Observation of and participation in the anesthetic management of patients in the School of Dentistry Outpatient Surgery Center provide a unique opportunity for students to learn advanced skills in general anesthesia techniques.

Courses		Units
ANES 314	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	4.0
ANES 751	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	4.0
ANES 801	Dental Anesthesia: Advanced Topics	2.0

**DENTAL EDUCATIONAL SERVICES**

RONALD J. DAILEY, Chair

**FACULTY**

Ronald J. Dailey

Lincoln P. Edwards

Rami R. Jekki

Neal A. Johnson

Fred C. Kasischke

Steve Kurti

George M. Lessard

Edna M. Loveless

William A. Loveless

H. Maynard Lowry

Kathleen L. Moore

W. Patrick Naylor

Udochukwu E. Oyoyo

Thomas C. Rogers

Ronald J. Secor

D. Graham Stacey

James Trott

Wu Zhang

The Division of Dental Educational Services provides instruction for a variety of nonclinical subject areas, including behavioral science, practice management, preventive and community dentistry, and service-learning. The interactions of patients, staff, and dentists are examined in light of varied personality characteristics; the art and science of establishing and operating a successful practice are examined; and preventive dentistry in the office and community is studied as the underlying philosophy of dental practice. Students are required to participate in providing dental services and dental health education in dentally underserved settings outside the dental school clinic, providing the experience of involvement in the real world "to make man whole."

<b>Courses</b>		<b>Units</b>
DNES 305	Etiology and Management of Dental Caries	2.0
DNES 504	Spanish for the Dental Professional	2.0
DNES 700	Orientation to Tooth Morphology	2.0
DNES 705	Etiology and Management of Dental Caries	2.0
DNES 707	Personal Development	2.0
DNES 708	Introduction to the Dental Profession	1.0
DNES 718	Communication Basics for the Dentist	1.0
DNES 789	National Board Part I Review	2.0
DNES 794	Public Health Dentistry	2.0
DNES 804	Applied Statistics	2.0
DNES 806	Research Design	2.0
DNES 806L	Research Design Laboratory (Grade given at end of multiple-quarter course.)	1.0
DNES 807	Practice Management I	2.0
DNES 809	Practice Management II	2.0
DNES 817	Practice Management I for IDP	1.0
DNES 818	Practice Management II for IDP	1.0
DNES 851	The Dentist and the Law	2.0
DNES 889	National Board Part II Review	2.0

## **ENDODONTICS**

ROBERT A. HANDYSIDES, Chair

MAHMOUD TORABINEJAD, Director, Advanced Education Program

### **FACULTY**

Leif K. Bakland

Robert A. Handysides

David E. Jaramillo

Steven G. Morrow

Bonnie J. Retamozo

Mahmoud Torabinejad

Endodontics is the discipline of dentistry concerned with the morphology, physiology, and pathology of the human dental pulp and apical tissues. Its study and practice encompass the basic clinical science, including biology of the normal pulp; the etiology, diagnosis, prevention, and treatment of diseases and injuries of the pulp; and associated apical conditions. The department faculty have developed preclinical

lectures, laboratory exercises, and clinical training that cover the scope of endodontics. These experiences are coordinated and incorporated in a manner that provides patients with optimum oral health care in a setting that promotes the mission of the School of Dentistry.

Courses		Units
ENDN 831	Endodontics I	1.0
ENDN 832	Endodontics II (two-quarter course; 2 units required. Grade given at end of multiple-quarter course.)	1.0
ENDN 834	Endodontics III	1.0
ENDN 835	Endodontics IV	1.0
ENDN 875	Endodontics Clinic	1.0

## ORAL DIAGNOSIS, RADIOLOGY, AND PATHOLOGY

HEIDI L. CHRISTENSEN, Chair

### FACULTY

Heidi L. Christensen

Heidi B. Kohltfarber

Audrey N. Mojica

Susan C. Richards

Susan Roche

Erin E. A. Stephens

The Department of Oral Diagnosis, Radiology, and Pathology covers a variety of disciplines. The overall focus of the department is to train dental students to consider all related factors when arriving at a diagnosis and formulating a treatment plan that will best meet the needs of each patient. Courses are offered that cover aspects of general and systemic pathology, oral medicine, geriatric and special needs dentistry, emergency diagnosis and treatment, oral pathology, radiology, diagnosis, and treatment planning. The department's aim is to prepare dental students to excel in compassionate and knowledgeable service to patients that is based on a comprehensive gathering and interpretation of pertinent data.

Courses		Units
IDPO 534	Oral Medicine/Orofacial Pain and TMD	2.0
IDPO 535	Oral Pathology and Diagnosis	3.0
IDPO 725	Patient Assessment and Data Management for IDP	2.0
IDPO 726	Patient Diagnosis and Treatment Planning for IDP	2.0
ODRP 311	General and Oral Pathology DH	5.0
ODRP 501	Principles of Microbiology	4.0
ODRP 701	Radiology I: Clinical Procedures	1.5
ODRP 725	Patient Assessment and Data Management	3.0
ODRP 726	Patient Diagnosis and Treatment Planning	1.5
ODRP 735	Dental Emergency Diagnosis and Treatment	1.0
ODRP 751	General and Systemic Pathology I	4.0
ODRP 752	General and Systemic Pathology II	4.0

ODRP 755	Radiology II: Theory and Interpretation	2.0
ODRP 761	Oral Pathology and Diagnosis	6.0
ODRP 807	Oral Medicine I: TMJ/Orofacial Pain I	1.0
ODRP 808	Oral Medicine II: Medically Compromised Patient	2.0
ODRP 811	Oral Medicine III: TMJ/Orofacial Pain II	1.0
ODRP 821	Special Care Dentistry	1.0
ODRP 825	Oral Diagnosis, Radiology and Pathology Clinic (four quarters/3 units required)	0.5-3.0
ODRP 826	Oral Medicine IV: Clinical Oral Pathology and Oncology	2.0
ODRP 875	Oral Diagnosis, Radiology, and Pathology Clinic (four quarters/4 units required)	1.0-4.0

## ORAL AND MAXILLOFACIAL SURGERY

ALAN S. HERFORD, Chair; Director, Advanced Education Program

WAYNE K. TANAKA, Director, Predoctoral Program

### FACULTY

Jeffrey S. Dean

Alan S. Herford

Mei Lu

Carlos M. Moretta

Wayne K. Tanaka

The predoctoral courses in the Department of Oral and Maxillofacial Surgery include didactic and clinical instruction to prepare the student for dealing with patients seen in the general practice of dentistry. Subject matter considered includes patient evaluation prior to surgery, surgical instruments, complications and ways of preventing them, infections of the region, antibiotics, analgesic drugs to alleviate pain resulting from surgical procedures, prescription writing, and preparation of the mouth for prostheses. Oral and maxillofacial surgery procedures not done by the general dentist are included in the lectures because knowledge regarding these procedures is necessary to provide a basis for proper advice to patients with conditions that are treated by the specialist. Clinical experience ranges from a basic minimum of routine cases to more difficult, advanced cases—according to the student's demonstrated ability, perseverance, judgment, and interest in oral and maxillofacial surgery.

Courses		Units
IDPO 826	Oral and Maxillofacial Surgery I for IDP	2.0
IDPO 827	Oral and Maxillofacial Surgery II for IDP	2.0
OMFS 805	Oral and Maxillofacial Surgery I	1.0
OMFS 811	Oral and Maxillofacial Surgery II (Course continues 2 quarters. Grade given at end of multiple-quarter course. 2 units required.)	1.0-2.0
OMFS 819	Intravenous Sedation	1.5
OMFS 825	Oral and Maxillofacial Surgery Clinic I	1.0
OMFS 875	Oral and Maxillofacial Surgery Clinic II	1.0

## ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

JOSEPH M. CARUSO, Chair

V. LEROY LEGGITT, Director, Advanced Education Program

### FACULTY

Joseph M. Caruso

James R. Farrage

Gabriela E. Garcia

V. Leroy Leggitt

Roland D. W. Neufeld

Kitchai Rungcharassaeng

R. David Rynearson

The predoctoral courses in the Department of Orthodontics, as outlined by the American Dental Association, apply the knowledge derived from the basic sciences, research, and clinical treatment to the science of orthodontics so that the dental graduate will have the background necessary to recognize those conditions s/he is capable of managing. Clinical experience ranges from minor tooth movement and early treatment cases to more difficult, advanced cases—according to the student's demonstrated ability, perseverance, judgment, and interest in orthodontics.

The graduate will be able to:

1. Anticipate and detect malocclusions.
2. Take steps to prevent or intercept malocclusion where possible.
3. Use this knowledge as an adjunct to procedures in all other phases of dental practice.
4. Provide a basis for understanding the possibilities of orthodontic treatment.
5. Treat limited orthodontic problems that fall within the general dentist's sphere of knowledge and training.
6. Know the bases on which case referrals are made and how to handle a referral correctly.

Courses		Units
ORDN 751	Principles of Orthodontics I	1.0
ORDN 801	Minor Tooth Movement	2.0
ORDN 811	Principles of Orthodontics II	1.0
ORDN 875	Orthodontics Clinic	1.0

## PEDIATRIC DENTISTRY

BONNIE A. NELSON, Chair

JUNG-WEI CHEN, Director, Advanced Education Program

### FACULTY

Jung-Wei Chen

Elaine R. Faria

Bonnie A. Nelson

Wesley K. Okumura

Samah I. Omar

The Department of Pediatric Dentistry is committed to teaching excellent clinical techniques in children's dentistry, and instilling within the dental student the importance of providing an emotionally healthy environment for the child patient while "at the dentist." The faculty has developed didactic, laboratory, and clinical learning environments in pediatric dentistry. This broad experience is designed to prepare the student for the general practice of dentistry for children.

Courses		Units
IDPP 755	Pediatric Dentistry Clinic for IDP	1.0
IDPP 756	Pediatric Dentistry I for IDP	2.0
IDPP 756L	Pediatric Dentistry I Laboratory for IDP	1.0
PEDN 753	Pediatric Dentistry I Lecture	2.0
PEDN 753L	Pediatric Dentistry I Laboratory	1.0
PEDN 821	Pediatric Dentistry II	1.0
PEDN 825	Pediatric Dentistry Clinic I (four quarters/3.5 units required. Grade given at end of multiple-quarter course.)	0.5-3.5
PEDN 875	Pediatric Dentistry Clinic II (four quarters/3 units required. Grade given at end of multiple-quarter course.)	0.5-3.0

## PERIODONTICS

NIKOLA ANGELOV, Director, Predoctoral Program

JEFFREY M. HENKIN, Director, Advanced Education Program

### FACULTY

Nikola Angelov

R. Leslie Arnett, Jr.

Jeffrey M. Henkin

Oliver C. Hoffmann

Yoon J. Kim

S. Scott Lee

Leticia C. Lenoir

Adrian Mobilia

Manoochehr Parsi

Craig M. Ririe

Erik F. Sahl

Dennis H. Smith

Chun Xiao Sun

Barbara H. Valadez

Klaus D. Wolfram

The Department of Periodontics provides education and training for predoctoral, dental hygiene, and postgraduate students in the art and science of periodontics. Periodontics encompasses the study of the supporting structures of the teeth; as well as the etiology, pathogenesis, diagnosis, and treatment of diseases that affect the supporting structures of the teeth. The study of periodontics helps to form basic concepts of health and disease. These concepts are applied in the treatment of periodontal diseases and in the maintenance of dental health over a patient's lifetime, providing comprehensive dental therapy for the individual patient. In this way, the Department of Periodontics contributes directly to the School of Dentistry's academic and service mission "to make man whole."

Courses		Units
IDPP 754	Clinical Periodontics	2.0
IDPP 759	Special Topics in Periodontal Therapy	2.0
PERI 705	Introduction to Periodontics	2.0
PERI 741	Essential Periodontal Therapy, Lecture	2.0
PERI 742	Essential Periodontal Therapy, Laboratory (two quarters; 2 units required. Grade given at end of multiple-quarter course.)	2.0
PERI 765	Special Topics in Periodontal Therapy	2.0
PERI 805	Periodontal Surgical Therapy	1.0
PERI 875	Periodontics Clinic (four quarters/7.5 units required. Grade given at end of multiple-quarter course.)	1.0-7.5

**RESTORATIVE DENTISTRY**

DOUGLASS B. ROBERTS, Chair

MATHEW T. KATTADIYIL, Director, Advanced Education Program in Prosthodontics

JAIME L. LOZADA, Director, Advanced Education Program in Implant Dentistry

**FACULTY**

Daniel R. Armstrong

Nadim Z. Baba

Frederick A. Berry

David C. Brodeur

Perry D. Burtch

Nathan A. Dinsbach

Mark E. Estey

Michael J. Fitzpatrick

Madelyn L. Fletcher-Stark

Ronald E. Forde

Belen G. Geach

Gary J. Golden

Charles J. Goodacre

B. Dan Hall

William H. Heisler

Balsam F. Jekki

Rami R. Jekki

Zina F. Johnston

Joseph Y. K. Kan

Mathew T. Kattadiyil

Amir H. Khatami

S. Alejandro Kleinman

Edward S. C. Ko

Doris R. Kore

Kevin Kuniyoshi

Sean Lee

Monica C. Lehnhof

Andrea R. Lewis

Yiming Li

Jaime L. Lozada

Michael R. Meharry

Gregory D. Mitchell

W. Patrick Naylor

Doyle Nick

Brian B. Novy

Andrew T. Ordelleide

Paul L. Richardson

Holli C. Riter

Douglass B. Roberts

Elizabeth B. Robbins

Sofia I. Rodriguez-Lopez  
 Clyde L. Roggenkamp  
 Ronald L. Sorrels  
 Jung Hwa Suh-Kim  
 Raghad Sulaiman  
 Daniel E. Tan  
 L. Parnell Taylor  
 Marcelo G. Toledo  
 F. Jose Torres  
 Julian Tsai  
 Robert B. Walter  
 Robert D. Walter  
 John B. Won  
 Myron Winer  
 Ronald L. Young  
 Periza Zaninovic

The Department of Restorative Dentistry encompasses the specific disciplines of operative dentistry, fixed prosthodontics, and removable prosthodontics. It provides a home base for biomaterials research and graduate programs in implant dentistry and prosthodontics. It is the aim of the department to provide each student with a thorough understanding of both technical and clinical skills, enabling the comprehensive treatment of diseased or lost tooth structure and the replacement of missing teeth. Other goals are to instill in each student an interest in exploring new frontiers in dentistry and in recognizing the need for a continued quest for knowledge.

<b>Courses</b>		<b>Units</b>
IDPG 700	Review of General Dentistry	12.0
IDPR 701	Operative Dentistry I with laboratory	2.0
IDPR 702	Operative Dentistry II with laboratory	2.0
IDPR 704	Introduction to Occlusion	2.0
IDPR 761	Removable Prosthodontics I with laboratory	2.0
IDPR 762	Removable Prosthodontics II with laboratory	2.0
IDPR 763	Removable Prosthodontics III with laboratory	2.0
IDPR 771	Fixed Prosthodontics I with laboratory	2.0
IDPR 772	Fixed Prosthodontics II with laboratory	2.0
IDPR 801	Fixed Prosthodontics III with laboratory	2.0
IDPR 803	Operative Dentistry III with laboratory	2.0
IDPR 854	Implant Dentistry with laboratory	3.0
RESD 701	Restorative Dentistry I Lecture	2.0
RESD 701L	Restorative Dentistry I Laboratory	2.0
RESD 702	Restorative Dentistry II Lecture	2.0
RESD 702L	Restorative Dentistry II Laboratory	2.0
RESD 708	Restorative Dentistry III Lecture	2.0
RESD 708L	Restorative Dentistry III Laboratory	2.0
RESD 709	Restorative Dentistry IV Lecture	2.0

RESD 709L	Restorative Dentistry IV Laboratory	2.0
RESD 764	Removable Prosthodontics (five quarters/5.5 units required)	5.5
RESD 771	Single Casting Technique Lecture	2.0
RESD 771L	Single Casting Technique Laboratory	2.0
RESD 772	Fixed Prosthodontics Lecture	2.0
RESD 772L	Fixed Prosthodontics Laboratory	2.0
RESD 773	Fixed Prosthodontics II Lecture	1.0, 2.0
RESD 773L	Fixed Prosthodontics II Laboratory	1.0, 2.0
RESD 801	Fixed Prosthodontics and Occlusion	1.0
RESD 811	Dental Materials II	1.0
RESD 822	Operative Dentistry II Lecture (2 quarter course; 2 units required. Grade given at the end of multiple-quarter course.)	2.0
RESD 822L	Operative Dentistry II Laboratory (2 quarter course; 2 units required. Grade given at the end of multiple-quarter course.)	2.0
RESD 844	Restorative Study Club Seminar (four quarters; .5 units required. Grade given at the end of multiple-quarter course.)	0.5
RESD 854	Implant Dentistry	2.0
RESD 854L	Implant Dentistry Laboratory	1.0
RESD 861	Senior Topics in Removable Prosthodontics	2.0
RESD 875	Restorative Clinic (ten quarters/37.5 units required. Grade given at end of multiple-quarter course.)	0.5-7.0
SDCJ 744	Clinical Training in Advanced Restorative Dentistry	8.0
SDCJ 799	Directed Study	4.0-12.0
SDCL 711	Clinic Orientation I	1.0
SDCL 712	Clinic Orientation II	2.0
SDCL 713	Clinic Orientation III	1.0
SDCL 801	Clinical Patient Care	2.0
SDCL 802	Clinical Patient Care	2.0
SDCL 803	Clinical Patient Care	2.0
SDCL 804	Clinical Patient Care	2.0
SDCL 805	Clinical Patient Care	2.0
SDCL 806	Clinical Patient Care	2.0
SDCL 807	Clinical Patient Care	2.0
SDCL 808	Clinical Patient Care	2.0

## Dental Hygiene—SD

A.S., B.S.

KRISTI J. WILKINS, Chair

MICHELLE T. HURLBUTT, Program Director, Degree Completion

JANEEN C. DUFF, Site Coordinator, A.S. Degree Program

### FACULTY

Darlene A. Armstrong

Kellie R. Bergendahl

D. Darlene Cheek

Janeen C. Duff

Debra K. Friesen

Shelley Hayton

Marilynn G. Heyde

Michelle T. Hurlbutt

Shirley A. Lee

Patricia M. Lennan

Joni A. Stephens

Kristi J. Wilkins

Colleen A. Whitt

Established in 1959, the Department of Dental Hygiene, the Bachelor of Science degree undergraduate curriculum of the School of Dentistry, is largely focused on preventive oral health services and continuing care. Dental science courses, preclinical lectures and seminars, laboratory exercises, and clinical assignments have been developed to provide training in the variety of procedures delegated to the dental hygienist within the dental practice setting. These experiences are sequenced in an organized manner that provides for continual growth and competency in performance of all traditional and expanded function procedures.

The purpose of the program is to develop professionals prepared for the current practice of dental hygiene, as well as graduates who are additionally prepared to deal with future changes in dentistry. Courses that encourage critical thinking and problem-solving techniques and that enhance the ability to evaluate the latest in research are important adjuncts to clinical training. Upon completion of this curriculum, graduates will be prepared to enter a variety of career options available to a dental hygienist.

The online B.S. degree in dental hygiene completion is designed for licensed dental hygienists who graduated from an Associate in Science degree program, or its equivalent, and wish to complete the baccalaureate (B.S.) degree in dental hygiene. This curriculum is the equivalent of one full academic year. In addition to the degree completion courses in either education or public health, the student will need to complete any remaining general education requirements needed to fulfill a baccalaureate degree.

The B.S. degree in dental hygiene completion is designed to be completed primarily online, with a requisite teaching or public health component that may be accomplished in the geographical area of the student. This program offers the challenge and quality of a traditional classroom, yet provides the flexibility to fit education into the life of the busy dental professional. Students can study at their own

convenience, learn in small groups with expert faculty, and meet career goals at their own speed. Students who tend to be the most successful in this type of program are self-directed, computer literate, and self-motivated in their learning and study habits.

Two areas of focus are included in this curriculum. The first is teaching and prepares the student to instruct in a dental hygiene program. The second is a public health focus, which will either allow graduates to work in a community/dental public health program or enable them to teach in a dental hygiene program.

The Associate in Science (A.S.) degree in dental hygiene, established in 2010, is designed to be completed at the School of Dentistry off-campus location in Palm Desert, California. The goal of the A.S. degree is to offer a unique educational opportunity for students in the Coachella Valley. Applicants who live in the Coachella Valley and have completed prerequisite course work at the College of the Desert will be given priority review in the School of Dentistry admissions process.

The purpose of the A.S. degree, modeled after the B.S. degree in dental hygiene established in 1959, is to increase access to care in an area underserved by preventive oral health care providers. Upon completion of this curriculum, graduates will be prepared to enter clinical practice under the general and direct supervision of a licensed dentist. The A.S. degree graduate will be encouraged to pursue the B.S. degree online completion curriculum, preparing them for a variety of career options, including teaching and public health opportunities.

Loma Linda University emphasizes Christian values and beliefs and the concept of whole person care. Opportunities for spiritual growth and fellowship among faculty and students are interwoven into daily academic pursuits, clinical practice, and social interactions.

The A.S. degree curriculum is pending approval by Loma Linda University Board of Trustees, Western Association of Schools and Colleges, and the Commission on Dental Accreditation of the American Dental Association.

## **PHILOSOPHY**

A profession in the health arts and sciences calls increasingly for persons of intelligence, integrity, responsibility, and depth of human understanding. Therefore, the program of instruction is planned on a strong liberal arts foundation. The student is encouraged to take electives that contribute to breadth of knowledge and quality of values. The choice of electives in early college work is important for many reasons.

The School of Dentistry is interested in applicants with the potential to become hygienists who are well-read and caring persons prepared to communicate effectively in professional and community relationships. They should be able to draw on knowledge of the structure and function of the human body in health and disease, applying resources based on Christian ideals and values to aid in the solution of personal problems. They should also be able to develop the attitudes and skills that will most effectively serve society.

## **GOAL**

The goal of the Dental Hygiene Program is to educate competent, concerned, and active members of the dental hygiene profession who possess the ability to effectively perform the expanding scope of practice of the dental hygienist.

Loma Linda University emphasizes Christian values and beliefs and the concept of whole person care. Opportunities for spiritual growth and fellowship among faculty and students are interwoven into daily academic pursuits, clinical practice, and social interactions.

The advancement of dental hygiene depends on an ever-growing body of knowledge. Therefore, this program also places great importance on providing an atmosphere in which students can develop the skills necessary to objectively assess new theories and trends in dentistry in light of scientific knowledge and principles. By combining Christian values with an appreciation for research and the scientific method, graduates will continually apply evidence-based principles to patient care and exhibit God's love in the quality of service they render.

## ADMISSION

Information and procedures for applying to the Dental Hygiene Program can be found under the Application and Admissions section of the general information for the School of Dentistry in Section III.

## CURRICULUM

Dental hygiene, a profession dating back to 1913, is largely concerned with preventive health services. The hygienist works in association with the dentist in private practice offices, industrial organizations, schools, hospitals, state or federal public health services, and the armed forces.

The B.S. degree is organized as a four-year college curriculum. The freshman and sophomore years of largely prescribed, preprofessional study may be taken at any regionally accredited college. The professional curriculum begins with the junior year in the School of Dentistry. The curriculum is approved by the Commission on Dental Accreditation of the American Dental Association. The first class at this University graduated in 1961.

After completion of the required prerequisite course work, the A.S. degree dental hygiene student enters the seven-quarter program leading to the Associate in Science degree in dental hygiene. The student will meet eligibility in the sixth quarter, after successful completion of course work, for the written Dental Hygiene National Board Examination. After successful completion of the seventh quarter, the graduate will be eligible to sit for a state and/or regional clinical board examination.

## DENTAL HYGIENE – A.S.

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Sophomore Year, Summer Quarter</b>						
ANAT 301	Head and Neck Anatomy, DH	40	—	—	40	4.0
DNHY 216	Oral Health and Preventive Dentistry	22	—	—	22	2.0
DNHY 305	Oral Anatomy Lecture	22	—	—	22	2.0
DNHY 305L	Oral Anatomy Laboratory	—	44	—	44	1.0
DNHY 321	Preclinical Dental Hygiene I Lecture	22	—	—	22	2.0
DNHY 321L	Preclinical Dental Hygiene I Laboratory	—	88	—	88	2.0
Totals		106	132	—	238	13.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Autumn Quarter</b>						
ANAT 303	General and Oral Histology and Embryology	30	—	—	30	3.0
ANES 314	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	41	14	—	55	4.0
DNHY 309	Radiology I	33	28	—	61	3.0
DNHY 322	Preclinical Dental Hygiene II Lecture	20	—	—	20	2.0
DNHY 322L	Preclinical Dental Hygiene II Laboratory	—	44	—	44	2.0
DNHY 375	Dental Hygiene Clinic	—	—	30	30	1.0
RELT 423	Loma Linda Perspectives	20	—	—	20	2.0
Totals		144	86	30	260	17.0
<b>Winter Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNHY 310	Radiology II	22	—	—	22	2.0
DNHY 323	Preclinical Dental Hygiene III	22	—	—	22	2.0
DNHY 323L	Preclinical Laboratory	—	40	—	40	1.0
DNHY 376	Dental Hygiene Clinic	—	—	120	120	4.0
DNHY 380	Medically Compromised Patients	20	—	—	20	2.0
DNHY 381	Pharmacology for the Dental Hygienist I	44	—	—	44	2.0
ODRP 311	General and Oral Pathology DH	50	—	—	50	5.0
Totals		158	40	120	318	18.0
<b>Spring Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNHY 217	Community Oral Health Theory	22	—	—	22	2.0
DNHY 303	Dental Materials and Techniques	20	—	—	20	2.0
DNHY 376	Dental Hygiene Clinic	—	—	120	120	4.0
DNHY 380	Medically Compromised Patients	20	—	—	20	2.0
DNHY 382	Pharmacology for the Dental Hygienist II	11	—	—	11	1.0
DNHY 405	Introduction to Periodontics	20	—	—	20	2.0
DNHY 450	Junior Clinical Seminar	10	—	—	10	1.0
RELE 457	Christian Ethics and Health Care	20	—	—	20	2.0
Totals		123	—	120	243	16.0
<b>Junior Year, Summer Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNHY 290	Research Design and Biostatistics	33	—	—	33	3.0
DNHY 408	Professional Ethics	22	—	—	22	2.0
DNHY 410	Cultural Competency in Health Care	22	—	—	22	2.0
DNHY 451	Clinical Seminar I	10	—	—	10	1.0
DNHY 475	Dental Hygiene Clinic I	—	—	176	176	4.0
Totals		87	—	176	263	12.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Autumn Quarter</b>						
DNHY 218	Community Oral Health Practicum	—	—	60	60	2.0
DNHY 415	Applied Nutrition	22	—	—	22	2.0
DNHY 418	Critical Issues of Health Care	22	—	—	22	2.0
DNHY 452	Clinical Seminar II	11	—	—	11	1.0
DNHY 476	Dental Hygiene Clinic II	—	—	176	176	4.0
DNHY 495	Dental Hygiene National Board Preparation	22	—	—	22	2.0
Totals		77	—	236	313	13.0
<b>Winter Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNHY 409	Jurisprudence and Practice Management	22	—	—	22	2.0
DNHY 412	Dental Hygiene Topics II	22	—	—	22	2.0
DNHY 435	Special Topics in Periodontal Therapy	22	—	—	22	2.0
DNHY 453	Clinical Seminar III	11	—	—	11	1.0
DNHY 477	Dental Hygiene Clinic III	—	—	176	176	4.0
Totals		77	—	176	253	11.0
<b>Overall Totals</b>		<b>772</b>	<b>258</b>	<b>858</b>	<b>1,888</b>	<b>100.0</b>

**DENTAL HYGIENE – B.S.**

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Junior Year, Autumn Quarter</b>						
ANAT 301	Head and Neck Anatomy, DH	40	—	—	40	4.0
DNHY 303	Dental Materials and Techniques	20	—	—	20	2.0
DNHY 305	Oral Anatomy Lecture	22	—	—	22	2.0
DNHY 305L	Oral Anatomy Laboratory	—	44	—	44	1.0
DNHY 309	Radiology I	33	28	—	61	3.0
DNHY 321	Preclinical Dental Hygiene I Lecture	22	—	—	22	2.0
DNHY 321L	Preclinical Dental Hygiene I Laboratory	—	88	—	88	2.0
RELT 423	Loma Linda Perspectives	20	—	—	20	2.0
Totals		157	160	—	317	18.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Winter Quarter</b>						
ANAT 303	General and Oral Histology and Embryology	30	—	—	30	3.0
ANES 314	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	41	14	—	55	4.0
DNHY 310	Radiology II	22	—	—	22	2.0
DNHY 322	Preclinical Dental Hygiene II Lecture	20	—	—	20	2.0
DNHY 322L	Preclinical Dental Hygiene II Laboratory	—	44	—	44	2.0
DNHY 375	Dental Hygiene Clinic	—	—	30	30	1.0
DNHY 380	Medically Compromised Patients	20	—	—	20	2.0
DNHY 381	Pharmacology for the Dental Hygienist I	44	—	—	44	2.0
Totals		177	58	30	265	18.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Spring Quarter</b>						
DNHY 323	Preclinical Dental Hygiene III	22	—	—	22	2.0
DNHY 323L	Preclinical Laboratory	—	40	—	40	1.0
DNHY 376	Dental Hygiene Clinic	—	—	120	120	4.0
DNHY 380	Medically Compromised Patients	20	—	—	20	2.0
DNHY 382	Pharmacology for the Dental Hygienist II	11	—	—	11	1.0
DNHY 405	Introduction to Periodontics	20	—	—	20	2.0
DNHY 450	Junior Clinical Seminar Grade given at end of multiple-quarter course.	10	—	—	10	1.0
ODRP 311	General and Oral Pathology DH	50	—	—	50	5.0
RELE 457	Christian Ethics and Health Care	20-30	—	—	20-30	2.0
Totals		153-163	40	120	313-323	20.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Senior Year, Summer Quarter</b>						
DNES 305	Etiology and Management of Dental Caries	16	8	—	24	2.0
DNHY 328	Dental Hygiene Portfolio Practicum	10	—	—	10	1.0
DNHY 376	Dental Hygiene Clinic	—	—	120	120	4.0
DNHY 390	Introductory Statistics	22	—	—	22	2.0
DNHY 406	Orthodontics Concepts for Dental Hygiene	10	—	—	10	1.0
DNHY 416	Dental Health Education I	20	—	—	20	2.0
DNHY 421	Research I	8	30	—	38	2.0
DNHY 450	Junior Clinical Seminar Grade given at end of multiple-quarter course.	10	—	—	10	1.0
Totals		96	38	120	254	15.0

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Senior Year, Autumn Quarter</b>						
DNHY 411	Dental Hygiene Topics I	22	—	—	22	2.0
DNHY 415	Applied Nutrition	22	—	—	22	2.0
DNHY 417	Dental Health Education II	20	—	—	20	2.0
DNHY 422	Research II	20	—	—	20	2.0
DNHY 435	Special Topics in Periodontal Therapy	22	—	—	22	2.0
DNHY 451	Clinical Seminar I	10	—	—	10	1.0
DNHY 475	Dental Hygiene Clinic I	—	—	176	176	4.0
DNHY 495	Dental Hygiene National Board Preparation	11-22	—	—	11-22	1.0
RELR 475	Art of Integrative Care	20-30	—	—	20-30	2.0
Totals		147-168	—	176	323-344	18.0
<b>Winter Quarter</b>		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNHY 408	Professional Ethics	22	—	—	22	2.0
DNHY 412	Dental Hygiene Topics II	22	—	—	22	2.0
DNHY 418	Critical Issues of Health Care	22	—	—	22	2.0
DNHY 431	Public Health Dentistry	33	—	—	33	3.0
DNHY 452	Clinical Seminar II	11	—	—	11	1.0
DNHY 476	Dental Hygiene Clinic II	—	—	176	176	4.0
DNHY 495	Dental Hygiene National Board Preparation	11-22	—	—	11-22	1.0
Totals		121-132	—	176	297-308	15.0
<b>Spring Quarter</b>		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
DNHY 409	Jurisprudence and Practice Management	22	—	—	22	2.0
DNHY 413	Dental Hygiene Topics III	22	—	—	22	2.0
DNHY 414	Personal Finance	20	—	—	20	2.0
DNHY 453	Clinical Seminar III	11	—	—	11	1.0
DNHY 477	Dental Hygiene Clinic III	—	—	176	176	4.0
RELR 408	Christian Perspectives on Marriage and the Family	20-30	—	—	20-30	2.0
Totals		95-105	—	176	271-281	13.0
<b>Overall Totals</b>		<b>946-998</b>	<b>296</b>	<b>798</b>	<b>2,040-2,092</b>	<b>117.0</b>

NOTE: Consult advisor regarding other courses that may be applied towards graduation.

## DENTAL HYGIENE TEN CORE COMPETENCIES

The curriculum is designed to ensure that by graduation all students will have the knowledge, skills, and attitudes to successfully enter the practice of dental hygiene. Students meeting graduation requirements must be able to:

- Competency 1: Apply a professional code of ethics in all patient and professional interactions.
- Competency 2: Adhere to the federal/state legal and regulatory framework in the provision of oral health care.
- Competency 3: Apply critical-thinking and problem-solving skills in the provision of oral health care to promote whole-patient health and wellness.
- Competency 4: Use evidence-based rationales and emerging treatment modalities to evaluate and incorporate accepted standards of care.
- Competency 5: Incorporate self-assessment and professional growth through lifelong learning.
- Competency 6: Advance oral health services through affiliations with professional organizations, service activities, and research.
- Competency 7: Apply quality assurance process to ensure a continued commitment to accepted standards of care.
- Competency 8: Communicate effectively with diverse individuals and groups, serving all persons without discrimination by acknowledging and appreciating diversity.
- Competency 9: Provide accurate, consistent, and complete assessment, planning, implementation, evaluation, and documentation for the provision of all phases of the dental hygiene process of care.
- Competency 10: Provide collaborative, individualized patient care that is comprehensive and compassionate.

## REGULATIONS

The student is also subject to the conditions of registration, attendance, financial policy, governing practices, and graduation requirements outlined in Section II and in the School of Dentistry general information in Section III of this CATALOG.

## EMPLOYMENT

Dental hygiene students may accept part-time employment during the school year after receiving approval from the department chair and the executive associate dean. Permission to work is granted on the basis of grades, class load, and health. Work hours may not interfere with class, laboratory, or clinic assignments.

## SUPPLIES

Dental hygiene students must have prescribed textbooks, computers, supplies, instruments, and uniforms. The official instruments issued must be purchased from the School of Dentistry during registration. Unauthorized or incomplete equipment is not acceptable. Advance consent must be obtained for any exception. The student must buy the professional apparel (uniforms, protective eyewear, and shoes) specified by the School of Dentistry.

## LICENSE

To practice, the dental hygienist must pass clinical licensing examinations given by state and/or regional dental examining boards. The examinations are given several times each year. Credentials from

the National Board of Dental Examiners are accepted in lieu of the written portion of a state examination in some states. Some states have additional computer-based written examinations. Further information can be obtained from each state licensing board or regional clinical examination Web site.

## **DENTAL HYGIENE—B.S. DEGREE IN DENTAL HYGIENE DEGREE COMPLETION CURRICULUM**

- Dental Hygiene—Education Track
- Dental Hygiene—Public Health Track

### **Program goals**

The Loma Linda University B.S. degree in dental hygiene completion curriculum offers an opportunity for dental hygienists to further their education beyond the certificate or associate degree level. This online program is designed to guide students in developing the knowledge, skills, attitudes, and values necessary for positions of responsibility in a variety of health care, educational, research, and community settings.

The curriculum will:

1. Provide the student with knowledge to successfully apply critical-thinking and evidence-based decision making in all aspects of dental hygiene practice.
2. Equip the student with the skills to teach in public/community health or educational settings.
3. Prepare the student to effectively communicate in diverse settings, utilizing a variety of methods.
4. Advance student awareness of wholeness and ethics in educational or public/community health settings.
5. Foster student commitment to lifelong learning and career development.

### **Admission**

Application for admission to this online curriculum must be submitted by February 1 for the class beginning in the Autumn Quarter and August 1 for the class beginning in the Spring Quarter. The curriculum may be completed on a full- or part-time basis. Basic requirements and credentials for admission include:

- Graduation from a dental hygiene A.S. degree program accredited by the Commission on Dental Accreditation.
- Successful completion of the Dental Hygiene National Board Examination.
- Successful completion of a state or regional clinical board examination.

All applicants must provide the following:

- All college transcripts.
- Applications submitted between July 1 through February 1 and April 1 through August 1 for admission to the online degree completion curriculum. The application is available at <llu.edu/central/apply>.
- Three letters of reference, including one from the director of the accredited dental hygiene program from which the applicant graduated.

All students graduating from Loma Linda University with a B.S. degree in dental hygiene must have completed all of the prerequisites, including the four domains for general education. Should any prerequisite be lacking, it must be completed at a *four-year college or university* before or during the degree completion curriculum at Loma Linda University School of Dentistry.

<b>Core</b>		<b>Educ</b>	<b>Public Health</b>
Minimum grade of C- required on all the following courses including those in the concentration			
DNES 305	Etiology and Management of Dental Caries	2.0	2.0
DNHY 390	Introductory Statistics	2.0	2.0
DNHY 391	Introduction to Grant Writing	2.0	2.0
DNHY 419	Essentials of Public Health for Dental Hygienists		3.0
DNHY 421	Research I	2.0	2.0
DNHY 422	Research II	2.0	2.0
DNHY 425	Educational Psychology for Health Professionals	3.0	3.0
DNHY 428	Health Care Management		3.0
DNHY 436	Ethical and Legal Principles in Education	2.0	
DNHY 437	Ethical Principles in Public Health for the Dental Hygienist		2.0
DNHY 441	Principles of Education I	3.0	3.0
DNHY 442	Principles of Education II	3.0	
DNHY 444	Teaching Practicum	3.0	
DNHY 446	Principles of Clinical Instruction	3.0	
DNHY 449	Treating the Special-Needs Patient		3.0
DNHY 464	Web-Based Techniques	2.0	2.0
DNHY 478	Advanced Clinical Concepts	2.0	
DNHY 484	Legal Issues in Health Care		2.0
DNHY 498	Dental Hygiene Directed Study	2.0	2.0
DNHY 499	Research Writing	2.0	2.0
RELE 457	Christian Ethics and Health Care (2.0-3.0)	2.0	2.0
RELT 423	Loma Linda Perspectives (2.0-3.0)	2.0	2.0
Totals		39.0	39.0
<b>Overall Totals</b>		<b>39.0</b>	<b>39.0</b>

NOTE: Consult advisor regarding other courses that may be applied to the curriculum.

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

## **Dentistry, International Dentist Program—SD**

D.D.S.

GREGORY D. MITCHELL, Program Director

### **FACULTY**

Hardik Desai

Nathan A. Dinsbach

Michael J. Fitzpatrick

Balsam F. Jekki

Andrea R. Beckford

Gregory D. Mitchell

Sofia I. Rodriguez-Lopez

Ronald L. Sorrels

Marcelo G. Toledo

Klaus D. Wolfram

The International Dentist Program, founded by Dr. Lloyd Baum in 1985, is designed to allow qualified dentists educated in countries outside the United States to earn a Doctor of Dental Surgery (D.D.S.) degree in the United States. More than 400 students from 78 countries have graduated from the program.

The D.D.S. degree from a U.S. dental college is an educational requirement for eligibility to take the dental licensure examination in many states. The program has a minimum length of two academic years (twenty-four calendar months); but it may be extended, when necessary, to meet the needs of a particular student.

### **ADMISSIONS**

Information and procedures for applying to the International Dentist Program can be found under Application and Admissions in the School of Dentistry general information in Section III of this CATALOG.

### **REGULATIONS**

The student is also subject to the conditions of registration, attendance, financial policy, governing practices, and graduation requirements outlined in Section II and in the School of Dentistry general information in Section III of this CATALOG.

		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
<b>Third Year, Spring Quarter</b>						
DNES 707	Personal Development	19	3	—	22	2.0
ENDN 831	Endodontics I	10	—	—	10	1.0
ENDN 832	Endodontics II	—	30	—	30	1.0
IDPG 845	Evidence-Based Dentistry 1 of 2	22	—	—	22	2.0
IDPO 725	Patient Assessment and Data Management	22	—	—	22	2.0
IDPO 826	Oral and Maxillofacial Surgery	11	33	—	44	2.0
IDPP 759	Special Topics in Periodontal Therapy	22	—	—	22	2.0
IDPR 701	Operative Dentistry I	11	33	—	44	2.0
IDPR 761	Removable Prosthodontics I	11	33	—	44	2.0
IDPR 771	Fixed Prosthodontics I	11	33	—	44	2.0
RELE 734	Christian Ethics for Dentists	20	—	—	20	2.0
Totals		159	165	—	324	20.0
<b>Summer Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
IDPG 845	Evidence-Based Dentistry 2 of 2	22	—	—	22	2.0
IDPO 726	Patient Diagnosis and Treatment Planning	22	—	—	22	2.0
IDPO 827	Oral and Maxillofacial Surgery	11	33	—	44	2.0
IDPP 754	Clinical Periodontics	11	33	—	44	2.0
IDPP 756	Pediatric Dentistry	22	—	—	22	2.0
IDPP 756L	Pediatric Dentistry Laboratory	—	44	—	44	1.0
IDPR 702	Operative Dentistry II	11	33	—	44	2.0
IDPR 704	Introduction to Occlusion	22	—	—	22	2.0
IDPR 762	Removable Prosthodontics II	11	33	—	44	2.0
IDPR 772	Fixed Prosthodontics II	11	33	—	44	2.0
Totals		143	209	—	352	19.0
<b>Autumn Quarter</b>						
		Clock Hours				Total Units
		Lec/Sem	Lab	Clin	Total	
IDPC 825	General Clinics 1 of 2	—	—	240	240	8.0
IDPO 727	Intermediate Treatment Planning Seminar	11	—	—	11	1.0
IDPP 755	Pediatric Dentistry Clinic--IDP	—	—	48	48	1.0
IDPR 703	Partial Coverage Castings	15	15	—	30	2.0
IDPR 773	Intermediate Prosthodontic Seminar	10	—	—	10	1.0
IDPR 803	Operative Dentistry III	11	33	—	44	2.0
ORDN 801	Minor Tooth Movement	20	—	—	20	2.0
Totals		67	48	288	403	17.0

		Clock Hours				Total Units	
		Lec/Sem	Lab	Clin	Total		
<b>Winter Quarter</b>							
IDPC 825	General Clinics	2 of 2	—	—	240	240	8.0
IDPO 535	Oral Pathology and Diagnosis		33	—	—	33	3.0
IDPR 854	Implant Dentistry for the IDP Student		22	44	—	66	3.0
ORDN 811	Principles of Orthodontics II		11	—	—	11	1.0
RELR 749	Personal and Family Wholeness		20	—	—	20	2.0
Totals			86	44	240	370	17.0
<b>Fourth Year, Spring Quarter</b>							
			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
IDPC 835	General Clinics	1 of 2	—	—	360	360	12.0
Totals			—	—	360	360	12.0
<b>Summer Quarter</b>							
			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
IDPC 835	General Clinics	2 of 2	—	—	360	360	12.0
Totals			—	—	360	360	12.0
<b>Autumn Quarter</b>							
			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
DNES 817	Practice Management I for IDP Students		40	—	—	40	1.0
IDPC 845	General Clinics	1 of 2	—	—	240	240	8.0
IDPO 534	Oral Medicine-Orofacial Pain and TMD		20	—	—	20	2.0
IDPR 801	Fixed Prosthodontics III		11	33	—	44	2.0
RELT 717	Christian Beliefs and Life		20	—	—	20	2.0
Totals			91	33	240	364	15.0
<b>Winter Quarter</b>							
			Clock Hours				Total Units
			Lec/Sem	Lab	Clin	Total	
DNES 818	Practice Management II for IDP Students		40	—	—	40	1.0
IDPC 845	General Clinics	2 of 2	—	—	240	240	8.0
PEDN 821	Pediatric Dentistry II		10	—	—	10	1.0
Totals			50	—	240	290	10.0
<b>Overall Totals</b>			<b>596</b>	<b>499</b>	<b>1,728</b>	<b>2,823</b>	<b>122.0</b>

## Postdoctoral Programs

There are three degree options available in advanced dental education:

- Certificate
- Master of Science (M.S.)
- Master of Science in Dentistry (M.S.D.)

## Dental Anesthesiology, Advanced—SD

Certificate (post-D.D.S.), M.S.D.

LARRY D. TRAPP, Director, Advanced Education Program

JOHN W. LEYMAN, Director, Special Care Dentistry Clinic

### FACULTY

Barry K. Krall

John W. Leyman

Larry D. Trapp

The Dental Anesthesiology, Advanced Program is offered to dentists who desire to pursue a career in anesthesiology for dentistry. The educational design of this twenty-four month program provides a strong clinical background in anesthesiology. The program is based in the Koppel Special Care Dentistry Center (KSCDC), an outpatient facility utilizing general anesthesia for dental care. The KSCDC is located in the School of Dentistry, where approximately 4,000 patients are treated on an annual basis. Additional training in structured rotations in cardiology, internal medicine, and anesthesiology is obtained at area hospitals.

Didactic instruction is coordinated through the School of Dentistry's Department of Dental Anesthesiology. Residents attend an anesthesiology lecture series and weekly grand rounds at Loma Linda University Medical Center. In addition, regular meetings of the dental anesthesiology residents are held, during which a variety of contemporary topics are discussed—including a review of the current literature. Residents also participate in teaching pain control in the predoctoral curriculum and present at the annual Dental Anesthesia Symposium at Loma Linda University.

Upon successful completion of the program, the dental anesthesiologist will be eligible to take the diplomate examination of the American Dental Board of Anesthesiology, and to apply for a general anesthesia permit in any state of the United States.

Following enrollment into the program, residents may apply for acceptance to the Master of Science in Dentistry (M.S.D.) degree track, in addition to the specialty certificate. The application should be submitted at the end of the first year and be supported by the program director. Admission into the M.S.D. degree track may extend the length of study. Any additional time must be in residence, and continued financial support is not guaranteed.

### DENTAL ANESTHESIOLOGY GOALS

1. To provide anesthesia-related skills and knowledge that will be the basis for a safe and responsible practice of office- or hospital-based dental anesthesiology after completion of the training program.
2. To provide an in-depth education in acute pain and anxiety as they pertain to dental treatment and an understanding of the application of the pharmacologic and behavioral treatments of these conditions.
3. To provide a background in the health sciences and clinical medicine that allows a dentist anesthesiologist to recognize and appropriately refer the patient who is at elevated risk for anesthesia due to comorbidities.

4. To select graduates of dental schools in the United States and Canada for training in anesthesiology who have demonstrated character values that include integrity, respect for others, a willingness to work hard, compassion, and the ability to take responsibility.

Program link: <llu.edu/dentistry/anesthesia/graduateprogram.page>.

## APPLICATION PROCESS

The Dental Anesthesiology, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education dental anesthesiology program must also complete and submit a separate online application (<llu.edu/central/apply>) directly to Loma Linda University.

This program will also accept direct applications from individuals who are not applying to other institutions through PASS.

## APPLICATION DEADLINE

Application for admission should be submitted no later than September 1 of the year prior to the summer of intended enrollment.

## TUITION (2011-2012)

Tuition or fees are waived. Residents are paid a stipend during training.

Major		Cert	MSD
ANES 521	Principles of Medicine, Physical Diagnosis, and Hospital Protocol (1.0)	8.0	8.0
ANES 547	Anesthesia Grand Rounds (1.0)	8.0	8.0
ANES 549	Contemporary Anesthesia	1.0	1.0
ANES 604	Anesthesia Literature Review (1.0)	2.0	2.0
ANES 652	Introduction to General Anesthesia	1.0	1.0
ANES 654	Practice Teaching in Anesthesia	1.0	1.0
ANES 674	Crisis Management in Anesthesia (0.5)	4.0	4.0
ANES 696	Scholarly Activity in Dental Anesthesiology	1.0	1.0
ANES 697A	Research		1.0
ANES 697B	Research		2.0
Totals		26.0	29.0

Interdisciplinary		Cert	MSD
REL_5__	Graduate-level Religion	3.0	3.0
Totals		3.0	3.0

## Clinical

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		Cert	MSD
ANES 746	General Anesthesia (10.0)	80.0	80.0
Totals		—	—
<b>Overall Totals</b>		<b>29.0</b>	<b>32.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

## Endodontics, Advanced—SD

Certificate (post-D.D.S.), M.S.D., M.S.

MAHMOUD TORABINEJAD, Director, Advanced Education Program

### FACULTY

Leif K. Bakland

Robert A. Handysides

David E. Jaramillo

Bonnie J. Retamozo

Mahmoud Torabinejad

The mission of the Endodontics, Advanced Program is to train endodontists who are proficient in treating teeth that require root canal therapy (art), who possess an in-depth biological knowledge related to endodontics (science), and who have participated in endodontic research and teaching.

The goals of the Endodontics, Advanced Program include training endodontists who have:

1. The knowledge necessary to diagnose and plan treatment for various pulpal and periapical conditions, and who possess skills at the level of proficiency to treat—alone or in concert with other dental and medical practitioners—various pulpal and periapical conditions.
2. Formally taken biomedical sciences-related endodontics and health sciences courses at an advanced level.
3. Participated in endodontic research and teaching.
4. Been prepared for careers in clinical practice.

The program begins in July and requires twenty-seven months in residence for the specialty certificate.

Following enrollment into the program, students may apply for acceptance to either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree track, in addition to the specialty certificate. The application should be submitted at the beginning of the second year and must be supported by the program director. Admission into the M.S. or the M.S.D. degree track may extend the length of study; the additional time must be in residence. The Graduate Record Examination (GRE) will be required for those who elect to pursue admission into the M.S. degree curriculum.

Graduates in both the certificate and graduate degree curricula are educationally qualified for certification by the American Board of Endodontics.

Program link: <[llu.edu/dentistry/endo/graduateprogram.page](http://llu.edu/dentistry/endo/graduateprogram.page)>.

### APPLICATION PROCESS

The Endodontics, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education program in endodontics must also complete and submit a separate online application (<[llu.edu/central/apply](http://llu.edu/central/apply)>) directly to Loma Linda University.

This program also will accept direct applications for individuals who are not applying to other institutions through PASS.

The Endodontics, Advanced Program has a rolling admissions policy. This means that candidates will be selected for admission during the application period until the class is filled. Once the class has been filled, an announcement will be posted on the program's description on the Loma Linda University School of Dentistry Web site, and the admissions process will be closed for the year.

## APPLICATION DEADLINE

Application for admission should be submitted by August 1 of the year prior to the summer of intended enrollment.

## TUITION

Tuition for the 2011-2012 school year is \$12,558 per academic quarter. In addition, fees for each academic quarter include: insurance, \$447; student services, \$197; information technology support, \$195; and microsurgery fee, \$800.

<b>Major</b>		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
ENDN 534	Endodontic Treatment Conference (1.0-2.0)	18.0	18.0	18.0
ENDN 601	Principles of Endodontics (2.0)	10.0	10.0	10.0
ENDN 604	Literature Seminar in Endodontics (2.0)	12.0	12.0	12.0
ENDN 654	Practice Teaching in Endodontics (1.0)	4.0	4.0	4.0
ENDN 697A	Research	1.0	1.0	1.0
ENDN 697B	Research (1.0-2.0)	1.0	2.0	1.0
ENDN 698	Thesis			1.0
<b>Totals</b>		<b>46.0</b>	<b>47.0</b>	<b>47.0</b>

<b>Interdisciplinary</b>		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
GRDN 514	Introduction to Biomedical Research	4.0	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0	2.0
GRDN 601	Practice Management	2.0	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0	2.0
GRDN 622	Biomedical Science I	4.0	4.0	4.0
GRDN 623	Biomedical Science II	4.0	4.0	4.0
GRDN 632	Basic Microsurgery Techniques	2.0	2.0	2.0
IMPD 611	Introduction to Implant Dentistry	2.0	2.0	2.0
IMPD 612	Advanced Implant Dentistry	2.0	2.0	2.0
ORPA 533	Radiology	2.0	2.0	2.0
PERI 624	Moderate Sedation in Periodontics	4.0	4.0	4.0
REL_ 5__	Graduate-level Religion	3.0	3.0	3.0
<b>Totals</b>		<b>33.0</b>	<b>33.0</b>	<b>33.0</b>

## Clinical

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
ENDN 725	Clinical Practice in Endodontics (1.0-8.0)	72.0	72.0	72.0
<b>Totals</b>		<b>—</b>	<b>—</b>	<b>—</b>
<b>Overall Totals</b>		<b>79.0</b>	<b>80.0</b>	<b>80.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

## Implant Dentistry, Advanced—SD

Certificate (post-D.D.S.), M.S.D., M.S.

JAIME L. LOZADA, Director, Advanced Education Program

### FACULTY

Aladdin J. Al-Ardah

Joseph Y. K. Kan

S. Alejandro Kleinman

Jaime L. Lozada

The Implant Dentistry, Advanced Program leads to a certificate. The postdoctoral student may also obtain a Master of Science degree. The program is designed to prepare the student for the practice of implant dentistry and to provide the foundation for the continued acquisition of knowledge and clinical skills in this demanding area.

Implant dentistry interfaces with the dental specialties of oral and maxillofacial surgery, prosthodontics, and periodontics. The implant dentistry student will be expected to achieve advanced knowledge and skills in certain aspects of all these dental specialties and to be proficient in implant prosthodontics and implant surgery. The content of the program is designed to prepare the student for certification by the American Board of Implant Dentistry; and upon application, s/he may be qualified as an associate fellow of the American Academy of Implant Dentistry.

The program start date is July 1, and the required time in residence for the certificate is thirty-six months.

Following enrollment into the program, students may apply for acceptance to either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree track, in addition to the specialty certificate. The application should be submitted before the end of the first year and must be supported by the program director. Admission into the M.S. or the M.S.D. degree track may extend the length of study to complete a research project and a thesis. The additional time must be in residence. The Graduate Record Examination (GRE) will be required for those who elect to pursue admission into the M.S. degree curriculum.

### IMPLANT DENTISTRY GOALS

1. To educate graduates to deliver implant dentistry treatment.
2. To provide in-depth didactic and clinical instruction in problem-based patient situations that require implant prosthodontic and surgical solutions.
3. To train graduates to develop clinical practice.
4. To train graduates to achieve the highest levels of patient-treatment satisfaction.
5. To educate graduates to perform research and practice teaching.

Program link: <[llu.edu/dentistry/implant/graduateprogram.page](http://llu.edu/dentistry/implant/graduateprogram.page)>.

### APPLICATION DEADLINE

Application for admission should be submitted by September 15 of the year prior to the summer of intended enrollment.

## TUITION

Tuition for the 2011-2012 school year is \$12,558 per academic quarter. Additional fees for each academic quarter include insurance, \$447; student services, \$197; and information technology support, \$195.

Summer Quarter 2011-2012: For Summer Quarter, a separate fee of \$800 is charged for GRDN 632 Basic Microsurgery Technique, taken by students during the first quarter. This fee does not include instruments and textbooks. Students should plan on an annual increase consistent with inflation in the education sector.

<b>Major</b>		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
IMPD 505	Patient Presentation Seminar (1.0)	10.0	10.0	10.0
IMPD 533	Applied Radiology for Implant Dentistry	1.5	1.5	1.5
IMPD 547	Implant Dentistry Grand Rounds (1.0)	10.0	10.0	10.0
IMPD 561	Dental Bioengineering	2.0	2.0	2.0
IMPD 585	Implant Prosthodontics (2.0)	10.0	10.0	10.0
IMPD 601	Literature Review in Implant Dentistry (2.0)	22.0	22.0	22.0
IMPD 604	Current Literature Review in Implant Dentistry (2.0)	20.0	20.0	20.0
IMPD 611	Introduction to Implant Dentistry	2.0	2.0	2.0
IMPD 612	Advanced Implant Dentistry	2.0	2.0	2.0
IMPD 631	Oral Implant Surgery (1.0)	11.0	11.0	11.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1.0)	10.0	10.0	10.0
IMPD 637	Peri-Implant Histopathology	1.0	1.0	1.0
IMPD 654	Practice Teaching in Implant Dentistry (1.0-3.0)	3.0	3.0	3.0
IMPD 696	Scholarly Activity in Implant Dentistry	1.0	1.0	1.0
IMPD 697A	Research		1.0	1.0
IMPD 697B	Research		2.0	1.0
IMPD 698	Thesis			1.0
Totals		105.5	108.5	108.5

<b>Interdisciplinary</b>		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
GRDN 514	Introduction to Biomedical Research	4.0	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0	2.0
GRDN 622	Biomedical Science I	4.0	4.0	4.0
GRDN 632	Basic Microsurgery Techniques	2.0	2.0	2.0
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery (1.0)	4.0	4.0	4.0
OMFS 606	Applied Surgical Anatomy	1.0	1.0	1.0
PERI 601	Periodontal Therapy	2.0	2.0	2.0
PERI 624	Moderate Sedation in Periodontics	4.0	4.0	4.0
PROS 500	Prosthodontic Literature Review (2.0)	6.0	6.0	6.0
PROS 546	Occlusion and Morphology	2.0	2.0	2.0
PROS 547	Occlusion: Principles and Instrumentation	2.0	2.0	2.0
PROS 555	Removable Partial Prosthodontics	2.0	2.0	2.0
PROS 565	Complete Denture Prosthodontics	2.0	2.0	2.0
PROS 566	Advanced Complete Denture Prosthodontics	2.0	2.0	2.0

PROS 575	Fixed Partial Prosthodontics	2.0	2.0	2.0
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)	2.0	2.0	2.0
PROS 595	Maxillofacial Prosthetics	2.0	2.0	2.0
REL_ 5__	Graduate-level Religion	3.0	3.0	3.0
Totals		50.0	50.0	50.0

### Clinical

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		Cert	MSD	MS
IMPD 725	Clinical Practice in Implant Dentistry (4.0)	40.0	40.0	40.0
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry (2.0)	4.0	4.0	4.0
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry (2.0)	20.0	20.0	20.0
Totals		—	—	—
<b>Overall Totals</b>		<b>155.5</b>	<b>158.5</b>	<b>158.5</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

# Oral and Maxillofacial Surgery, Advanced—SD

Certificate (post-D.D.S.), M.S.D., M.S., M.D.

ALAN S. HERFORD, Director, Advanced Education Program

## FACULTY

Jeffrey S. Dean

Alan S. Herford

Carlos M. Moretta

Wayne K. Tanaka

The Oral and Maxillofacial Surgery, Advanced Program is designed to prepare the resident for practice of the specialty and to provide the foundation for the continued acquisition of knowledge and skills. Clinical surgical health care delivery is emphasized. The resident is introduced to research methodology and teaching to develop an increased awareness of their importance in assessing clinical procedures and patient management. The content of the program conforms to the Standards of the Commission on Accreditation and is designed to prepare the surgeon for certification by the American Board of Oral and Maxillofacial Surgery.

Four-year and six-year residency programs are available. Residents in the six-year program will also complete medical school and a one-year general surgery internship. The residency begins July 1.

Following enrollment into the program, residents may apply for acceptance to either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree track, in addition to the specialty certificate. The application should be submitted before the end of the first year and must be supported by the program director. Admission into the M.S. or the M.S.D. degree track may extend the length of study; the additional time must be in residence. The Graduate Record Examination (GRE) will be required for admission into the M.S. degree track.

## ORAL AND MAXILLOFACIAL SURGERY GOALS

1. To prepare the resident for competent delivery of health care.
2. To prepare the resident for continual acquisition of skills and knowledge to improve health care.
3. To prepare the resident for certification by the American Board of Oral and Maxillofacial Surgery.
4. To provide the background for stimulation of academic achievement should the resident wish to enter into a teaching career.
5. To enable the resident to practice the full scope of oral and maxillofacial surgery in a competent and skillful manner, based on a thorough knowledge of the basic sciences.
6. To integrate oral and maxillofacial surgical care with other medical and dental specialties in the health care delivery system.
7. To conduct clinical investigation and/or research studies.
8. To encourage the resident to practice the specialty based upon the highest moral and ethical standards.
9. To provide the resident the opportunity to achieve a high degree of clinical proficiency in his/her specialty.
10. To provide extensive surgical experience of a broad nature.

11. To develop competence in the administration of inpatient and outpatient general anesthesia, local anesthesia, and sedation techniques.
12. To provide the resident with the basic skills and tools required to manage the administration of his/her practice.
13. To provide competence in resident communication skills. Training will include public speaking, lecturing, writing, and improving the resident's critical thinking—providing a foundation to become an effective student and mentor.
14. To provide residents with the skill to proficiently assess and treat problems of the maxillofacial region. This includes dentoalveolar surgery, maxillofacial trauma, reconstructive surgery, pathology and orthognathic/craniofacial surgery.
15. To demonstrate the importance of lifelong learning and to encourage promotion of faculty.

Program link: <[llu.edu/dentistry/oms/graduateprogram.page](http://llu.edu/dentistry/oms/graduateprogram.page)>.

## APPLICATION PROCESS

The Oral and Maxillofacial Surgery, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education program in oral and maxillofacial surgery must also complete and submit an online application directly to Loma Linda University.

The advanced education program also participates in the Postdoctoral Dental Matching Program (Match). This program identifies and "matches" the preferences of applicants and the advanced education program, using a rank order list submitted by the applicant and the program.

## APPLICATION DEADLINE

Application for admission should be submitted by October 15 of the year prior to the summer of intended enrollment. Applicants to the six-year program must also apply to the School of Medicine.

## TUITION

Tuition and fees are waived.

Major		Cert	MSD	MS
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery (1.0)	12.0	12.0	12.0
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities (1.0)	12.0	12.0	12.0
OMFS 606	Applied Surgical Anatomy	1.0	1.0	1.0
OMFS 607	Principles of Medical History, Physical Examination, and Clinical Medicine	2.0	2.0	2.0
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference (0.5)	6.0	6.0	6.0
OMFS 609	Literature Review in Oral and Maxillofacial Surgery (0.5)	6.0	6.0	6.0
OMFS 615	Current Trends in Medicine and Surgery (2.0)	12.0	12.0	12.0
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1.0	1.0	1.0
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery (1.0)	12.0	12.0	12.0
OMFS 618	Introduction to General Anesthesia	1.0	1.0	1.0

OMFS 696	Scholarly Activity in Oral and Maxillofacial Surgery	1.0	1.0	1.0
OMFS 697A	Research		1.0	1.0
OMFS 697B	Research (1.0-2.0)		2.0	2.0
Totals		66.0	69.0	69.0

**Interdisciplinary**

		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
GRDN 601	Practice Management	2.0	2.0	2.0
GRDN 632	Basic Microsurgery Techniques	2.0	2.0	2.0
RELE 534	Ethical Issues in Public Health	3.0	3.0	3.0
Totals		7.0	7.0	7.0

**Clinical**

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice (7.0)	70.0	70.0	70.0
Totals		—	—	—
<b>Overall Totals</b>		<b>73.0</b>	<b>76.0</b>	<b>76.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

## Orthodontics and Dentofacial Orthopedics, Advanced—SD

Certificate (post-D.D.S.), M.S.

JOSEPH M. CARUSO, Chair

V. LEROY LEGGITT, Director, Advanced Education Program

### FACULTY

Joseph M. Caruso

James R. Farrage

Gabriela E. Garcia

V. Leroy Leggitt

Roland D. W. Neufeld

Kitichai Rungcharassaeng

R. David Rynearson

The Orthodontics and Dentofacial Orthopedics, Advanced Program is organized to provide graduates with the knowledge and skill to:

1. Develop technical competence in the skill of orthodontics.
2. Deepen understanding of the basic natural sciences and their correlation with the practice of orthodontics.
3. Develop analytical thinking.
4. Develop skills in clinical research.
5. Increase the sense of responsibility toward the patient and the community.
6. Develop increased awareness of the obligation to make contributions to the growth and stature of the profession and to coordinate with individuals in other allied professional disciplines.

All of the above goals are designed to prepare the student for a specialty practice in orthodontics or for pursuing a teaching career. The content of the program conforms to the standards developed by the specialty board, and graduates are educationally qualified for certification by the American Board of Orthodontics.

The master's degree curriculum requires a minimum of twenty-seven months in residence, beginning in late June. Additional time may be required, depending on the research selected. The Graduate Record Examination (GRE) is required for admission into the master's degree curriculum.

### ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS GOALS

1. Students will have course work in biomedical sciences that is intended to provide the knowledge required to practice orthodontics and dentofacial orthopedics as defined by the program's proficiency standard.
2. Students will have a clinical experience that is varied and demanding and that will prepare them for the clinical practice of orthodontics and dentofacial orthopedics, with emphasis on bioprogressive principles.
3. Students will perform research that provides them with experience involving problem solving, critical thinking, research methodology, and scientific writing.

4. Students will be exposed to and participate in a teaching experience.
5. Students will be exposed to professional venues that encourage continued professional growth.

Program link: <llu.edu/dentistry/ortho/graduateprogram.page>.

## APPLICATION DEADLINE

All applications for admission should be submitted to the school by August 1 of the year prior to the summer of intended enrollment.

## TUITION

Tuition for the 2011-2012 school year is \$12,558 per academic quarter. Additional fees for each academic quarter include: insurance, \$447; student services, \$197; and information technology support, \$195.

Major		Cert	MS
ORDN 524	Introduction to Graduate Orthodontics	12.0	12.0
ORDN 524L	Introduction to Graduate Orthodontics Laboratory	6.0	6.0
ORDN 525	Materials Science and Mechanics	2.0	2.0
ORDN 526	Applied Anatomy	2.0	2.0
ORDN 527	Clinical Photography	1.0	1.0
ORDN 535	Advanced Cephalometrics	2.0	2.0
ORDN 536	Concepts of Physical Anthropology	2.0	2.0
ORDN 545	Growth and Development	3.0	3.0
ORDN 546	Fundamentals of Occlusion	2.0	2.0
ORDN 571	Diagnosis and Treatment Planning I	2.0	2.0
ORDN 574	Diagnosis and Treatment Planning II	2.0	2.0
ORDN 584	Current Orthodontics Literature I	2.0	2.0
ORDN 591	Current Orthodontics Literature II	2.0	2.0
ORDN 597	Orthognathic Surgery Theory and Literature Review	2.0	2.0
ORDN 604	Seminar in Orthodontics	1.0	1.0
ORDN 605	Advanced Seminar in Orthodontics (1.0)	2.0	2.0
ORDN 606	Craniofacial Genetics	2.0	2.0
ORDN 608	Physiology and Pathology of Speech	1.0	1.0
ORDN 634	Orthodontics Clinical Conference	2.0	2.0
ORDN 635	Finishing Mechanics I	2.0	2.0
ORDN 636	Finishing Mechanics II	1.0	1.0
ORDN 654	Practice Teaching in Orthodontics (1.0-4.0)	4.0	4.0
ORDN 655	Temporomandibular Function and Dysfunction	2.0	2.0
ORDN 657	Orthodontic Board Preparation (1.0-6.0)	6.0	6.0
ORDN 697A	Research	1.0	1.0
ORDN 697B	Research	1.0	1.0
ORDN 698	Thesis		3.0
Totals		67.0	70.0

**Interdisciplinary**

		<b>Cert</b>	<b>MS</b>
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 601	Practice Management	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0
GRDN 623	Biomedical Science II	5.0	5.0
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference (0.5)	2.0	2.0
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1.0	1.0
REL_ 5__	Graduate-level Religion	3.0	3.0
Totals		19.0	19.0

**Clinical**

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		<b>Cert</b>	<b>MS</b>
ORDN 725	Clinical Practice in Orthodontics (7.0)	56.0	56.0
Totals		—	—
<b>Overall Totals</b>		<b>86.0</b>	<b>89.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column indicate the total units required for the curriculum.

# Pediatric Dentistry, Advanced—SD

Certificate (post-D.D.S.), M.S.D., M.S.

JUNG-WEI CHEN, Director, Advanced Education Program

## FACULTY

Jung-Wei Chen

Bonnie A. Nelson

Wesley K. Okumura

Samah I. Omar

The Pediatric Dentistry, Advanced Program is designed to prepare the resident as a specialist in this area of dentistry. The curriculum leads to a certificate in pediatric dentistry. Clinical pediatric dentistry is emphasized; however, this clinical experience is balanced with a didactic curriculum of multidisciplinary courses and seminars. There is also a research component designed to expose the resident to problem solving using the scientific method. The program requires a minimum of twenty-four months in residence beginning July 1 and fulfills the requirements for initiating the process of certification by the American Board of Pediatric Dentistry.

Following enrollment into the program, residents may apply for acceptance to either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree track, in addition to the specialty certificate. The application should be submitted before the end of the first year and must be endorsed by the program director. Admission into the M.S. or the M.S.D. degree track may extend the length of study; the additional time must be in residence. The Graduate Record Examination (GRE) will be required for those who elect to pursue admission into the M.S. degree curriculum.

## PEDIATRIC DENTISTRY GOALS

1. To prepare the resident to be a specialist who is proficient in providing comprehensive, preventive, and therapeutic oral health care for infants and children through adolescence, including those with special health care needs.
2. To provide an educational structure that complies with the standards set forth by the Commission on Dental Accreditation.
3. To prepare the resident for the practice of pediatric dentistry.
4. To train pediatric dentists who have participated in pediatric dental research.
5. To train pediatric dentists who have participated in teaching pediatric dentistry.
6. To prepare the resident for certification by the American Board of Pediatric Dentistry.

Program link: <[llu.edu/dentistry/pediatrics/graduateprogram.page](http://llu.edu/dentistry/pediatrics/graduateprogram.page)>.

## APPLICATION PROCESS

The Pediatric Dentistry, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education program in pediatric dentistry must also complete and submit an online application (<[llu.edu/central/apply](http://llu.edu/central/apply)>) directly to Loma Linda University.

The Pediatric Dentistry, Advanced Program also participates in the Postdoctoral Dental Matching Program (MATCH). This program identifies and "matches" the preferences of applicants and the advanced education program, using a rank order list submitted by the applicant and the program.

### APPLICATION DEADLINE

Application for admission should be submitted by October 15 of the year prior to the summer of intended enrollment.

### TUITION AND FEES

Tuition for the 2011-2012 school year is \$12,558 per academic quarter. Additional fees for each academic quarter include: insurance, \$447; student services, \$197; and information technology support, \$195.

Major		Cert	MSD	MS
PEDN 503	Pediatric Dental Seminar (2.0)	16.0	16.0	16.0
PEDN 508	Pediatric Hospital Dentistry Seminar	2.0	2.0	2.0
PEDN 512	Oral Sedation Seminar	2.0	2.0	2.0
PEDN 521	Principles of Medicine and Physical Diagnosis	2.0	2.0	2.0
PEDN 524	Introduction to Orthodontics	2.0	2.0	2.0
PEDN 524L	Introduction to Orthodontics Laboratory	1.0	1.0	1.0
PEDN 604	Pediatric Dental Literature (2.0-12.0)	14.0	14.0	14.0
PEDN 654	Practice Teaching for Pediatric Dentistry (1.0-5.0)	5.0	5.0	5.0
PEDN 680	Elective Study for Advanced Education Students of Pediatric Dentistry (1.0-10.0)	5.0	5.0	5.0
PEDN 696	Scholarly Activity in Pediatric Dentistry	1.0	1.0	1.0
PEDN 697A	Research		1.0	1.0
PEDN 697B	Research		2.0	1.0
PEDN 698	Thesis			1.0
Totals		50.0	53.0	53.0

Interdisciplinary		Cert	MSD	MS
GRDN 514	Introduction to Biomedical Research	4.0	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0	2.0
GRDN 601	Practice Management	2.0	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0	2.0
GRDN 622	Biomedical Science I	4.0	4.0	4.0
ORDN 526	Applied Anatomy	2.0	2.0	2.0
ORDN 545	Growth and Development	3.0	3.0	3.0
ORDN 606	Craniofacial Genetics	2.0	2.0	2.0
ORDN 608	Physiology and Pathology of Speech	1.0	1.0	1.0
ORPA 533	Radiology	2.0	2.0	2.0
REL_ 5__	Graduate-level Religion	3.0	3.0	3.0
Totals		27.0	27.0	27.0

**Clinical**

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
PEDN 725	Pediatric Dental Clinic (8.0)	64.0	64.0	64.0
Totals		—	—	—
<b>Overall Totals</b>		<b>77.0</b>	<b>80.0</b>	<b>80.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

## Periodontics, Advanced—SD

Certificate (post-D.D.S.), M.S.D., M.S.

JEFFREY M. HENKIN, Program Director, Advanced Education Program

### FACULTY

Nikola Angelov

R. Leslie Arnett

Jeffrey M. Henkin

Yoon J. Kim

Craig M. Ririe

Dennis Smith

Chun-Xiao Sun

The three-year Periodontics, Advanced Program leads to a certificate in periodontics with an optional Master of Science (M.S.) or Master of Science in Dentistry (M.S.D.) degree.

The certificate in periodontics prepares the student for a specialty practice and provides the basis for continuing professional development after completion of the curriculum. Specific emphasis is placed on various high-level technique procedures, including esthetics- and prosthetics-related mucogingival surgery, root-form implant placement, preparatory augmentation, and repairs. The program includes didactic and clinical training, as well as research in a topic selected by the student.

The student is required to complete one or more research projects and is involved in clinical and didactic predoctoral teaching activities. The Graduate Record Examination (GRE) is required for those who elect to pursue the M.S. degree curriculum. The optional master's degree tracks are intended for the student who wishes to pursue an academic career or full-time clinical practice.

A minimum of thirty-six months in residence is required, beginning in July.

### PERIODONTICS GOALS

1. To train graduate students in the science of periodontics—including contributions from the literature, an understanding of periodontal pathology, and knowledge of the history and current rationale for performing clinical procedures in periodontics.
2. To train graduate students to be able to perform at the level of proficiency the full range of clinical procedures that are considered essential to establish a specialty practice in the field of periodontics.
3. To train graduate students to be able to design, conduct, and report a periodontal research project under the guidance of and in collaboration with a graduate faculty member; and to encourage graduate students to become diplomates of the American Board of Periodontology.
4. To train graduate students to be able to teach in both didactic and clinical areas of predoctoral periodontics at the level of a junior faculty member, with the intent of enhancing their ability to communicate with peers.
5. To train graduate students to be able to successfully complete the American Board of Periodontology Certification Examination.
6. To train graduate students to be able to achieve successful careers in clinical practice, research, and/or dental education.

Program link: <[llu.edu/dentistry/perio/graduateprogram.page](http://llu.edu/dentistry/perio/graduateprogram.page)>.

## APPLICATION PROCESS

The Periodontics, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education program in periodontics must also complete and submit a separate online application (<[llu.edu/central/apply](http://llu.edu/central/apply)>) directly to Loma Linda University.

The program has a rolling admissions policy. This means that candidates will be selected for admission during the application period until the class is filled. Once the class has been filled, an announcement will be posted on the program's description on the Loma Linda University School of Dentistry Web site, and the admissions process will be closed for the year.

## APPLICATION DEADLINE

Application for admission should be submitted to the program by September 1 of the year prior to the summer of intended enrollment.

## TUITION

Tuition for the 2011-2012 school year is \$12,558 per academic quarter. Additional fees for each academic quarter include: insurance, \$447; student services, \$197; and information technology support, \$195.

Major		Cert	MSD	MS
PERI 524	The Periodontium	2.0	2.0	2.0
PERI 531	Periodontal Pathology (2.0)	10.0	10.0	10.0
PERI 601	Periodontal Therapy (2.0)	12.0	12.0	12.0
PERI 604	Current Periodontal and Implant Literature (2.0)	18.0	18.0	18.0
PERI 605	Implant Literature Review (2.0)	4.0	4.0	4.0
PERI 611	Introduction to Periodontics	2.0	2.0	2.0
PERI 614	Implant Treatment Planning (2.0)	24.0	24.0	24.0
PERI 624	Moderate Sedation in Periodontics	4.0	4.0	4.0
PERI 634	Clinical Conference (1.0-2.0)	9.0	9.0	9.0
PERI 654	Practice Teaching in Periodontics (1.0)	4.0	4.0	4.0
PERI 696	Scholarly Activity in Periodontics	1.0	1.0	1.0
PERI 697A	Research		1.0	1.0
PERI 697B	Research (1.0-2.0)		2.0	1.0
PERI 698	Thesis			1.0
Totals		90.0	93.0	93.0

<b>Interdisciplinary</b>		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
GRDN 514	Introduction to Biomedical Research	4.0	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0	2.0
GRDN 622	Biomedical Science I	4.0	4.0	4.0
GRDN 632	Basic Microsurgery Techniques	2.0	2.0	2.0
REL_ 5__	Graduate-level Religion	3.0	3.0	3.0
Totals		17.0	17.0	17.0

**Clinical**

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		<b>Cert</b>	<b>MSD</b>	<b>MS</b>
PERI 725	Clinical Practice in Periodontics (1.0-6.0)	72.0	72.0	72.0
PERI 726	Clinical Practice in Implant Surgery (2.0)	24.0	24.0	24.0
Totals		—	—	—
<b>Overall Totals</b>		<b>107.0</b>	<b>110.0</b>	<b>110.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree program.

## **Prosthodontics, Advanced—SD**

Certificate (post-D.D.S.), M.S.D., M.S.

MATHEW T. KATTADIYIL, Director, Advanced Education Program

### **FACULTY**

Nadim Z. Baba

Charles J. Goodacre

B. Dan Hall

Joseph Y. Kan

Mathew T. Kattadiyil

S. Alejandro Kleinman

Jaime L. Lozada

W. Patrick Naylor

Paul L. Richardson

Douglass Roberts

Myron S. Winer

The School of Dentistry's Prosthodontics, Advanced Program is designed to increase the knowledge base and the clinical and laboratory skills of the student in all areas of prosthodontics. In addition to conventional fixed and removable prosthodontics, this program offers considerable experience in implant prosthodontics esthetic dentistry as well as an introduction to maxillofacial prosthetics, and the diagnosis and treatment of patients with temporomandibular dysfunction. Comprehensive interdisciplinary treatment-planning seminars with students and faculty of other advanced dental education programs are designed to prepare the student to interact with and coordinate the treatment of patients requiring advanced prosthodontic care.

The program begins on July 1 and requires thirty-six months in residence to complete the certificate requirements.

Following enrollment into the program, students may apply for acceptance to either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree track, in addition to the specialty certificate. The application must be supported by the program director. Admission into the M.S. or the M.S.D. degree track may extend the length of study; the additional time must also be in residence. The Graduate Record Examination (GRE) is required for those who elect to pursue the M.S. degree.

### **PROSTHODONTICS GOALS**

1. To educate students to become proficient in the delivery of prosthodontic care.
2. To train students to perform at the level of proficiency for the full range of clinical procedures that are considered an integral part of the specialty of prosthodontics; to utilize experienced, highly competent faculty who are recognized by the specialty; and to accomplish management of patients' prosthetic needs successfully so that the patients are satisfied, comfortable, and acceptably treated in a timely, efficient manner.
3. To educate students to perform research and practice teaching.

4. To encourage students to participate in prosthodontics dental teaching and to prepare them to continue to grow professionally and become emissaries for the School of Dentistry, the dental profession, and the specialty of prosthodontics.

Program link: <[llu.edu/dentistry/prostho/graduateprogram.page](http://llu.edu/dentistry/prostho/graduateprogram.page)>.

## APPLICATION PROCESS

The Prosthodontics, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education in prosthodontics program must also complete and submit a separate online application (<[llu.edu/central/apply](http://llu.edu/central/apply)>) directly to Loma Linda University.

This program also will accept direct applications from individuals who are not applying to other institutions through PASS.

## APPLICATION DEADLINE

Application for admission should be submitted by September 1 of the year prior to the summer of intended enrollment.

## TUITION AND FEES

Tuition for the 2011-2012 school year is \$12,558 per academic quarter. Additional fees for each academic quarter include: insurance, \$447, student services, \$197; and information technology support, \$195.

Major		Cert	MSD	MS
PROS 500	Prosthodontic Literature Review (2.0)	22.0	22.0	22.0
PROS 501	Removable Partial Prosthodontics Literature Review	2.0	2.0	2.0
PROS 502	Complete Denture Prosthodontics Literature Review	2.0	2.0	2.0
PROS 505	Patient Presentation Seminar (Prosthodontics, Implant, Perio) (1.0)	9.0	9.0	9.0
PROS 515	Practice Teaching in Prosthodontics (1.0-2.0)	2.0	2.0	2.0
PROS 525	Dental Materials Science	2.0	2.0	2.0
PROS 527	Clinical Application of Dental Materials	2.0	2.0	2.0
PROS 546	Occlusion and Morphology	2.0	2.0	2.0
PROS 547	Occlusion: Principles and Instrumentation	2.0	2.0	2.0
PROS 555	Removable Partial Prosthodontics	2.0	2.0	2.0
PROS 556	TMJ Function and Dysfunction	1.0	1.0	1.0
PROS 557	Advanced Removable Partial Prosthodontics	2.0	2.0	2.0
PROS 565	Complete Denture Prosthodontics	2.0	2.0	2.0
PROS 566	Advanced Complete Denture Prosthodontics	2.0	2.0	2.0
PROS 575	Fixed Partial Prosthodontics	2.0	2.0	2.0
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)	2.0	2.0	2.0
PROS 595	Maxillofacial Prosthetics	2.0	2.0	2.0
PROS 604	Literature Review in Implant Dentistry for Prosthodontists (2.0)	16.0	16.0	16.0
PROS 634	Diagnosis and Treatment Planning (2.0)	18.0	18.0	18.0
PROS 637	Geriatric Dentistry	1.0	1.0	1.0
PROS 696	Scholarly Activity in Prosthodontics	1.0	1.0	1.0

PROS 697A	Research		1.0	1.0
PROS 697B	Research (1.0-3.0)		2.0	1.0
PROS 698	Thesis			2.0
Totals		96.0	99.0	100.0

**Interdisciplinary**

		Cert	MSD	MS
GRDN 514	Introduction to Biomedical Research	4.0	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0	2.0
GRDN 601	Practice Management	2.0	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0	2.0
GRDN 622	Biomedical Science I	4.0	4.0	4.0
GRDN 623	Biomedical Science II	4.0	4.0	4.0
IMPD 533	Applied Radiology for Implant Dentistry	1.5	1.5	1.5
IMPD 561	Dental Bioengineering	2.0	2.0	2.0
IMPD 611	Introduction to Implant Dentistry	2.0	2.0	2.0
REL_ 5__	Graduate-level Religion	3.0	3.0	3.0
Totals		26.5	26.5	26.5

**Clinical**

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		Cert	MSD	MS
PROS 710	Clinical Practice of Prosthodontics (6.0)	66.0	66.0	66.0
Totals		—	—	—
<b>Overall Totals</b>		<b>122.5</b>	<b>125.5</b>	<b>126.5</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

## Dual Major Option

Applicants to the programs in implant dentistry, periodontics, and prosthodontics have the option to select an extended program (approximately four-and-a-half years in length) to pursue dual majors in two of these areas of study.

Students must complete all the requirements of each ADA-recognized specialty program (periodontics and prosthodontics) to be eligible for board certification. Dual credit—up to 100 units—may be awarded for courses required by the two programs.

Individuals who wish to pursue the dual major option must indicate such interest by completing separate applications to both programs. Applicants in one of the optional dual major programs must not only meet the admissions requirements of each program, but must also be admitted to the advanced education programs they designate.

Major		Cert	Cert
PERI 524	The Periodontium	2.0	
PERI 531	Periodontal Pathology (2.0)	10.0	
PERI 601	Periodontal Therapy (2.0)	12.0	
PERI 604	Current Periodontal and Implant Literature (2.0)	18.0	
PERI 605	Implant Literature Review (2.0)	4.0	
PERI 611	Introduction to Periodontics	2.0	
PERI 614	Implant Treatment Planning (2.0)	24.0	
PERI 624	Moderate Sedation in Periodontics	4.0	
PERI 634	Clinical Conference (1.0-2.0)	9.0	
PERI 654	Practice Teaching in Periodontics (1.0)	4.0	
PERI 696	Scholarly Activity in Periodontics	1.0	
PROS 500	Prosthodontic Literature Review (2.0)		22.0
PROS 501	Removable Partial Prosthodontics Literature Review		2.0
PROS 502	Complete Denture Prosthodontics Literature Review		2.0
PROS 505	Patient Presentation Seminar (Prosthodontics, Implant, Perio) (1.0)		9.0
PROS 515	Practice Teaching in Prosthodontics		2.0
PROS 525	Dental Materials Science		2.0
PROS 527	Clinical Application of Dental Materials		2.0
PROS 546	Occlusion and Morphology		2.0
PROS 547	Occlusion: Principles and Instrumentation		2.0
PROS 555	Removable Partial Prosthodontics		2.0
PROS 556	TMJ Function and Dysfunction		1.0
PROS 557	Advanced Removable Partial Prosthodontics		2.0
PROS 565	Complete Denture Prosthodontics		2.0
PROS 566	Advanced Complete Denture Prosthodontics		2.0
PROS 575	Fixed Partial Prosthodontics		2.0
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)		2.0
PROS 595	Maxillofacial Prosthetics		2.0
PROS 604	Literature Review in Implant Dentistry for Prosthodontists (2.0)		16.0
PROS 634	Diagnosis and Treatment Planning (2.0)		18.0

PROS 637	Geriatric Dentistry		1.0
PROS 696	Scholarly Activity in Prosthodontics		1.0
		Totals	90.0
			96.0

**Interdisciplinary**

		Cert	Cert
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 601	Practice Management		2.0
GRDN 609	Professional Ethics	2.0	2.0
GRDN 622	Biomedical Science I	4.0	4.0
GRDN 623	Biomedical Science II		4.0
GRDN 632	Basic Microsurgery Techniques	2.0	
IMPD 533	Applied Radiology for Implant Dentistry		1.5
IMPD 561	Dental Bioengineering		2.0
IMPD 611	Introduction to Implant Dentistry		2.0
REL_ 5__	Graduate-level Religion	3.0	3.0
		Totals	17.0
			26.5

**Clinical**

Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

		Cert	Cert
PERI 725	Clinical Practice in Periodontics (1.0-6.0)	72.0	
PERI 726	Clinical Practice in Implant Surgery (2.0)	24.0	
PROS 710	Clinical Practice of Prosthodontics (6.0)		66.0
		Totals	—
			—
		<b>Overall Totals</b>	<b>107.0</b>
			<b>122.5</b>

## Master of Science in Dentistry (M.S.D.) Degree, Advanced—SD

Graduate students and residents enrolled in certain advanced education programs are eligible to apply for and be awarded a Master of Science in Dentistry (M.S.D.) degree, if they fulfill all of the following:

### ADMISSION PROCESS

1. The following minimum requirements have been established for admission to the M.S.D. degree program:  
Admissions requirements
  - Cumulative grade-point average (G.P.A.) of 3.0
  - Approval by the program director
  - Academic record of scholastic competence
  - Demonstrated professionalism and integrity
2. A candidate for the M.S.D. degree must complete a Loma Linda University online Application for Admission and a Part I (Application for Admission for the Master of Science in Dentistry [M.S.D.] degree) form. Part I form can be found in the advanced education section of Blackboard. Part I form—which can be completed online (<llu.edu/dentistry/gradprograms>) and printed for signatures—must be accompanied by a research protocol approved by the candidate's Research Guidance Committee (RGC) and reviewed by the School of Dentistry Research Committee.
3. Part I form must be signed by the applicant's program director and the Research Guidance Committee (RGC) members.
4. The completed Loma Linda University application, Part I form, and approved protocol are then reviewed for approval by the associate dean for advanced education to ensure all admissions requirements have been met.
5. Accepted applicants will receive a letter of admission from the associate dean for advanced education. They must acknowledge acceptance of their admission in writing to the Office of Advanced Dental Education.

### DEGREE REQUIREMENTS

1. Students must perform scholarly activity as defined by the program director. Programs may differ in how this requirement is met in order to afford directors the opportunity to align such activity with the experience, background, and interest of each student and of the program faculty as a worthy and achievable goal is pursued. The nature of the scholarly activity will be defined in Part II (Statement of Completion for the Master of Science in Dentistry [M.S.D.] degree) of the degree application form as submission of a formatted, publishable manuscript or an optional thesis. Should a program elect to require a thesis, the format will be prescribed by the associate dean for advanced education in conjunction with the corresponding program director.
2. Students must successfully complete all the course requirements of the certificate curriculum, with additional units in research for the master's degree curriculum (see individual program descriptions at <llu.edu/dentistry/gradprograms>). Candidates complete sections I and II of Part II form to indicate their anticipated degree completion date.

3. Students who do not complete the publishable paper while completing the curriculum will have one year from their curriculum end date to fulfill this requirement.
4. A publishable paper and public presentation of the research are required. The manuscript must be in a format approved by the respective program director.
5. Students who do not complete the publishable paper while completing the curriculum will have one year from their curriculum end date to fulfill this requirement.
6. After conducting an internal degree audit, the program director completes and signs Part II of the application to verify that all requirements for the M.S.D. degree have been met.
7. The associate dean for advanced education reviews the student's file and academic record (final degree audit) before signing Part II form, signifying approval to award the Master of Science in Dentistry (M.S.D.) degree.

The M.S.D. degree is not offered by the advanced education program in orthodontics and dentofacial orthopedics.

## Master of Science (M.S.) Degree, Advanced—SD

Graduate students and residents enrolled in certain advanced education programs are eligible to apply for and be awarded a Master of Science (M.S.) degree, if they fulfill all of the requirements stated below.

### ADMISSION PROCESS

1. The following minimum requirements have been established for admission to the M.S. degree curriculum:  
Admissions requirements
  - Minimum cumulative grade-point average (G.P.A.) of 3.0
  - GRE verbal and quantitative percentile rankings must equal or exceed the 100th percentile. Furthermore, neither the verbal nor quantitative percentile ranking may be lower than the 35th percentile for that section. Only GRE scores earned within the past five years will be accepted.
  - An analytical writing score of 4.0 or higher
  - Approval by the program director
  - Academic record of scholastic competence
  - Demonstrated professionalism and integrity
2. An applicant to the M.S. degree must complete a Loma Linda University online Application for Admission, as well as a Form A (Petition for Admission to Candidacy). The online application is open to students already enrolled in a certificate curriculum. Form A is found on Blackboard and can be completed online and printed for signatures. This form must be accompanied by a research protocol approved by the applicant's Research Guidance Committee (RGC) and reviewed by the School of Dentistry Research Committee.
3. Form A must be signed by the applicant's program director and Research Guidance Committee (RGC) members.
4. The completed Loma Linda University application, Form A, and the approved protocol are then reviewed for approval by the associate dean for advanced education to ensure that all admissions requirements have been met.
5. Accepted applicants will receive a letter of admission from the associate dean for advanced education. The prospective student must acknowledge acceptance of his/her admission in writing to the Office of Advanced Dental Education.

### DEGREE REQUIREMENTS

1. Applicants must undertake scholarly activity/research as defined by each program director. Programs may differ on how this requirement is met in order to afford directors the opportunity to align such activity with the experience, background, and interest of each student and of the program faculty as a worthy and achievable goal is pursued.
2. Students must successfully complete all course requirements of the certificate curriculum, with additional units in research for the master's degree (see individual program descriptions online). Also, students must submit a completed Form C, Petition for Graduation, to indicate their anticipated degree completion date.

3. A thesis and a public thesis defense are required. The thesis must be in a format approved by the thesis editor in the Faculty of Graduate Studies (FGS).
4. Students who do not complete the thesis during their program will have five years from their program end date to fulfill this requirement.
5. After conducting a degree audit, the program director completes and signs Form D, Statement of Completion of Requirements for Degree, verifying that all requirements for the M.S. degree have been met.
6. After reviewing the student's file and academic record (final degree audit), the associate dean for advanced education signs Form D, indicating approval of the award of the Master of Science (M.S.) degree. Form D is then submitted to the Faculty of Graduate Studies (FGS) for final approval and degree issuance.

## School of Medicine

Dean's Welcome

School Foundations

History

Our mission

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Pharmacology—M.S., Ph.D.

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## Dean's Welcome

Thank you for your interest in Loma Linda University School of Medicine. This Catalog will provide you with detailed information about our people, programs, and facilities; as well as our requirements and expectations. Commitment to our University's mission and medical education remains our first priority.

In addition to our medical school program, we offer a broad spectrum of graduate education opportunities, including combined degrees programs and a wide range of postgraduate specialty residencies and fellowships; as well as a program of continuing medical education for physicians beyond their formal academic years.

Our faculty are committed to ensuring that those we educate will develop the skills and intellectual curiosity needed for success as lifelong learners in a changing world.

We welcome your interest.



Roger Hadley, M.D.  
Dean, School of Medicine



## School Foundations

### HISTORY

The professional curriculum in medicine was first offered at Loma Linda University in 1909. Ten decades later, the School of Medicine has kept pace with the rapid growth of knowledge and technology. Nearly 10,000 students have graduated from the school and have practiced in all corners of the earth, fulfilling the University's mission—"To make man whole."



### Since 1909

The first two years of medical school were always taught on the Loma Linda campus. From 1913 to the mid-1960s, the third and fourth years were taught in Los Angeles at what is now White Memorial Medical Center and at nearby Los Angeles County Hospital (now Los Angeles County/USC Medical Center). Construction of Loma Linda University Medical Center (inclusive of clinical, teaching, and research facilities) allowed the entire four-year curriculum to be offered on and near the Loma Linda campus, beginning with school year 1966-1967.

### OUR MISSION

The mission of the School of Medicine is to continue the healing and teaching ministry of Jesus Christ, "To make man whole" (Luke 9:6).

### Preparing the physician

Our purpose is the formation of Christian physicians, providing whole person care to individuals, families, and communities. Fulfilling this responsibility requires—

#### Education

Creating an environment in which medical students, graduate students, and residents will acquire the knowledge, skills, values, and attitudes appropriate to Christian health professionals and scholars.

**Research**

Cultivating an atmosphere of inquiry and discovering new routes to wholeness through basic and clinical research.

**Service**

Providing timely access to cost-effective, safe, comprehensive, whole person care for all patients, without regard for their circumstances or status.

**Developing the whole person**

The Christian view of wholeness holds that the needs of patients go beyond the healing of the body, and that the development of students involves more than the training of the mind. We are dedicated to promoting physical, intellectual, social, and spiritual growth in our faculty and our students; and to transforming our daily activities into personal ministries.

**Reaching the world**

Providing whole person care wherever the opportunity arises, participating with the world community in the provision of local medical education, providing international physicians and scientists the opportunities for professional interaction and enrichment, sharing the good news of a loving God as demonstrated by the life and teachings of Jesus Christ—these are the goals of the students, faculty, and graduates of Loma Linda University School of Medicine.

## General Regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III gives the general setting for the programs of each school and outlines the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

## Application and Admissions

The program admissions committees of the University intend that an applicant to any of the schools is qualified for the proposed curriculum and is capable of profiting from the educational experience offered by this University. The admissions committees of the school accomplish this by examining evidence of scholastic competence, moral and ethical standards, life experience, and significant qualities of character and personality.

### THE STUDY OF MEDICINE

Preparing for a career in medicine, students should quest for a broad understanding in the major areas of knowledge—the natural sciences, the behavioral sciences, and the humanities—which assists them in the process of learning throughout their life.

In selecting students, the Admissions Committee of the School of Medicine looks for applicants who are best suited to fulfill the mission of the school and to successfully practice medicine. The school desires students who demonstrate the ability to learn independently, to think critically, and to articulate clearly—both orally and in written form—their ideas and opinions. It is important that students in the School of Medicine demonstrate excellent interpersonal skills and show evidence of sensitivity to the needs of humanity.

The Admissions Committee of the School of Medicine puts forth considerable effort to ensure that an applicant is qualified for medical school. The applicant's credentials are reviewed to assess scholastic performance. The committee also looks for prerequisite qualities of character and personality, potential for self-direction and the use of discriminating judgment, and dedication to the ideal of service to society.



### GENERAL ENTRANCE INFORMATION

A total of 85 semester (128 quarter) units of credit from an accredited college is required for acceptance by the School of Medicine. Preference is given, however, to college graduates. Credit must be presented for the following subjects:

**Semester/Quarter hours**

General biology or zoology with laboratory–8/12  
General or inorganic chemistry with laboratory–8/12  
Organic chemistry with laboratory–8/12  
Physics with laboratory–8/12  
English equivalent to satisfy baccalaureate degree requirement  
Religion as required by the college attended

**Required**

Keyboard and computer skills

**Recommended**

Introductory course in basic statistics  
Biochemistry, strongly recommended  
Science credits earned in professional schools (e.g., allied health professions, business, dentistry, nursing, or pharmacy) do not fulfill requirements for admission to medicine. CLEP and Pass/Fail performances are not acceptable for the required courses.  
The Medical College Admission Test (MCAT) is required. Scores older than three years will not be considered.

**APPLICATION PROCEDURE AND ACCEPTANCE**

It is important to know the specifics of the application process and to begin the application process well in advance of the date of anticipated (or desired) entrance to medical school.

**Where to write**

The School of Medicine is a member of the American Medical College Application Service (AMCAS). Applications must be submitted through AMCAS. Their application is available on the Web at <[aamc.org/students/applying/amcas](http://aamc.org/students/applying/amcas)>.

**AMCAS deadline**

Application should be made directly to AMCAS between June 1 and November 1 for entry in August of the following year.

**Fees**

The AMCAS fee is required each time an application is submitted. An additional fee to the School of Medicine is required with each supplementary application.

**Procedure**

The application procedure is as follows:

1. The applicant submits a formal application to AMCAS, with fee and requested transcripts. The applicant's verified data are forwarded to the School of Medicine by AMCAS.
2. When the application is received from AMCAS, Loma Linda University School of Medicine requests completion of an online supplementary application. The prospective student should provide evidence of exposure to health care through personal involvement or in other ways, giving evidence of an informed decision confirming the applicant's decision to become a physician.

3. After the supplementary application and letters of reference have been submitted and reviewed, the applicant may be invited for an interview.
4. The information submitted by the applicant through AMCAS, the supplementary application, the letters of reference, and the interview reports are then evaluated by the Admissions Committee of the School of Medicine. This committee determines whether an applicant is accepted or rejected. All applicants are notified of the final decision of the Admissions Committee regarding their application. Acceptance notices are sent to regular applicants beginning December of the year preceding admission to the School of Medicine, continuing until the class is filled.
5. The accepted applicant sends a written acceptance of his/her offer of admission as a student, together with a \$100 acceptance deposit, by the announced date (about thirty days after the notification of acceptance). This deposit is refundable until May 15 of the year in which the student has been accepted for entry.

In summary, the Admissions Office requires the following:

- Verified AMCAS application.
- Loma Linda University School of Medicine supplementary application and \$75 application fee.
- Appraisal of the applicant's character, ability, and suitability for a medical career by persons knowledgeable about the applicant's past performance.
- A preprofessional recommendation packet, if available, from the applicant's undergraduate college/university.
- Applicant's availability for interviews, should an offer for an interview be extended.

### **Pre-entrance health requirement and health coverage**

Exposure to patients takes place during year one of medical education. Because of this, it is necessary for students to have immunizations against certain infectious diseases. In order to complete registration for the first academic quarter, student must give evidence in the form of physician records or college health serve records that they have met immunization requirements. Students without proper verification will be required to receive immunizations, and the charges will be billed to the students' account. The pre-entrance requirements may be found at <[llu.edu/ssweb/documents/immunizations.pdf](http://llu.edu/ssweb/documents/immunizations.pdf)>. Please note: Tdap is now a requirement instead of Td. Students are also required to have certain injections and immunizations repeated at various intervals during their enrollment. These include an annual skin test for tuberculosis and influenza vaccine.

Medical students will be required to have flu shots on an annual basis in order to meet the requirements of clinical sites where students will be working. These will be given by the Student Health Center at the beginning of each flu season.

In addition, students are expected to have routine dental and medical care and elective surgery attended to before registering for medical school.

All School of Medicine students are provided with health coverage through the University's Department of Risk Management. The Student Health Plan remains in effect for students who are regularly enrolled, provided they register and pay tuition and fees on time each quarter. Since the maximum benefit of the plan (as of the time this CATALOG went to press) is \$100,000 and does not cover preexisting illnesses or dental or optical care, students are encouraged to maintain a personal, current policy that covers preexisting illnesses and/or has a higher benefit. A student who does not have health

insurance coverage for his/her spouse/children will need to purchase it through the University's Department of Risk Management at the time of registration. Government regulations prohibit the use of student loan funds to provide medical insurance or services for a student's spouse or children.

Students who wish to review a copy of the current student health plan or have further questions about the plan should call Risk Management (909/558-4386). Annual tuition also covers the cost of disability insurance. Details will be presented during orientation or upon request.

### **EARLY DECISION PROGRAM**

A highly qualified applicant to medical school may apply between June 1 and August 1 and be guaranteed a decision by October 1. During that period of time, the applicant may not apply to any other medical school; and if the applicant is accepted at Loma Linda University, s/he is committed to that decision. If the applicant is not accepted by October 1, s/he may apply to any school desired. An applicant not accepted by October 1 will be considered in the regular applicant pool. On the AMCAS application, the applicant indicates that s/he is an early decision applicant and agrees to comply with the constraints of that program.

### **DEADLINES**

- June 1 to November 1 (of the year preceding the year of admission to the School of Medicine) is the period for submission of application for the first year class.
- August 1 (of the year preceding the year of admission) is the deadline for submission of application under the Early Decision Program.
- September 1 (of the year preceding the year of admission) is the deadline for submission of the supplementary application for the Early Decision Program.
- November 15 (of the year preceding the year of admission) is the deadline for receipt of the supplementary application for the regular applicant pool.
- May 15 (of the year of admission) is the date beyond which the acceptance deposit of \$100 is not refundable.

### **TRANSFER**

Under exceptional circumstances, the school accepts applicants into the junior year who are transferring from other U.S. medical schools. Such transfers must be for compelling circumstances and are subject to availability of space and approval of the Loma Linda University School of Medicine Dean's Administrative Committee.

The University reserves the right to require of an applicant satisfactory completion of written or practical examinations in any course for which transfer credit is requested. Successful completion of USMLE Step I is required.

### **LOMA LINDA UNIVERSITY SCHOOL OF MEDICINE TECHNICAL STANDARDS**

Loma Linda University School of Medicine candidates for the M.D. degree must have abilities and skills of five varieties, including: observation; communication; motor; intellectual (conceptual, integrative, and quantitative); behavioral and social. Technological compensation can be made for some handicaps in certain areas, but a candidate should be able to perform in a reasonably independent manner without the use of a surrogate.

**OBSERVATION:** The student must be able to observe demonstrations and experiments in the basic sciences, including but not limited to physiologic and pharmacologic demonstrations in animals,

microbiologic cultures, and microscopic studies of microorganisms and tissues in normal and pathologic states. A student must be able to observe a patient accurately at a distance and close at hand. Observation necessitates the functional use of the senses of vision, touch, hearing, and somatic sensation. It is enhanced by the functional use of the sense of smell.

**COMMUNICATION:** A student must be able to speak, to hear, and to observe patients in order to elicit information; describe changes in mood, activity, and posture; and perceive nonverbal communications. A student must be able to communicate effectively and sensitively with patients, colleagues, and other personnel. Communication includes not only speech but also reading and writing. The student must be able to communicate effectively and efficiently in oral and written form with all members of the health care team.

**MOTOR:** Students should have sufficient motor function to elicit information from patients by palpation, auscultation, percussion, and other diagnostic maneuvers. A candidate should be able to do basic laboratory tests (urinalysis, CBC, etc.); carry out diagnostic procedures (proctoscopy, paracentesis, etc.); and read EKGs and X-rays. A candidate should be able to execute motor movements reasonably required to provide general care and emergency treatment of patients. Examples of emergency treatment reasonably required of physicians are cardiopulmonary resuscitation, the administration of intravenous medication, the application of pressure to stop bleeding, the opening of obstructed airways, the suturing of simple wounds, and the performance of simple obstetrical maneuvers. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.

**INTELLECTUAL-CONCEPTUAL INTEGRATIVE AND QUANTITATIVE ABILITIES:** These abilities include measurement, calculation, reasoning, analysis, and synthesis. Problem solving, the critical skill demanded of physicians, requires all of these intellectual abilities. In addition, the candidate should be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures.

**BEHAVIORAL AND SOCIAL ATTRIBUTES:** A student must possess the emotional stability required for full utilization of his/her intellectual abilities; the exercise of good judgment; the prompt completion of all responsibilities attendant to the diagnosis and care of patients; and the development of mature, sensitive, and effective relationships with patients. Students must be able to tolerate physically taxing workloads and to function effectively under stress. They must be able to adapt to changing environments, to display flexibility, and to learn to function in the face of uncertainties inherent in the clinical problems of many patients. Compassion, integrity, honesty, concern for others, interpersonal skills, interest, and motivation are all personal qualities that are expected of Loma Linda University School of Medicine students.

## Student Life

The information on student life contained in this CATALOG is brief. The Loma Linda University *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies; and is available on the University Web site. Students are expected to familiarize themselves with the contents of the *Student Handbook* and to abide by its policies. Additional information regarding policies specific to a particular school or program within the University is available from the respective school. Students who have questions about the *Student Handbook* should contact the associate dean for student affairs.

### STUDENT ORGANIZATIONS

The purpose of the Loma Linda University School of Medicine student organizations is to:

1. Create an avenue through which students may seek constructive solutions to problems and enhance their educational experience;
2. Develop ways to further the mission of the School and add to the medical school experience by organizing social, spiritual, and service activities;
3. Engage students in issues related to medical education and health care through participation in regional and national professional organizations.

At registration into the School of Medicine, students automatically become members of the Loma Linda University School of Medicine Student Association (SMSA).

Student organizations that operate within the School of Medicine and that are represented on the School of Medicine Senate include the following:

- The American Medical Association-Medical Student Section (AMA-MSS), Loma Linda University chapter
- The American Medical Student Association (AMSA), Loma Linda University chapter
- The Christian Medical and Dental Association (CMDA)
- Hands-On Wholeness (HOW)
- The Organization of Student Representatives (OSR) to the Association of American Medical Colleges (AAMC)
- Student National Medical Association, Loma Linda University chapter

Two additional student organizations are based in the School of Medicine but are not required to have representatives at Senate meetings. These service-focused organizations, which involve students from a number of schools within the University, are as follows:

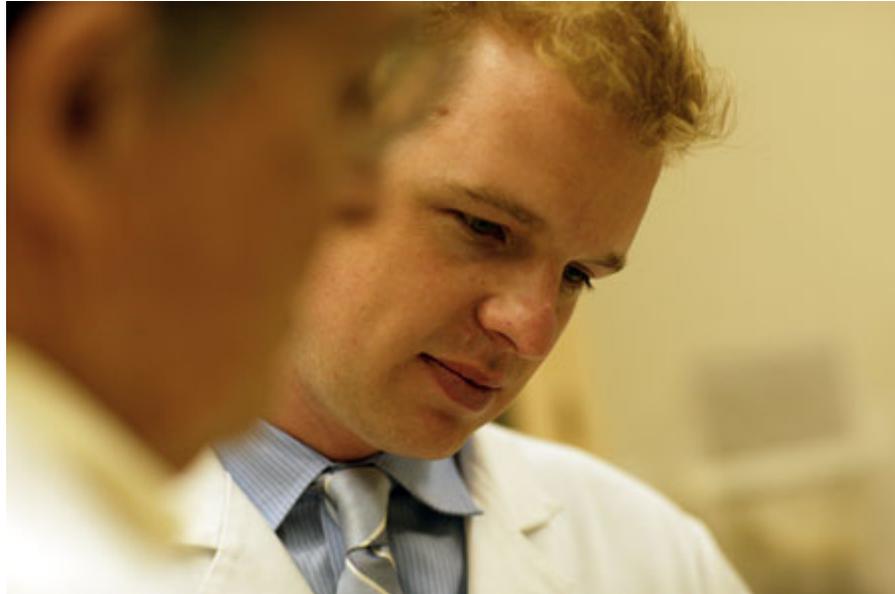
- the Healthy Neighborhoods Project
- the Mission Interest Group

Loma Linda University students are represented by peers at the San Bernardino County Medical Society, the California Medical Association, the American Medical Association, the American Medical Student Association, the Association of American Medical Colleges, and the Student National Medical Association.

# Curriculum

## WHOLE PERSON FORMATION

Personal and professional growth for the student in medicine is the focus of the disciplines in the school, the faculty in the School of Medicine, and the School of Religion. Courses and content are offered to emphasize biblical, ethical, and relational aspects of the physician's personal and professional development. The core for whole person formation—14 quarter units of religion and ethics—is provided during the first three years of the medicine curriculum.



## LEARNING OUTCOMES FOR MEDICAL STUDENT EDUCATION

### Outcome I

Through the study of organ systems, students will develop a knowledge base in the basic sciences essential for advancement to the next phase of their medical education.

### Outcome II

Students will develop the clinical skills that are integral to the safe and competent practice of medicine.

### Outcome III

Students understand and apply the University philosophy "to make man whole" into their personal and professional lives. (Wholeness means the lifelong, harmonious development of the physical, intellectual, emotional, relational, cultural, and spiritual dimensions of a person's life—unified through a loving relationship with God and expressed in generous service to others.)

### Outcomes IV

Students will develop diagnostic reasoning and analytic problem-solving skills in order to assimilate information and establish appropriate diagnoses and treatment plans.

**Outcome V**

Students will develop effective interpersonal and communication skills, including sensitivity to those from diverse backgrounds (e.g., cultural, ethnicity, gender, generational, socioeconomic and religious).

**Outcome VI**

Students will develop professionalism in excellence and scholarship, accountability and responsibility, and altruistic behaviors.

**Outcome VII**

Students will integrate ethical and Christ-centered principles of conduct into their personal and professional lives.

**Outcome VIII**

Students will integrate their knowledge, skills, and behaviors through a spectrum of active learning activities.

**Outcome IX**

Students will acquire the knowledge and skills needed to foster self-direction for lifelong learning.

## Academic Information

The academic progress of each student is monitored by the Academic Review Committee. Specific policies for handling misconduct (academic or nonacademic) are published in the *Student Handbook* 2009-2010 available at <llu.edu/central/handbook>.

### COMMUNICATIONS

Communications to the medical student regarding academic and clinical assignments, scholarship opportunities, and other important information are routed through the Office of the Dean. The student mailboxes and bulletin board are located in the medical center. It is the responsibility of students to check their email and mailboxes and the bulletin board daily.

### REQUIRED SUPPLIES

#### Microscope

The student is expected to have access to a satisfactory compound microscope (usually one rented from the school) that meets the following requirements:

- The microscope shall be no older than fifteen years.
- The lenses shall be in good condition and shall include scanning and oil-immersion objectives.
- The equipment shall include an Abbe condenser with rack-and-pinion adjustment, an iris diaphragm, and a mechanical stage.

#### Textbooks

Students are required to purchase the textbooks adopted by the School of Medicine Curriculum Committee.

#### Instruments

Students are required to purchase the instruments adopted by the physical diagnosis course.

### PRACTICES AND REGULATIONS

#### Length of academic residence

To fulfill the degree requirement pertaining to length of academic residence, it is the usual policy that the student must be registered full time for the Doctor of Medicine degree course work during the entire junior and senior academic years.

#### Course exemptions

Students who seek exemption from registering for courses that they took prior to entering the School of Medicine must qualify for the exemption by passing a comprehensive examination covering the course material in question.

Should the student qualify, in lieu of the regular course, s/he will be required to participate in an advanced program that may include additional studies, research activities, and/or teaching. A written paper will be required from all students completing the advanced program.

The course director, the senior associate dean of medical student education, and the student will work together to determine the content of the advanced program. Full tuition, equivalent to that of the regular program, will be charged.

### **Examinations**

Students are required to take examinations at the scheduled time. Students who arrive more than 15 minutes late to an examination will be denied entrance. *Students who arrive after any other student has left the examination for any reason will not be permitted to take the examination.* For National Board subject examinations, students will be denied entrance once the examination has started.

Examinations will not be extended beyond the announced termination time, even if a student arrives late.

### **Missed examinations**

Students who have an "excused" absence for one day of a three-day *midterm* examination will receive their two-day score, and the weight of each missed examination will be added to the weight of the cumulative final examination for each course. If the final examination for the course is an NBME Subject Examination, then the average of the in-house examinations for that course will be substituted for the missed examination. Students who miss two or three days of a three-day midterm examination are required to take a makeup examination within two weeks of the missed examination dates at a date and time scheduled by the course director. Makeup examinations may differ in content and/or format from the missed examinations. In addition, course directors may require other remediation at their discretion.

Should a student miss an in-house *final* examination because of an "excused" absence, arrangements must be made with the course directors to make up for the missed examinations. The course directors, at their discretion, may opt to have the student take an examination that is different in format, content or length from the final examination that was administered to the class.

Should a student miss a *National Board Subject Examination* because of an "excused" absence, the student will be allowed one opportunity to take and pass the subject examination upon completing all other course work for that year at the end of the academic year. Arrangements for the make-up examination must be made through the Office of Medical Student Education.

### **Conditions to be met for an "excused" absence**

In order to have an "excused" absence, the student must get a written excuse from the Office of the Senior Associate Dean for Medical Student Education prior to the administration of the test in question. Students missing examinations for health reasons must provide written documentation of their illness from Student Health Center or another examining physician. Whether or not this documentation is an adequate excuse for missing a test will be left to the discretion of the senior associate dean for medical student education. Once a request for an examination excuse has been received, the Office of the Senior Associate Dean for Medical Student Education will determine whether or not the student will be required to make up the examination at a later date (generally within a week of the missed examination) or have the final examination count an extra amount proportional to the missed examination. Under no circumstances are students allowed to take examinations early.

In the event of a bona fide emergency, where prior approval is not feasible, the Office of the Senior Associate Dean for the Medical Student Education (909/558-4255) must be contacted as soon as possible. Failure to do so will result in unexcused absence.

Students who miss examinations without prior approval from the Office of the Senior Associate Dean for Medical Student Education have an "unexcused" absence. As a result, the student will receive a zero for the missed examination(s). Missing more than one in examination in any course or combination of courses could result in a student having to repeat the course(s) during the next academic year.

### **Grading policy**

Course directors submit grades at the end of the course, indicating the overall evaluation of the student's performance in the course. The grade reflects the success or failure of the student in meeting the objectives of the course in terms of knowledge, skills, attitudes, and values. The grade will be recorded as SATISFACTORY if the student exceeded the minimum requirements for overall performance. The grade assigned will be UNSATISFACTORY if the student did not meet the minimum requirements for overall performance. The grade assigned will be MARGINAL SATISFACTORY if the student met but did not exceed the minimum requirements for overall performance.

Copies of complete promotion and retention policies are distributed to each class at orientation.

### **Class standing**

Class standing is determined by the Office of the Senior Associate Dean for Medical Student Education and is based on student performance on in-house, faculty-generated examinations and on NBME subject examinations.

### **Promotion**

Promotion is contingent on satisfactory academic performance. Both cognitive and noncognitive evaluations of academic performance—as well as assessment of personal suitability to assume the responsibilities of the medical profession—are utilized in making promotion decisions. The Academic Review Committee of the School of Medicine periodically reviews student performance and progress and recommends promotion, retention, or dismissal on the basis of the overall academic record. The *Student Handbook* contains additional details regarding the criteria used by the Academic Review Committee for promotion decisions.

### **Decelerated program-freshman curriculum**

Students who experience academic difficulty during their first year of medical school may be assigned to a decelerated program with a reduced load. This reassignment will occur within the first two weeks following the second midterm examination when, in the judgment of the dean's office, it appears the student will be unlikely to pass the year while carrying out a full load.

### **Academic probation**

Students whose cumulative academic record at the end of any academic year is less than satisfactory are placed on academic probation.

### **Withdrawal**

To withdraw from a course(s), the student must meet with the Senior Associate Dean for Medical Student Education to determine educational appropriateness, and file a Change of Program form. To completely withdraw from school, the student must complete the online withdrawal form. These forms should be completed and submitted on the last day of class attendance. The date of withdrawal used in calculating tuition refunds will be the date on which the properly completed form is submitted to the Office of University Records.

### **USMLE Steps I and II policy**

States vary in the number of times a student can attempt USMLE examinations and still be eligible for licensure. A significant number of states allow no more than three attempts. The school has defined its own limits for number of attempts allowed. School policy requires students enrolled in the Loma Linda University School of Medicine to pass Step I in no more than three attempts.

Students must complete the clinical course work required for graduation within three years of starting the clinical curriculum; they are permitted a maximum of four sequential attempts to pass Step II of the USMLE. The student's first attempt at passing Step II of the USMLE must take place only after s/he has satisfactorily passed all junior clerkships and prior to his/her completion of all required senior clinical course work.

A student who has failed Step II but who has completed all course curriculum requirements must remain enrolled in the School of Medicine as a directed study student until s/he has either passed Step II of the USMLE or failed Step II of the USMLE for the fourth time. During this directed study, the student will be charged tuition.

### **DOCTOR OF MEDICINE DEGREE REQUIREMENTS**

The School of Medicine requires that a candidate for a degree or certificate from the school must have met the following requirements for the Doctor of Medicine degree:

- Completed all requirements for admission.
- Attended an accredited medical school for four academic years, the last two of which must have been spent at this school.
- Completed honorably all requirements of the curriculum, including specified attendance, level of scholarship, length of academic residence, and credit units.
- Completed additional special examinations covering any or all subjects of the medical curriculum, as may be required.
- Successfully completed USMLE examinations (Steps I and II), as specified—both clinical skills and knowledge components.
- Given evidence of moral character, of due regard for Christian citizenship, and of consistent responsiveness to the established aims of the University and of the school.
- Discharged financial obligations to the University.

The candidate is required to participate in graduation exercises upon completion of the academic program. If the candidate is out of sequence with his/her current class but would like to participate in the commencement exercises, s/he must have completed a minimum of three months of the required senior clerkships, i.e., medicine, pediatrics, family medicine or surgery subinternship, preventive and community medicine, intensive care and emergency medicine by April 1 of the year of graduation. Consent for the student to be absent, granted by the president of the University, is contingent on the recommendation of the dean to the president.

The families and friends of graduates are invited to be present at the official conferring of degrees service.

### **DOCTOR OF MEDICINE/ORAL AND MAXILLOFACIAL SURGERY DEGREE REQUIREMENTS**

The Doctor of Medicine/Oral and Maxillofacial Surgery Program (M.D./OMS) is designed to provide an opportunity for qualified dentists to obtain the Doctor of Medicine degree in a customized, three-year

period. Clinical surgical health care delivery is emphasized. The content of the program conforms to the Standards of the Commission on Accreditation and is designed to prepare the oral surgeon for certification by the American Board of Oral and Maxillofacial Surgery. Oral and maxillofacial surgery residents begin their residency program on the OMS service. They subsequently enter the second year at Loma Linda University School of Medicine with advanced standing. The residents then complete the second, third, and fourth years of medical school. The third year of the M.D./OMS curriculum consists of required clerkships in acute care, emergency medicine, a subinternship in ENT, and whole person care. An additional 30 units of electives, which include anesthesia and oral and maxillofacial surgery, complete the final year of the medical program. The graduate then enters a one-year general surgery internship, followed by two years of oral and maxillofacial surgery residency.

## **GRADUATE COMBINED DEGREES PROGRAMS**

Loma Linda University is committed to fostering the investigative skills of its medical students. Students interested in pursuing careers in academic medicine and medical research may wish to enroll in *one of the combined degrees programs.*

### **Combined degrees (M.D./M.S. or M.D./Ph.D.)—SM/GS**

The M.D./Ph.D. combined degrees program is available through the School of Medicine. It includes many of the features of the Medical Scientist Program. Students in the combined degrees program complete the first two years of the standard medical curriculum. This is followed by three or more years of graduate course work and research to qualify for a Ph.D. degree, or at least one year for an M.S. degree, before commencing the last two years of the medical school curriculum—the clinical training—or the Doctor of Medicine degree. Majors are offered in anatomy, biochemistry, microbiology and molecular genetics, physiology, and pharmacology.

For the M.D./M.S. and M.D./Ph.D. combined degrees programs, the prerequisites and Graduate Record Examination requirements are similar to those described for the Medical Scientist Program, except that biochemistry is not required.

### **Medical Scientist Program (M.D./Ph.D.)**

Loma Linda University is committed to fostering the investigative skills of its medical students. Students interested in pursuing careers in academic medicine and medical research may wish to enroll in the Medical Scientist Program.

The Medical Scientist Program is designed to develop a student's independence and competence as an investigative scientist and clinician. It provides students with a broad educational base for the practice of medicine and medically related research. The program is administered by the School of Medicine in cooperation with the Faculty of Graduate Studies. (See Medical Scientist Program in the combined degrees programs after the general information for the School of Medicine.)

## **LICENSING EXAMINATIONS**

### **National**

The graduate who holds credentials from the USMLE may be granted a license by endorsement of the examining board of most states. Additional requirements made by some states are given in a pamphlet that may be obtained from the Office of the Dean or from the Federation of State Medical Boards, 400 Fuller Wiser Road, Suite 300, Euless, TX 76039-3855.

## GRADUATE SPECIALTY MEDICAL EDUCATION RESIDENCIES

Loma Linda University Medical Center sponsors a variety of accredited residency programs. These include residencies in anesthesiology, pediatric anesthesiology, anesthesiology critical care medicine, adult cardiothoracic anesthesiology, dermatology, procedural dermatology, emergency medicine, pediatric emergency medicine, family medicine (including rural track and combined family medicine-preventive medicine), internal medicine, pediatrics, cardiology, gastroenterology, nephrology, pulmonary/critical care medicine, rheumatology, neurology, child neurology, clinical neurophysiology, neurological surgery, obstetrics and gynecology, ophthalmology, orthopaedic surgery, otolaryngology, clinical and anatomic pathology, pediatrics, critical care pediatrics, neonatology, physical medicine and rehabilitation, pain management, plastic surgery, preventive medicine, occupational medicine, psychiatry, radiation oncology, radiology, neuroradiology, pediatric radiology, interventional vascular radiology, surgery, thoracic surgery, pediatric surgery, and general vascular surgery. Additional nonaccredited fellowships are available.

Graduate physicians wishing to apply for entrance into these programs should contact the director of the program.

Graduate dentists who seek residencies in dental anesthesia, endodontics, oral implantology, orthodontics, pediatric dentistry, periodontics, and prosthodontics should apply directly to the School of Dentistry.

## POSTGRADUATE TRAINING

In harmony with the needs of medicine today, the curriculum leading to the Doctor of Medicine degree is planned with the assumption that all students will take standard postgraduate training in one of the fields of medicine. This means serving as a resident for a minimum of three years in a hospital approved for this training by the Council of Medical Education and Hospitals of the American Medical Association.

The Office of the Senior Associate Dean for Medical Student Education supplies information and assistance for the arrangement of residencies. Since the school participates in the National Residency Matching Program, selection through this means constitutes approval by the School of Medicine.

## CONTINUING MEDICAL EDUCATION

Recognizing the imperative of lifelong learning for professionals, the School of Medicine supports a program of continuing medical education for physicians beyond their formal postgraduate years. The Office of Continuing Medical Education is accredited by the Accreditation Council for Continuing Medical Education to provide Category I continuing medical education credit for physicians. Course offerings include weekly, bi-weekly, and monthly School of Medicine departmental grand rounds and a large number of one-day and multiday conferences and workshops that are presented locally and nationally for School of Medicine faculty, alumni, and practicing physicians within the geographic area in which the conferences are presented.

For more information please write to:

Mindy Morrell, Director of Continuing Medical Education  
Loma Linda University School of Medicine  
11234 Anderson Street, Room A537  
Loma Linda, CA 92354  
909/558-4968  
909/558-0330 fax  
<mmorrell@llu.edu>

## **CLINICAL FACILITIES**

Clinical instruction takes place primarily at Loma Linda University Medical Center, which includes the Loma Linda University Children's Hospital, Loma Linda University East Campus Specialty Hospital, Loma Linda University Heart and Surgical Hospital, Faculty Medical Offices (FMO), and the Loma Linda University Behavioral Medicine Center. Additional local training sites include the Jerry L. Pettis Memorial Veterans Medical Center, Riverside County Regional Medical Center, and White Memorial Medical Center. Also utilized are Arrowhead Regional Medical Center; Kaiser Permanente; and Kettering Medical Center in Dayton, Ohio.

## **THE INSTRUCTIONAL RESOURCES**

### **Loma Linda University Medical Center (LLUMC)**

Loma Linda University Medical Center is a major teaching center serving San Bernardino and Riverside counties. In addition to its large population of referred patients, the medical center is also the Level 1 trauma center for the region and is a tertiary care center for high-risk obstetrics and neonatal intensive care. An extension houses the Loma Linda Cancer Center and the Proton Treatment Center for cancer therapy. Patients in the medical center are available for medical student, resident, and fellowship training.

### **Loma Linda University Children's Hospital**

Loma Linda University Children's Hospital provides a single, centralized location where newborns, infants, and children can receive comprehensive medical care. Being seen at a comprehensive center for children's health care assures parents and their children that all aspects of the child's health will be closely monitored and understood. Loma Linda University Children's Hospital staff—pediatric nurses, physicians, surgeons, anesthesiologists, radiologists, and other professionals—work together to assure that every patient receives the highest possible quality of medical attention.

The organization of a children's hospital also means that the hospital staff is chosen from among people who are specially trained and have a deep interest in children's health care. Every Loma Linda University Children's Hospital employee is highly skilled in dealing with children and has made the care of children a personal priority. The children's hospital is known as "the place for little faces."

### **Loma Linda University East Campus Specialty Hospital**

East Campus Specialty Hospital (formerly Loma Linda Community Hospital) is a teaching resource for students in family medicine, physical medicine and rehabilitation, orthopaedics, and clinical neuroscience. In addition, it serves as the primary inpatient training site for house staff in family medicine.

### **Loma Linda Heart and Surgical Hospital**

Loma Linda University Heart and Surgical Hospital is a specialty hospital that will serve as a teaching resource in the specialties of urology, gynecology, otolaryngology, and cardiovascular disorders.

### **Faculty Medical Offices**

The Faculty Medical Offices (FMO) include facilities for multiple specialties and an outpatient surgery suite that handles approximately 30 percent of all the surgery done at the Loma Linda University Medical Center. The FMO is utilized for students' outpatient experience in nearly all specialties.

**Jerry L. Pettis Memorial Veterans Medical Center**

The Jerry L. Pettis Memorial Veterans Medical Center serves a wide geographic area and cares for a large population of veterans. Outpatient clinics and inpatient wards are available for student and resident teaching. The residency programs are integrated with the Loma Linda University Medical Center and are under the supervision of the faculty of the School of Medicine.

**Riverside County Regional Medical Center**

The Riverside County Regional Medical Center is located ten miles southeast of Loma Linda in the city of Moreno Valley. The patient population reflects an inner-city profile with a large concentration of urgent medical and surgical, trauma, obstetrics, and pediatrics cases. Patients are available for student, resident, and fellowship training.

**Loma Linda University Behavioral Medicine Center**

Loma Linda University Behavioral Medicine Center—a freestanding, full-service psychiatric hospital—opened in early 1991. Loma Linda University Behavioral Medicine Center offers adult, child, adolescent, and chemical dependency services—including inpatient and partial hospitalization. Special emphasis is given to services that provide the integration of Christian faith with psychiatric care for patients desiring such.

**White Memorial Medical Center**

White Memorial Medical Center is located approximately sixty miles west of Loma Linda in the city of Los Angeles. The patient population reflects an inner-city profile with a large concentration of urgent medical and surgical, trauma, obstetrics, and pediatrics cases. Patients are available for student, resident, and fellowship training.

## Research Centers

Basic science investigation is advanced, and patient treatment is enhanced through the groundbreaking research conducted at the four centers of the School of Medicine.

### **CENTER FOR HEALTH DISPARITIES AND MOLECULAR MEDICINE**

The objective of the Center for Health Disparities and Molecular Medicine is to use cutting-edge molecular genetics and cellular techniques to study the influence of the augmented state of cellular oxidative stress (ASCOS) and inflammatory pathways on cell death and survival as it pertains to chronic health disparities diseases such as cancer and diabetes. The education mission of the center is to train a diverse group of graduate students, medical students, and postdoctoral scientists who are involved in health disparities research in the Loma Linda University School of Medicine. The community outreach objective of the center is to develop community trust and establish strong partnerships and outreach for community-based participatory research and education.

### **CENTER FOR PERINATAL BIOLOGY**

The primary research focus of the Center for Perinatal Biology is investigation of developmental fetal and neonatal biology and physiology. The majority of the funding to support this research is derived from competitive grants awarded by the National Institutes of Health; additional funding is provided by the National Science Foundation, the American Heart Association, the March of Dimes Birth Defects Foundation, and other agencies. The biomedical scientists in this internationally renowned research center also teach basic science courses in the School of Medicine; as well as graduate courses in their disciplines: physiology/pharmacology, gynecology/obstetrics, pathology/human anatomy, biochemistry/microbiology, and pediatrics.

For graduate students, postdoctoral fellows, and beginning investigators—who spend from two-to-four years in research and training in fields related to developmental physiology—the center is an ideal environment. A number of visiting scholars from other universities also work in the center during sabbaticals or other interims.

### **NEUROSURGERY CENTER FOR RESEARCH, TRAINING, AND EDUCATION**

The Neurosurgery Center for Research, Training, and Education has as its primary focus the improvement of patient care by conducting translational research. These goals are met by the research and development of new biologically and technologically advanced diagnostic procedures, minimally invasive surgical techniques, and innovative instrumentation. The center functions in collaboration with many well-known institutions, such as George Mason University, UCLA, Rensselaer Polytechnic Institute and Wadsworth Center in New York.

The center has been a recipient of a five-year NIH competitive grant to determine the role of iron perturbations in metabolism in the pathogenesis of Alzheimer's disease, as well as grants for proteomic study of schizophrenia. The center's multidisciplinary work involves the Departments of Biochemistry, Radiology, Cell and Molecular Biology, Radiobiology, Psychiatry, Geriatric Medicine, and Biostatistics. The center is also interested in the development of new hemostatic agents that involve the control of hemorrhage. To this end, it has developed new procoagulants and surgical devices in collaboration with industry. The center works in close collaboration with industrial resources for both testing and development of new surgical instrumentation. The director and associate director of the center hold numerous international and United States patents on surgical instruments and other devices.

- The center offers opportunities for predoctoral and postdoctoral training in both biochemistry and cell biology, particularly as this training relates to neurodegenerative disease.
- The center utilizes a computerized data bank, which is currently accessing cases of mild cognitive impairment, in an effort to identify determinants that lead to the development of Alzheimer's disease.
- The center is proud of its student (medical, predoctoral) mentoring. Two recent Ph.D. degree recipients in biochemistry worked in its biochemistry laboratory. Each was selected for the Dean's Award as "Best Graduate Student."

The Neurosurgery Center for Research, Training, and Education plays an important role in multidisciplinary research, interfacing with many other departments within the school; as well as with outside institutions—such as the National Institutes of Health and foreign medical institutions, including the Freie University of Berlin and Nanjing University.

## Financial Information

The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy regarding reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs regarding these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees on the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### GENERAL FINANCIAL PRACTICES

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Previous accounts with other schools or this University must have been settled.

### VETERAN'S BENEFITS

A student eligible to receive veteran's benefits under the current enactment should —

- Contact the Office of University Records within the first week following registration, and
- Have a certificate of eligibility sent to the Office of Admissions and Records at Loma Linda University.

In order for a medical student to be eligible to receive educational assistance from the Department of Veteran's Affairs, s/he must maintain a satisfactory grade for all required courses in the School of Medicine for the year that s/he is currently enrolled. If the student's grades reflect unsatisfactory progress, the student will not be certified for the Department of Veteran's Affairs educational benefits until his/her probationary status has been removed and s/he is certified to be in good and regular standing.

Under Title 38 of the U.S. Code, Loma Linda University is approved for the training of veterans and other eligible persons. Information regarding eligibility for any of these programs may be obtained by calling 1-888/GIBILL1. Students receiving veteran's benefits but who fail for three consecutive quarters to maintain the required cumulative grade-point average (G.P.A.) for graduation will have their benefits interrupted, and the Veterans Administration (VA) office will be notified.

Application for benefits must be made directly to the VA and may be done via the Web. The Office of University Records serves as the certifying official for Loma Linda University. Students should contact the certifying official prior to their first enrollment certification. For more information, open links to the VA Web site at <llu.edu/central/students/veterans.page>.

### SCHEDULE OF CHARGES

#### Tuition

\$42,584	Full time
\$10,645	Full time, per quarter

#### Fees

\$774	Per quarter: student services, health insurance, etc.
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**Supplies and instruments (estimated)**

\$3,200	Per school calendar year
\$900	First-year medical equipment

**LIVING EXPENSES (ESTIMATED)**

\$11,700	Dormitory student, per school calendar year (ten months)
\$8,450	Off-campus student living with parent or relative, per school calendar year (ten months)
\$15,200	Community student providing own housing, per school calendar year (ten months)

**ON- AND OFF-CAMPUS STUDENT HOUSING**

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) for housing information and a housing application form.

**SPECIAL CHARGES 2011-2012**

\$75	Supplemental application (nonrefundable), in addition to AMCAS fee
\$100	Acceptance deposit
\$50	Late payment fee
cost	Health care items not covered by health fee or insurance
cost	Library fine or loss, parking fine, property breakage or loss
cost	Health coverage for spouse and family
\$50	Late registration (beginning first day after published registration date)
\$25	Returned check fee

**AWARDS****Bernard D. Briggs Award**

The Bernard D. Briggs Award is presented to an outstanding medical student entering the field of anesthesiology who exhibits the dedication, enthusiasm, and commitment of the visionary physician and distinguished mentor for whom it is named.

**Robert F. Chinnock Award**

The Robert F. Chinnock Award is presented annually to a student who has demonstrated outstanding performance in clinical and academic pediatrics.

**Daniel D. Comstock Award**

The Daniel D. Comstock Award is given annually to the senior student with the most distinguished performance in internal medicine. Selection is based on scholarship, interest in science, skill, devotion to patient care, and personal attributes of dependability and integrity—as demonstrated by the physician, Daniel D. Comstock, for whom the award is named.

**The Departmental Advising Award**

The Departmental Advising Award is given annually by the dean's office to the clinical department that has provided outstanding career counseling and extraordinary support to help students achieve their career aspirations.

**Donald E. Griggs Award**

The Donald E. Griggs Award is presented annually to a senior student selected for meritorious scholarship and service—the highest grade in the clinical rotations of medicine—reflecting those qualities demonstrated by the physician and teacher for whom the award is named.

**David B. Hinshaw, Sr., Award**

The David B. Hinshaw, Sr., Award is presented annually to a senior student who has demonstrated outstanding qualities of leadership and scholarship and who is entering a categorical surgery residency program with the intention of pursuing a career in general surgery.

**Guy M. Hunt Award**

The Guy M. Hunt Award is presented annually by the Department of Neurology to a senior student who combines outstanding academic achievement and the spirit of gentle caring that was exemplified by Dr. Hunt.

**Harold J. Hoxie Award**

The Harold J. Hoxie Award is presented by the Department of Medicine to a senior medical student whose meritorious scholarship, exceptional performance in medicine with emphasis in research, and service reflect those qualities demonstrated by the physician and teacher for whom the award is named.

**Benjamin Kovitz Award**

The Benjamin Kovitz Award is presented to a senior medical student who has demonstrated qualities of leadership and scholarship in the field of psychiatry.

**Walter P. Ordelheide Award**

The Walter P. Ordelheide Award is given annually by the Department of Family Medicine to a senior student who has demonstrated outstanding scholarship and leadership, and who has fostered the promotion and advancement of family medicine.

**President's Award**

The President's Award, established in 1960, is presented annually in recognition of superior scholastic attainment and active participation in the student community, within the framework of Christian commitment. One recipient is selected from each school of the University.

**Society for Academic Emergency Medicine Award**

The Society for Academic Emergency Medicine Award is presented to the senior medical student who has demonstrated excellence in the specialty of emergency medicine.

**Varner J. Johns, Jr., Award**

The Varner J. Johns, Jr., Award is given to a graduating senior who is recognized as an outstanding student with the potential of becoming a future faculty member in the Department of Medicine.

**Alumni Association—Herber Award**

The School of Medicine Alumni Association Award is given annually to students who demonstrate outstanding leadership in furthering the mission of Loma Linda University School of Medicine.

**Wil Alexander Whole Person Care Award**

The Wil Alexander Whole Person Care Award recognizes a senior medical student who, during the clinical years, has demonstrated to his/her peers and colleagues a growing excellence in the physical, mental, emotional, spiritual, and relational care of his/her patients as part of the art of medical practice.

**Alpha Omega Alpha Honor Society**

Fourth-year students are recommended for membership in the national honor medical society, Alpha Omega Alpha. Membership is determined based on scholastic, professional, and personal performance. The School of Medicine was granted a charter for establishing the Epsilon Chapter on April 1, 1957.

**Roger W. Barnes Award**

The Roger W. Barnes Award is presented to a senior student who has demonstrated to an unusual degree the qualities of compassion, kindness, and humility—as exhibited by the physician and teacher for whom the award is named.

**Harold F. Ziprick Award**

The Harold F. Ziprick Award is presented annually by the Department of Gynecology and Obstetrics to a senior student in recognition of overall academic achievement and clinical performance in gynecology and obstetrics, as demonstrated by the physician and teacher for whom the award is named.

**Distinguished Student in Emergency Medicine Award**

The Distinguished Student in Emergency Medicine Award is given by the department to a senior student who is devoted to emergency medicine and committed to pursuing it as a career.

**Distinguished Student in Preventive Medicine Award**

The Distinguished Student in Preventive Medicine Award is given to a senior student who has demonstrated exceptional performance in preventive medicine and is committed to pursuing it as a career.

**Philip H. Reiswig Award**

The Philip H. Reiswig Award is presented to a senior student entering the field of orthopaedic surgery who exhibits the dedication, enthusiasm, and commitment of the physician-leader for whom it is named.

**ADDITIONAL REQUIREMENTS**

For additional policies governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

# Anatomy—SM

M.S., Ph.D.

KENNETH R. WRIGHT, Program Coordinator

## FACULTY

### *PRIMARY APPOINTMENTS*

Denise L. Bellinger

Resa Chase

Brad A. Cole

Bertha C. Escobar-Poni

Michael A. Kirby

Anissa Y. LaCount

Pedro B. Nava

Kerby C. Oberg

Kimberly J. Payne

Kenneth R. Wright

### *SECONDARY AND ADJUNCT APPOINTMENTS*

Marino De Leon

William M. Hooker

Zhongrong Luo

Paul J. McMillan

Steven M. Yellon

## MISSION

It is the mission of the Loma Linda University basic science programs to further the teaching and healing ministry of Jesus Christ by fostering scholarly excellence leading to the discovery, integration, and dissemination of biomedical knowledge.

## STUDENT LEARNING OUTCOMES

1. Students will demonstrate a broad knowledge of the biomedical sciences.
2. Students will demonstrate subject mastery in molecular, cellular, and integrative aspects of anatomy.
3. Students will interpret the current literature in anatomy.
4. Students will make original contributions to the body of biomedical knowledge.
5. Students will demonstrate an understanding of the principles of scientific and professional ethics.
6. Students will understand the process of applying for external funding.\*

\* This objective is not applicable to M.S. degree students.

## GENERAL INFORMATION

The basic sciences of the School of Medicine offer graduate programs with emphases in anatomy, biochemistry, microbiology, pharmacology, and physiology. The Ph.D. degree curriculum is designed to

prepare students for a career in independent research and teaching in an academic or biotechnology setting. Students may enter any of these five Ph.D. degree curricula by applying to the Integrated Biomedical Graduate Studies Program. After completing a common first-year core curriculum, students will select a program and a mentor for the completion of their studies, during which advanced courses and laboratory work allow them to fully develop an area of research interest and expertise. Students usually rotate through up to three research laboratories before selecting a research advisor.

The M.S. degree course of study provides education appropriate for technicians involved in biomedical research and for medical technologists seeking career advancement. A pathway to combined M.D./Ph.D. degrees is also offered.

Graduate course work in anatomy provide opportunities for qualified students to study all aspects of human morphology from both didactic and investigative points of view. Study and research on other species and in other biomedical disciplines may be included in the student's curriculum. Students are introduced to research methods, both through scientific literature and the laboratory, while working on a significant research problem. Students acquire experience in scientific communication by participating in seminars, writing critical reviews, and reporting results of research experience either in thesis/dissertation form or as publishable/published papers.

### **M.S. AND PH.D. DEGREES**

The School of Medicine Division of Anatomy offers study in the Anatomy Program leading to the Master of Science and the Doctor of Philosophy degrees. These degrees provide a broad biomedical background while allowing the student to fully develop a special area of research interest. The Master of Science degree provides content appropriate for persons preparing to teach at the secondary level or in related professional school areas, or for persons intending to pursue careers as research technicians. The Doctor of Philosophy degree is designed to prepare the graduate for a career in independent research and teaching in university, clinical, biotechnological, or government environments. In addition to technical skills, doctoral degree students are expected to develop creativity and independence.

### **Combined degrees**

Combined degrees (Ph.D./M.D. and M.S./M.D.) options are also available. The combination of an M.S. degree with a professional degree provides additional content and research experience as a background for postgraduate medical or dental education. The combination of a Ph.D. degree with a professional degree prepares the student for a future in academic medicine or dentistry—combining research, teaching, and clinical practice.

The combined degrees are described at the end of Section III in this CATALOG.

### **Prerequisite**

Applicants must have a bachelor's degree from an accredited U.S. college or the equivalent from a foreign university. Foreign applicants must have their transcripts evaluated by an accredited agency for equivalency to a U.S. degree. Entrance requirements include a full year of each of the following undergraduate courses: general biology, general chemistry, organic chemistry, and general physics. Upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended. Calculus is also recommended. Results of the general test of the Graduate Record Examination (GRE) must be submitted. Applicants whose first language is not English must submit scores from the TOEFL (Test of English as a Foreign Language). The program reserves the right to decide on the equivalence of courses presented by the applicant.

### **First year curriculum (Ph.D. degree)**

The first-year curriculum includes a course sequence taught by interdisciplinary faculty that integrates all the disciplines of the biomedical basic science areas—moving from molecules through cellular mechanisms to integrated systems. In addition, a supplemental course covers research-related topics—such as scientific communication and integrity, information handling and statistics, as well as successful grant writing. Students learn of new developments in the biomedical sciences through weekly seminars, and they gain presentation skills of their own in a weekly student presentation seminar series. During the subsequent years, formal courses continue to broaden and integrate into a meaningful whole an understanding of the clinical consequences of cellular events.

### **Religion requirement**

Students in the Master of Science (M.S.) degree curriculum are required to complete one 3-unit, graduate-level religion class (RELT 617 Seminar in Religion and the Sciences). Students in the Ph.D. degree curriculum are required to complete three graduate-level religion courses of 3 or more units each. These must include RELT 617; as well as RELE 525 Ethics for Scientists and RELR 588 Personal and Family Wholeness. A course in biblical studies (RELT 588, RELT 559, RELT 560, RELT 564, or RELT 565) may be substituted for either the ethical or relational course.

### **Research units**

A student will at all times have registration in research units. An IP will be assigned until the student registers for new units. The units should be spread out over the course of time it takes to complete thesis or dissertation research satisfactorily. An IP may not be carried for longer than five quarters.

### **ANATOMY—M.S.**

A minimum of 45 units is required for the M.S. degree, as detailed in the table below. Two options, a research track and a course work track, are available. Students must maintain a G.P.A. of at least 3.0. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

#### **Course work track**

Under this plan, the student fulfills the total unit requirement by taking additional electives. The student takes a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

#### **Research track**

Under this plan, the student fulfills the core requirements and also carries out research that culminates in a thesis. The student must pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

### **ANATOMY—PH.D.**

For the Ph.D. degree, students must complete a minimum of 88 units, as detailed in the table below, and must maintain a G.P.A. of at least 3.0. In addition, doctoral students are required to pass both written and oral comprehensive examinations in order to advance to candidacy. They must successfully defend their dissertation before their guidance committee before being awarded the Ph.D. degree. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

		MS		
		Course- work	MS Research	PhD
<b>Basic science core</b>				
IBGS 501	Biomedical Communication and Integrity	2.0	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0	2.0
IBGS 503	Biomedical Grant Writing			2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I			8.0
IBGS 512	Cellular Mechanisms and Integrated Systems II			8.0
IBGS 513	Cellular Mechanisms and Integrated Systems III			8.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club			2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club			2.0
Totals		4.0	4.0	34.0

		MS		
		Course- work	MS Research	PhD
<b>Major</b>				
ANAT 516	Neuroscience GS	6.0	6.0	6.0
ANAT 541	Gross Anatomy GS	10.0	10.0	10.0
ANAT 542	Cell Structure and Function GS	5.0	5.0	5.0
ANAT 544	Human Embryology Lecture	2.0	2.0	2.0
Totals		23.0	23.0	23.0

		MS		
		Course- work	MS Research	PhD
<b>Seminars</b>				
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1.0)		1.0	2.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar (1.0)	—	—	—
	Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.			
Totals		1.0	2.0	3.0

		MS		
		Course- work	MS Research	PhD
<b>Religion</b>				
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
Totals		3.0	3.0	9.0

		MS		
		Course- work	MS Research	PhD
<b>Electives</b>				
ANAT ____	Graduate Anatomy Elective	14.0		
	Electives in anatomy/embryology			
Totals		14.0	—	—

Research/Dissertation or Thesis		MS		
		Course- work	MS Research	PhD
ANAT 697	Research (1.0-8.0)		13.0	15.0
IBGS 696	Research Rotations (1.0)			2.0
Totals		—	13.0	17.0
<b>Overall Totals</b>		<b>45.0</b>	<b>45.0</b>	<b>86.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column shows the total units required for the degree curriculum.

## Biochemistry – SM

M.S., Ph.D.

PENELOPE DUERKSEN-HUGHES, Program Coordinator

### FACULTY

#### *PRIMARY APPOINTMENTS*

Danilo Boskovic

Penelope Duerksen-Hughes

Maria Filippov

Valery Filippova

William H. R. Langridge

Jonathan W. Neidigh

Christopher Perry

Lawrence C. Sowers

Nathan Wall

R. Bruce Wilcox

#### *SECONDARY AND ADJUNCT APPOINTMENTS*

Carlos A. Casiano

Shin Tai Chen

John R. Farley

Hansel M. Fletcher

Daila Gridley

Clifford Herrmann (Emeritus)

David A. Hessinger

Mark S. Johnson

Wolff M. Kirsch

Kin-Hing William Lau

Thomas Linkhart

Subburaman Mohan

Andre Obenaus

William J. Pearce

Michael Pecaut

John J. Rossi

Lawrence B. Sandberg

Donna D. Strong

Barry L. Taylor

Jon E. Wergedal

Kangling Zhang

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6. Students will understand the process of applying for external funding.\*

\* This objective is not applicable to M.S. degree students.

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The basic sciences of the School of Medicine offer graduate programs with emphases in anatomy, biochemistry, microbiology, pharmacology, and physiology. The Ph.D. degree curriculum is designed to prepare students for a career in independent research and teaching in an academic or biotechnology setting. Students may enter any of these five Ph.D. degree programs by applying to the Integrated Biomedical Graduate Studies Program. After completing a common first year core curriculum, students will select a program and a mentor for the completion of their studies, during which advanced courses and laboratory work allow the student to fully develop an area of research interest and expertise. Students usually rotate through up to three research laboratories before selecting a research advisor.

The M.S. degree course of study provides education appropriate for technicians involved in biomedical research and for medical technologists seeking career advancement. A pathway to combined M.D./Ph.D. degrees is also offered.

The School of Medicine's Division of Biochemistry offers curricula leading to the Doctor of Philosophy and Master of Science degrees. The core curriculum provides a broad background in biochemistry-related issues and approaches. Advanced courses allow each student to fully develop an area of interest. Research strengths of the department include: cancer biology, DNA damage and repair, measurement of thyroid hormones, coagulation, neurobiology, peptide structure, vaccine development, and radiation biology.

## M.S. AND PH.D. DEGREES

The School of Medicine's Division of Biochemistry offers study in the biochemistry program leading to the Master of Science and the Doctor of Philosophy degrees. These degree curriculums provide a broad biochemical background while allowing the student to fully develop a special area of research interest. The Master of Science degree provides content appropriate for persons preparing to teach at the secondary level or in related professional school areas, or for persons intending to pursue careers as research technicians. The Doctor of Philosophy degree is designed to prepare the graduate for a career in independent research and teaching in university, clinical, biotechnological, or government environments. Doctoral degree students are expected to develop creativity and independence, in addition to technical skills.

## Combined degrees

Combined degrees (Ph.D./M.D. and M.S./M.D.) options are also available. The combination of an M.S. degree with a professional degree provides additional content and research experience as a background

for postgraduate medical or dental education. The combination of a Ph.D. degree with a professional degree prepares the student for a future in academic medicine or dentistry—combining research, teaching, and clinical practice.

The combined degrees are described at the end of Section III in this CATALOG.

### **Prerequisite**

Applicants must have a bachelor's degree from an accredited U.S. college or the equivalent from a foreign university. Foreign applicants must have their transcripts evaluated by an accredited agency for equivalency to a U.S. degree. Entrance requirements include a full year of each of the following undergraduate courses: general biology, general chemistry, organic chemistry, and general physics. Upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended. Calculus is also recommended. Results of the general test of the Graduate Record Examination (GRE) must be submitted. Applicants whose first language is not English must submit scores from the TOEFL (Test of English as a Foreign Language). The program reserves the right to decide on the equivalence of courses presented by the applicant.

### **First-year curriculum (Ph.D. degree)**

The first-year curriculum includes a course sequence taught by interdisciplinary faculty that integrates all the disciplines of the biomedical basic science areas—moving from molecules through cellular mechanisms to integrated systems. In addition, a supplemental course covers research-related topics—such as scientific communication and integrity, information handling and statistics, as well as successful grant writing. Students learn of new developments in the biomedical sciences through weekly seminars, and they gain presentation skills of their own in a weekly student presentation seminar series. During the subsequent years, formal courses continue to broaden and integrate into a meaningful whole an understanding of the clinical consequences of cellular events.

### **Religion requirement**

Students in the Master of Science (M.S.) degree curricula are required to complete one 3-unit, graduate-level religion class (RELT 617 Seminar in Religion and the Sciences). Students in the Ph.D. degree curriculum are required to complete three graduate-level religion courses of 3 or more units each. These must include RELT 617; as well as RELE 525 Ethics for Scientists and RELR 588 Personal and Family Wholeness. A course in biblical studies (RELT 588, RELT 559, RELT 560, RELT 564, or RELT 565) may be substituted for either the ethical or relational course.

### **Research units**

A student will at all times have registration in research units. An IP will be assigned until the student registers for new units. The units should be spread out over the course of time it takes to complete thesis or dissertation research satisfactorily. An IP may not be carried for longer than five quarters.

### **BIOCHEMISTRY—M.S.**

A minimum of 45 units is required for the M.S. degree, as detailed in the table below. Two options, a research track and a course work track, are available. Students must maintain a G.P.A. of at least 3.0. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

### Course work track

Under this plan, the student fulfills the total unit requirement by taking additional biochemistry electives. The student takes a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

### Research track

Under this plan, the student fulfills the core requirements and also carries out research that culminates in a thesis. The student must pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

### BIOCHEMISTRY—PH.D.

For the Ph.D. degree, students must complete a minimum of 77 units, as detailed in the table below, and must maintain a G.P.A. of at least 3.0. In addition, doctoral students are required to pass both written and oral comprehensive examinations in order to advance to candidacy. They must successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

Basic science core		MS		
		Course work	MS Research	PhD
IBGS 501	Biomedical Communication and Integrity	2.0	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0	2.0
IBGS 503	Biomedical Grant Writing			2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I	8.0	8.0	8.0
IBGS 512	Cellular Mechanisms and Integrated Systems II	8.0	8.0	8.0
IBGS 513	Cellular Mechanisms and Integrated Systems III	8.0	8.0	8.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2.0	2.0	2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2.0	2.0	2.0
Totals		32.0	32.0	34.0

Major		MS			
		Course work	MS Research	PhD	
BCHM ____	Graduate Biochemistry Elective	Elective courses in biochemistry. 12 units required.	7.0		12.0
Totals		7.0	—	12.0	

		MS		
		Course work	MS Research	PhD
<b>Seminars</b>				
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1.0)		1.0	2.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar (1.0)	—	—	—
	Totals	1.0	2.0	3.0

		MS		
		Course work	MS Research	PhD
<b>Religion</b>				
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
	Totals	3.0	3.0	9.0

		MS		
		Course work	MS Research	PhD
<b>Research/Dissertation or Thesis</b>				
BCHM 697	Research (1.0-10.0)		6.0	15.0
IBGS 696	Research Rotations (1.0)			2.0
	Totals	—	6.0	17.0
	<b>Overall Totals</b>	<b>43.0</b>	<b>43.0</b>	<b>75.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree curriculum.

# Medical Scientist—SM

M.D. and Ph.D.

LAWRENCE C. SOWERS, Ph.D., Program Director

## OBJECTIVES

Loma Linda University is committed to fostering the investigative skills of its medical students. Students interested in pursuing careers in academic medicine and medical research may wish to enroll in one of the combined degrees programs.

The Medical Scientist Program is designed to develop a student's independence and competence as an investigative scientist and clinician. It provides students with a broad educational base for the practice of medicine and medically related research. The program is administered by the School of Medicine in cooperation with the Faculty of Graduate Studies.

## PROGRAM DESCRIPTION

The program is designed to attract students who are energized by doing research and want to contribute substantially to this enterprise.

Students enter this combined degrees program through the graduate program. In the first year, students participate in a new and revised, scientifically integrated program that includes biochemistry, molecular biology, physiology, pharmacology, and anatomy. While in the first year, students also rotate through the laboratories of selected faculty members.

In the second year, students increase their involvement with individual laboratory projects while continuing to complete graduate course requirements. Students in selected areas may also be asked to serve as teaching assistants for graduate or medical classes. Students pursuing the combined degrees will also be involved with joint basic science and clinical meetings and conferences with the aim of understanding the interrelationships between laboratory-based and clinical research.

Upon demonstration of laboratory success, as indicated by completion of a first-author manuscript, the student will continue on to the traditional first two years of the medical school curriculum. It is anticipated that the amount of time required to demonstrate laboratory success will be two to three years. Successful students who have acquired essential laboratory skills should continue their affiliation with the host laboratory and continue research progress as time permits while in the medical school curriculum.

Upon successful completion of the first two years of the medical curriculum and Step 1 of the USMLE, students will begin a series of rotations between the clinical sciences and the research laboratory. During these later years, students will complete all of the standard clinical rotations and continue progress on laboratory projects. It is the intent of this program that students will acquire the requisite skills needed for a successful career at the interface of laboratory-based and clinical research.

## PROGRAM ADMISSION

Admission into the Medical Scientist Program is competitive and requires evidence that the student is likely to develop into a successful medical scientist. The student must submit separate applications to the School of Medicine for both the M.D. and the Ph.D. degree programs, and meet the stated admissions requirements for each of these programs. The application package for the Ph.D. degree requires scores for the general test of the Graduate Record Examination. Both programs must accept the student's scores before s/he is admitted to the Medical Scientist Program. Students entering the M.D./Ph.D. combined

degrees program who determine that a research career is inappropriate may elect to complete the M.D. degree program independently. Students entering the Ph.D. degree program who desire a career in academic medicine may choose to apply for admission to the M.D./Ph.D. combined degrees program at a point after their entry into the Ph.D. degree program; however, the standard medical school application process will be required at that point.

## FINANCIAL ASSISTANCE

Financial assistance to students in the Medical Scientist Program may provide:

1. Cost-of-living stipends during those periods in which students are most directly involved in graduate education. The amount of the stipend is equivalent to that available to Ph.D. degree students in the basic science graduate programs.\*
2. Tuition waivers for all graduate program course work.
3. Tuition deferment for the freshman and sophomore years of the M.D. degree curriculum. When a student completes an M.S. or Ph.D. degree, tuition deferred from the freshman and sophomore years is canceled.
4. Tuition waiver for both the junior and senior years of the M.D. curriculum, upon completion of a Ph.D. degree.

M.D./Ph.D. degree students are ordinarily expected to complete their Ph.D. degree before beginning the third year of medical school. Students who have not completed the Ph.D. degree may apply for a tuition deferment for their junior year of the medical curriculum, and, in unusual cases, for the first quarter of their senior year. Applications for tuition deferment beyond the first two years must be approved by the student's dissertation committee and signed by the dissertation advisor, the associate dean for basic sciences, and the dean of the School of Medicine. Under no circumstances will a student be granted a tuition deferment or be allowed to register for the last two quarters of medical school until s/he has finished the requirements for the Ph.D. degree. If a student withdraws from the Ph.D. degree program his/her tuition deferments will be converted to a loan. Completion of the M.D. degree terminates the student's participation in the Medical Scientist Program and ends the availability of tuition waiver. Any tuition deferments then in force will convert to loan obligations at that time.

*\* Stipends from the School of Medicine will be awarded for the first two years of the graduate program, provided that the student makes satisfactory academic progress and remains in good and regular standing. Stipends covering study beyond the first two years should ordinarily be obtained from the individual laboratories or departments in which the student conducts research.*

# Biomedical Sciences—SM

Certificate (postbaccalaureate)

KENNETH WRIGHT, Ph.D., Program Coordinator

## FACULTY

Students accepted into the postbaccalaureate certificate Biomedical Sciences Program enroll in basic science courses with first-year medical students. Faculty responsible for teaching students in the Biomedical Sciences Program will be those who teach these first-year basic science courses.

The certificate program enables students to complete their studies with one academic year of full-time commitment. The program is intended to provide postbaccalaureate experience in the rapidly changing area of biomedical sciences. As such, it will either augment other career choices—such as high school teaching, patent law, or biotechnology management—or improve the preparation for professional training in medicine.

## ADMISSION

Applicants to the Biomedical Sciences Program must satisfy the same requirements as those applying to the medicine program at Loma Linda University; that is, they will have completed a baccalaureate degree (or its equivalent) with a course of study that includes a year each of general biology, general chemistry, organic chemistry and general physics. Applicants are required to take the Medical College Acceptance Test (MCAT) with no score less than 6 and an aggregate score greater than 20.

## COURSE OF STUDY

Students are currently required to complete 36 units selected from courses indicated by the program coordinator. These courses will include 3 units of religion, with the remaining units selected from the first-year medical curriculum.

The curriculum followed by the biomedical sciences certificate students will be developed in consultation with the program director, and will typically include gross anatomy, physiology, and either cell structure and function or biochemistry and neuroscience. In addition, students are asked to enroll in a critical thinking course, and in one religion course. The total number of units for which students enroll during a school year is approximately 36.

In special circumstances, students might be able to transfer course credits obtained in the Biomedical Sciences Program to a master's degree program in the basic sciences. In order to transfer credit to a master's degree program, the student must obtain a letter grade of B or better in a given course.

Although several of the courses may share lecture experience and tests with the Doctor of Medicine degree program, such courses will not be transferred to the M.D. degree program; and a student subsequently admitted to the M.D. degree program should expect to take, and pay for, the normal M.D. degree curriculum.

**First Year, Summer Quarter**

Units

ANAT 550	Gross Anatomy/Embryology	1.0
BCHM 511	Medical Biochemistry, Molecular Biology, and Genetics I	1.0
MDCJ 504	Cell Structure and Function	2.0
PHSL 521	Medical Physiology GS I	1.0
STCJ 501	Critical Thinking	4.0
Totals		9.0

**Autumn Quarter**

Units

ANAT 551	Medical Gross Anatomy/Embryology II	5.0
BCHM 512	Medical Biochemistry, Molecular Biology, and Genetics II	3.0
MDCJ 505	Cell Structure and Function	3.0
PHSL 522	Medical Physiology GS II	1.0
Totals		12.0

**Winter Quarter**

Units

ANAT 552	Medical Gross Anatomy/Embryology III	2.0
MDCJ 506	Cell Structure and Function	2.0
PHSL 523	Medical Physiology GS III	5.0
Totals		9.0

**Spring Quarter**

Units

ANAT 553	Medical Gross Anatomy/Embryology IV	1.0
MDCJ 507	Cell Structure and Function	2.0
PHSL 524	Medical Physiology GS IV	1.0
REL_5__	Graduate-level Religion	3.0
Totals		7.0
<b>Overall Totals</b>		<b>37.0</b>

# Medicine—SM

M.D.

H. ROGER HADLEY, Dean, School of Medicine

## CURRICULUM

The curriculum in medicine consists of four academic years. Instruction is on the quarter system. The first eight quarters are oriented to the sciences basic to the practice of medicine; the remaining two academic years are made up of clinically oriented core instruction and up to eighteen weeks of clinical electives.

THE FIRST YEAR of medical education will begin to establish a foundation in the sciences basic to the practice of medicine—with emphasis on the principles and mechanisms of normal development, structure, and function—including the normal changes of aging and the behavioral considerations that influence normal development. Course content will be organized around individual organ systems whenever possible. The first year will also begin to develop the skills, values, attitudes, and professional behaviors that are integral to the safe, competent, compassionate, ethical, and Christian practice of medicine both now and in the future. The educational program will make use of a wide variety of pedagogical methods—including but not limited to traditional lecture, small group, problem-based and case-based learning, personalized computer-based instruction, quantitative laboratory experiences, and patient care experiences.

THE SECOND YEAR of medical education will continue to establish a foundation in the sciences basic to the practice of medicine—with emphasis on the principles and mechanisms of abnormal structure and function, principles of therapy, and behavioral considerations that affect disease treatment and prevention. Course content will be organized according to individual organ systems whenever possible. The second year will continue to develop the skills, values, attitudes, and behaviors that are integral to the safe, competent, compassionate, ethical, and Christian practice of medicine both now and in the future. The educational program will make use of a wide variety of pedagogical methods, including but not limited to traditional lecture; small group, problem-based, and case-based learning; personalized computer-based instruction; quantitative laboratory experiences; and longitudinal patient care experiences.

THE THIRD YEAR of medical education will establish a body of knowledge, skills, values, attitudes, and behaviors in seven core clinical science disciplines to build a foundation for patient care in ambulatory and hospital-based settings. Students will attain this foundation through a process of self-directed learning, independent study, and guided supervision and teaching by house staff and faculty. Students will have ample opportunity to learn the value of honor, shared responsibility, and accountability by directly participating in patient care activities as junior colleagues on the health care team.

The didactic program will emphasize: a) understanding the pathophysiology of disease; b) establishing diagnoses through interpretation of physical examination and diagnostic data; and c) applying management principles to patients with acute and chronic conditions. Recurring experiences in whole person care, medical ethics, laboratory medicine, health maintenance, and disease prevention will be integrated into the seven core disciplines. Students will have the opportunity to explore an area of interest during an elective experience for the purpose of beginning the process of choosing a career in medicine.

THE FOURTH YEAR of medical education will require students to integrate the entirety of their medical knowledge, skills, values, and attitudes gained during the first three years and apply it more autonomously to patient care. Students will participate in supervised patient care experiences in emergency medicine, intensive care medicine, and a subintern-level experience in medicine, surgery, family medicine, or pediatrics. Although repetitive clinical duties during the fourth year are a necessary part of preparing students for the rigors of postgraduate training, students will still have ample opportunity to pursue individual interests during a minimum eighteen weeks of elective rotations. To reestablish the importance of science in medical practice, at least one month of elective may be in the basic science discipline of the student's choosing. Students will have adequate vacation time to study for Step II of the USMLE and successfully participate in the residency selection process.

### Whole person formation

Personal and professional growth for the student in medicine is the focus of the disciplines in the school, the faculty in the School of Medicine, and the School of Religion. Courses and content are offered to emphasize biblical, ethical, and relational aspects of the physician's personal and professional development. The core for whole person formation—14 quarter units of religion and ethics—is provided during the first three years of the medicine curriculum.

### Curriculum outline

#### First Year, Summer Quarter

		Units
ANAT 521	Gross Anatomy/Embryology	1.5
BCHM 521	Fundamentals of Human Biochemistry SM	1.0
MDCJ 553	Cell Structure and Function	2.0
MDCJ 561	Physical Diagnosis	1.0
MDCJ 566	Evidence-Based Medicine and Information Sciences	1.0
MNES 501	Orientation to Medicine	2.0
PHSL 515	Medical Physiology	1.0
Totals		9.5

#### Autumn Quarter

		Units
ANAT 522	Gross Anatomy/Embryology II	4.5
BCHM 522	Fundamentals of Human Biochemistry SM	2.5
MDCJ 554	Cell Structure and Function	3.0
MDCJ 562	Physical Diagnosis	2.0
MDCJ 567	Evidence-Based Medicine and Information Sciences	1.0
PHSL 516	Medical Physiology	2.5
Totals		15.5

**Winter Quarter**

Units

ANAT 523	Gross Anatomy/Embryology III	2.0
MDCJ 543	Medical Neuroscience	2.5
MDCJ 555	Cell Structure and Function	2.0
MDCJ 563	Physical Diagnosis	3.0
MDCJ 568	Evidence-Based Medicine and Information Sciences	1.0
PHSL 517	Medical Physiology	3.0
PSYT 521	Fundamentals of Behavioral Science	2.0
Totals		15.5

**Spring Quarter**

Units

ANAT 524	Gross Anatomy/Embryology IV	2.0
MDCJ 544	Medical Neuroscience	1.0
MDCJ 556	Cell Structure and Function	1.5
MDCJ 564	Physical Diagnosis	1.0
MDCJ 569	Evidence-Based Medicine and Information Sciences	1.0
MNES 502	Orientation to Medicine	4.0
PHSL 518	Medical Physiology	1.0
PSYT 522	Fundamentals of Behavioral Science	1.0
Totals		12.5

**Second Year, Summer Quarter**

Units

MDCJ 524	Pathophysiology and Applied Physical Diagnosis	1.0
MDCJ 571	Diseases of Neuroscience	1.0
PATH 514	Human Systemic Pathology	2.5
PHRM 511	Medical Pharmacology	1.5
PSYT 514	Psychopathology	1.0
Totals		7.0

**Autumn Quarter**

Units

MDCJ 524	Pathophysiology and Applied Physical Diagnosis	5.0
MDCJ 572	Diseases of Neuroscience II	2.5
PATH 514	Human Systemic Pathology	2.0
PHRM 512	Medical Pharmacology	1.5
PRVM 514	Clinical Preventive Medicine	1.5
PSYT 514	Psychopathology	3.0
Totals		15.5

**Winter Quarter**

Units

BCHM 531	Biochemical Basis of Human Disease SM	1.0
MDCJ 525	Pathophysiology and Applied Physical Diagnosis	4.0
MICR 516	Medical Microbiology	3.0
PATH 515	Human Systemic Pathology	3.5
PHRM 513	Medical Pharmacology	1.5
PRVM 515	Clinical Preventive Medicine	1.5
Totals		14.5

**Spring Quarter**

Units

BCHM 532	Biochemical Basis of Human Disease SM	1.0
MDCJ 526	Pathophysiology and Applied Physical Diagnosis	2.0
MICR 517	Medical Microbiology	1.5
PATH 516	Human Systemic Pathology	2.0
PHRM 514	Medical Pharmacology	2.0
PRVM 516	Clinical Preventive Medicine	1.0
Totals		9.5

**Third Year**

1.5 units = 1 week of clinical clerkship

Units

FMDN 701	Family Medicine Clerkship (4 weeks)	6.0
GYOB 701	Gynecology and Obstetrics Clerkship (6 weeks)	9.0
MEDN 701	Medicine Clerkship (10 weeks)	15.0
MNES 791	Third-year Elective (2 weeks)	3.0
NEUR 701	Neurology Clerkship (4 weeks)	6.0
PEDS 701	Pediatrics Clerkship (8 weeks)	12.0
PSYT 701	Psychiatry Clerkship (6 weeks)	9.0
SURG 701	Surgery Clerkship (10 weeks)	15.0
Totals		75.0

**Fourth Year**

## Clinical clerkships

Units

EMDN 821	Emergency Medicine Clerkship (2 weeks)	3.0	
MDCJ 821	Preventive and Community Medicine (4 weeks)	6.0	
ANAT 891	Anatomy Elective (1.5 to 18)	Elective rotations (20 weeks = 30 units)	30.0
ANES 891	Anesthesiology Elective (1.5 to 18)		
DERM 891	Dermatology Elective (1.5 to 18)		
EMDN 891	Emergency Medicine Elective (1.5 to 18)		
FMDN 891	Family Medicine Elective (General Family Medicine) (1.5 to 18)		
GYOB 891	Gynecology and Obstetrics Elective (1.5 to 18)		
MDCJ 891	Whole Person Care (1.5 to 12)		
MEDN 891	Medicine Elective (1.5 to 18)		
NEUR 891	Neurology Elective (1.5 to 18)		
NEUS 891	Neurosurgery Elective (1.5 to 18)		
OPHM 891	Ophthalmology Elective (1.5 to 18)		
ORTH 891	Orthopaedic Surgery Elective (1.5 to 18)		
OTOL 891	Otolaryngology Elective (1.5 to 18)		
PATH 891	Pathology Elective (1.5 to 18)		
PEDS 891	Pediatrics Elective (1.5 to 18)		
PHRM 891	Pharmacology Elective (1.5 to 12)		
PHSL 891	Physiology Elective (1.5 to 12)		
PMRH 891	Physical Medicine and Rehabilitation Elective (1.5 to 18)		
PRVM 891	Preventive Medicine Elective (1.5 to 18)		
PSYT 891	Psychiatry Elective (1.5 to 18)		
RADS 891	Radiology Elective (1.5 to 18)		
RDMN 891	Radiation Medicine Elective (1.5 to 18)		
SURG 891	Surgery Elective (1.5 to 18)		
UROL 891	Urology Elective (1.5 to 18)		
MEDN 822	Medicine Intensive Care (6)	Choose one rotation (4 weeks)	6.0
PEDS 822	Pediatrics Intensive Care (6)		
SURG 822	Surgery ICU (6)		
FMDN 821	Family Medicine Subinternship (6)	Subinternship: Choose one rotation (4 weeks)	6.0
MEDN 821	Medicine Subinternship (6)		
PEDS 821	Pediatrics Subinternship (6)		
SURG 821	Surgery Subinternship (6)		
		Totals	51.0
		<b>Overall Totals</b>	<b>225.5</b>

**Residency programs**

Loma Linda University Medical Center sponsors a variety of accredited residency programs. These include residencies in anesthesiology, pediatric anesthesiology, dermatology, procedural dermatology, emergency medicine, pediatric emergency medicine, family medicine, internal medicine, internal medicine—pediatrics, cardiology, gastroenterology, pulmonary/critical care medicine, rheumatology,

neurology, child neurology, clinical neurophysiology, neurological surgery, obstetrics and gynecology, ophthalmology, orthopaedic surgery, otolaryngology, clinical and anatomic pathology, pediatrics, critical care pediatrics, neonatology, physical medicine and rehabilitation, pain management, plastic surgery, preventive medicine, occupational medicine, psychiatry, radiation oncology, radiology, neuroradiology, pediatric radiology, surgery, thoracic surgery, and general vascular surgery. Additional nonaccredited fellowships are available.

Graduate physicians wishing to apply for entrance into these programs should contact the director of the program.

Graduate dentists who seek residencies in dental anesthesia, endodontics, oral implantology, orthodontics, pediatric dentistry, periodontics, and prosthodontics should apply directly to the School of Dentistry.

## **THE DEPARTMENTS OF THE SCHOOL OF MEDICINE**

The twenty-three departments of the School of Medicine are:

- Anesthesiology
- Basic Science
- Cardiovascular and Thoracic Surgery
- Dermatology
- Emergency Medicine
- Family Medicine
- General and Trauma Surgery
- Gynecology and Obstetrics
- Medicine
- Neurology
- Neurosurgery
- Ophthalmology
- Orthopaedic Surgery
- Otolaryngology and Head and Neck Surgery
- Pathology and Human Anatomy
- Pediatrics
- Physical Medicine and Rehabilitation
- Plastic and Reconstructive Surgery
- Preventive Medicine
- Psychiatry
- Radiation Medicine
- Radiology
- Urology

**Anesthesiology**

ROBERT D. MARTIN, Chair

RICHARD L. APPLGATE, II, Vice Chair

**DIVISIONS****CRITICAL CARE**, GARY STIER, Head**PEDIATRICS**, LINDA MASON, Head**CARDIAC**, STANLEY BRAUER, Head**FACULTY**

Shelley F. Abdel-Sayed

Martin W. Allard

Donald L. Anderson

Richard L. Applegate

Sherif A. Azer

Jia-Yi Bian

Bernard J. Brandstater

Allen L. Brandt

Stanley D. Brauer

Burton A. Briggs

Douglas C. Brockmann

Maureen H. Bull

Edward R. Campbell

Tony B. Chiang

Deborah M. Chung

Anne T. Cipta

Carl E. Collier

Francis L. Comunale

Mark E. Comunale

Carmencita J. Coronel

Jennifer B. Cristall

Ihab R. Dorotta

Joseph P. Galura

Jason W. Gatling

Elizabeth A. Ghazal

Brenna L. Gustafson-Jackson

Daniela S. Karagyozyan

Abraham M. Kiani

David S. Kim

Penny L. Kimball-Jones

Carol A. Lau

Ryan E. Lauer

M. Minh Le

Charles Lee

E. Anita Lee

Sandra H. Lee

John Lenart  
Marina J. Liu  
Samuel J. Loh  
Mark R. Macknet  
Mathew R. Malkin  
Robert D. Martin  
Linda J. Mason  
Deborah McIvor  
James A. Meyer  
Phebe F. Mosaad  
Shannon M. Mulder-Michaelson  
Monica M. Neumann  
Rebecca J. Patchin  
Paul I. Patel  
Thomas Rasmussen  
Abdul R. Samady  
Michelle L. Schlunt  
Valerie A. Seabaugh  
Jean E. Sprengel  
Gary R. Stier  
Donald L. Stilson  
Jason A. Tan  
Shirley L. Tan  
Teresa L. Thompson-Razzouk  
Samuel E. Torres  
Sidney E. Torres  
Edward W. Verde  
John F. Viljoen  
Linda I. Wat  
Bryan G. Wernick  
Po-chin J. Wu

The goals of the Department of Anesthesiology are to:

1. Provide necessary anesthesia, analgesia, pain control, and intensive care of the highest caliber and with Christian empathy to patients of Loma Linda University Medical Center and its affiliated facilities.
2. Educate medical students, dentists, and anesthesiology residents in the fields of anesthesia, critical care, and pain control.
3. Increase knowledge of the use of anesthetic and analgetic agents.

**Basic Science**

PENELOPE J. DUERKSEN-HUGHES, Acting Chair

**DIVISIONS**

**BIOCHEMISTRY**, PENELOPE J. DUERKSEN-HUGHES, Head

**MICROBIOLOGY**, HANSEL M. FLETCHER, Head

**PHARMACOLOGY**, JOHN BUCHHOLZ, Head

**PHYSIOLOGY**, JOHN H. ZHANG, Head

**FACULTY**

Danilyn M. Angeles

Jerome Badaut

Richard E. Beltz

Arlin B. Blood

Danilo Boskovic

Eileen J. Brantley

John N. Buchholz

Leonard R. Bullas

Edouard M. Cantin

Carlos Casiano

Daniela Castanotto

Philip J. Chan

Shin Tai Chen

Bradley A. Cole

Jane A. Crofut Kleinman

Agus Darwanto

Amitava Das

Khashayar Dashtipour

Daisy D. De Leon

Marino A. De Leon

Charles A. Duksay

Penelope J. Duerksen-Hughes

Lincoln P. Edwards

Alan P. Escher

John R. Farley

Valeri A. Filippov

Maria Filippova

Ronald R. Fiscus

Hansel M. Fletcher

Istvan Fodor

Steven C. Forland

Ian M. Fraser

Ravi Goyal

Daila S. Gridley

Raymond G. Hall, Jr.

E. Clifford Herrmann

David A. Hessinger  
Sandra R. Hilliker  
George R. Javor  
Mark S. Johnson  
Michael A. Kirby  
Wolff M. Kirsch  
William H. Langridge  
Benjamin H. S. Lau  
John E. Lewis  
F. Alice Li  
Ren-Jang Lin  
Thomas A. Linkhart  
Lawrence D. Longo  
Monica M. Lurtz  
Eugenia I. Mata-Greenwood  
Elwood S. McCluskey  
Giuseppe A. Molinaro  
Jonathan W. Neidigh  
Stephen A. Nyirady  
Robert P. Ostrowski  
Janice C. Palaganas  
William J. Pearce  
Michael J. Pecaut  
Christopher C. Perry  
Marvin A. Peters  
Gordon G. Power  
Philip J. Roos  
John J. Rossi  
Raymond E. Ryckman  
Hobe J. Schroder  
Charles W. Slattery  
Ubaldo Soto-Wegner  
Lawrence C. Sowers  
Allen Strother  
Xue Jun Sun  
Jiping Tang  
Barry L. Taylor  
Robert W. Teel  
Nathan R. Wall  
Kylie J. Watts  
Leonard S. Werner  
R. Bruce Wilcox  
Sean M. Wilson  
David L. Wolf  
Daliao Xiao  
Zhice Xu

Steven M. Yellon  
John H. Zhang  
Kangling Zhang  
Lubo Zhang  
Anthony J. Zuccarelli

The goals of the Department of Basic Science are to:

1. Offer relevant course work for the various professional curricula that will provide essential foundational content, an understanding of the current state of the field, and the skills required to maintain currency.
2. Offer a graduate curriculum leading to M.S. and Ph.D. degrees that are designed to provide graduate students with the information and tools needed to succeed as independent educators and investigators.
3. Conduct and publish peer-reviewed research that contributes to knowledge in the biomedical sciences.
4. Support Loma Linda University colleagues through collaborations and consultations that will assist in research and instruction.

## **Cardiovascular and Thoracic Surgery**

ANEES J. RAZZOUK, Chair

### **DIVISIONS**

**CARDIOTHORACIC**, ANEES J. RAZZOUK, Head

**VASCULAR**, AHMED M. ABOU-ZAMZAM, Head

### **FACULTY**

Ahmed M. Abou-Zamzam  
Leonard L. Bailey  
Brian E. Bates  
Christian Bianchi  
Jason T. Chiriano  
Michael J. delRio  
Rosario Florida  
Appannagari Gnanadev  
William J. Hopewell  
George Kafrouni  
J. David Killeen  
Afshin M. Molkara  
Robert Pereyra-Suarez  
Alfredo L. Rasi  
Anees J. Razzouk  
Theodore H. Teruya  
Robert S. Vannix  
Edwin E. Vyhmeister  
Nan Wang

Ellsworth E. Wareham  
 Michael N. Wood  
 Salman Zaheer

The Department of Cardiovascular and Thoracic Surgery is dedicated to providing comprehensive, quality surgical care to patients with heart, vascular, and thoracic disease. The department's clinical services include adult cardiac surgery, congenital cardiac surgery, adult and pediatric heart transplantation, general thoracic surgery, vascular surgery, and trauma.

Other equally important goals of the department are to:

1. Educate medical students through lectures, clinical rotations, research projects, and faculty role modeling.
2. Train the next generation of competent surgeons in the specialty. The department provides opportunities for ACGME-approved residencies in vascular surgery (two-year program) and in cardiothoracic surgery (three-year program).
3. Partner with the Global Health Institute of Loma Linda University by providing expert surgical help to other countries in need.
4. Provide support for innovation and promotion of clinical research.

## **Dermatology**

ABEL TORRES, Chair

### **FACULTY**

Nancy J. Anderson  
 John H. Bocachica  
 Tejas D. Desai  
 Richard D. Doty  
 Stephanie K. Fogelson  
 Desmond D. Gibson  
 Linda Golkar  
 Jane M. Hirokane  
 Elena M. Livina  
 Justin D. Love  
 Kenneth D. Macknet, Jr.  
 Christine E. Moorhead  
 David Opai-Tetteh  
 Joseph F. Sedrak  
 Fred F. Soeprono  
 Jamison E. Strahan  
 Abel Torres  
 Ingrid E. Trenkle  
 Hubert C. Watkins  
 J. Robert West  
 Edwin T. Wright

Sarvenaz Zand  
John F. Zdrojewski

## **Emergency Medicine**

KATHLEEN J. CLEM, Chair

### **DIVISIONS**

**GENERAL EMERGENCY MEDICINE, ROBERT STEELE, Head**

**PEDIATRIC EMERGENCY MEDICINE, LANCE E. BROWN, Head**

### **FACULTY**

Shamel A. Abd-Allah  
Besh R. Barcega  
Rishi Bhargava  
Ryan Brenchley  
Lance A. Brown  
Sean P. Bush  
Bharath Chakravarthy  
Eugene T. Chan  
Deepak N. Chandwani  
Samuel C. Chua  
Kathleen J. Clem  
Stephen W. Corbett  
Lynda Daniel-Underwood  
Carrie E. Davis  
T. Kent Denmark  
David M. Englander  
Ara Festekjian  
Michelle R. Gill  
Jeff T. Grange  
Steven M. Green  
Gregory T. Guldner  
Mindi J. Guptill  
Richard H. Guth  
Melvyn L. Harris  
Korbin N. Haycock  
Mia L. Karamatsu  
Julie K. Kasarjian  
Aqeel S. Khan  
Grace J. Kim  
Steven S. Kim  
Tae J. Kim  
Tommy Y. Kim  
Eduardo D. Lam  
Victor D. Levine  
Jennifer J. Lim

Edwin F. Lopez  
R. Daniel Luther  
Guisou Mahmoud  
Timothy G. McNaughton  
Lilit Minasyan  
Ameer P. Mody  
James A. Moynihan  
Dan Nadler  
John C. Naftel  
Timothy P. Nesper  
H. Bryant Nguyen  
Kenneth L. Nickson  
Humberto R. Ochoa  
Kellie M. Olson  
John E. Osborne  
Stephen C. Patterson  
Edward A. Pillar  
Jason J. Prystowsky  
James W. Rhee  
Mark D. Sandoval  
Thomas S. Sherwin  
Dustin D. Smith  
Robert Steele  
Gail M. Stewart  
Carl B. Stilson  
Matthew K. Stilson  
Milton R. Teske  
Mark E. Thomas  
Tamara L. Thomas  
Andrea S. Thorp  
David D. Tito  
Louis P. Tran  
Matthew B. Underwood  
Edward J. Vargas  
Marcus T. Voth  
David K. Wagner  
Justin B. Wagner  
E. Lea Walters  
Deborah L. Washke  
Nathan T. Watson  
Samuel G. Wilson  
William A. Wittlake  
Kelvin L. Wong  
Ernest S. Woodhouse  
Timothy P. Young  
Kimberly R. Zimmerman

The philosophy of the Department of Emergency Medicine centers on a commitment to quality in its service, teaching, and research missions. This department functions as a crossroads interface between the community and the medical center services—providing a point of access to medical care for many people who are seriously and unexpectedly ill, and whose condition may be compromised by geographic isolation and socioeconomic disadvantage.

The objectives of the department are to:

1. Provide and coordinate cost-effective, empathic, and compassionate prehospital, emergency, and trauma services of excellent quality.
2. Support and contribute to the achievement of medical education competency for all categories of emergency care professionals.
3. Develop initiatives that promote increased understanding of and improved techniques and skills in emergency care practice, heighten positive perception of this specialty, and contribute to quality research in this area.
4. Promote teamwork skills among the various services and professionals comprising the emergency medical system.

## **Family Medicine**

JOHN K. TESTERMAN, Chair

### **FACULTY**

Travis B. Adelman

Will Alexander

Y. Paul Aoyagi

James Appel

Javier A. Armijo

Randy A. Beddoe

Andre V. Blaylock

Lisa Bolla

Ron K. Brathwaite

Zachary J. Cash

Romeo Castillo

Vanessa A. Castro

Suneeta Choudhary

Warren B. Churg

Casey C. Cole

F. Daniel Cruz

Janet A. Cunningham

Linda Deppe

Dai Vien Du

Wayne Dysinger

Daniel L. Engleberg

Christy L. Eskes

Allen C. Felix

Linda H. Ferry

John Fleming

Christopher V. Flores  
Daniel Franco  
Michael E. Frederich  
Herbert N. Giebel  
Cynthia J. Glasgow  
David F. Glossbrenner  
Jean-Claude Hage  
Calvin Hagglov  
Tina M. Haller-Wade  
Jean E. Haynes-Lee  
Kevin R. Herrick  
Jonathan Horstmann  
Ming Chang Isinhue  
William W. Jih  
Jennifer A. Keehbauch  
Kamal Kejriwal  
Jay D. Kerr  
Sharmel O. Kettler  
Marina Khubesrian  
Richard Kim  
Claire H. Koga  
Rosarin Kriengprarthana  
James S. Ku  
Anissa Y. LaCount  
Gilbert H. Lee  
Tony B. Lee  
Margaret H. Lester  
Yi Lieu  
Rubin C. Lin  
Gerald Lofthouse  
Jason L. Lohr  
Maria B. Lohr  
Tarek Z. Mahdi  
Manoucher Manoucheri  
Jennifer Martin  
Gary E. Marais  
Kenneth D. McCarty  
Laurie P. McNaughton  
Elliot A. Meltzer  
Renu Mittal  
Gina J. Mohr  
Walter C. Morgan  
Kelly Morton  
Timothy E. Neufeld  
Anh Thi Nguyen  
Hieu T. M. Nguyen

Samuel S. Oh  
Michael R. Oliverio  
Michelle T. Opsahl  
Robert D. Orr  
Barbara J. Orr  
Jamie S. Osborn  
Shantharam R. Pai  
Erik G. Palmer  
Lien T. Pham  
Gordon D. Phillips  
R. Steven Pulverman  
Robert Quigley  
Michelle E. Reeves  
Magda L. Robinson  
Ann M. Ronan  
Steve Salzman  
Katherine R. Schlaerth  
Kendall G. Scott  
Audrey F. Shank  
Michael D. Shepherd  
Khwaja A. Siddiqui  
Lauren M. Simon  
Grace E. Song  
Ruth Stanhiser  
Mark S. Sutton  
John K. Testerman  
Nancy Testerman  
Jeffrey R. Unger  
Erik G. Walsh  
Leonard S. Werner  
John D. Wilson  
Esther U. Won  
Robert K. Yamada  
Jack Yu

The objectives of the Department of Family Medicine are to:

1. Provide medical students and residents with education and training that exemplifies excellence, compassion, and wholeness in the specialty of family medicine.
2. Educate students and residents to provide evidence-based, best-practice, chronic disease care that spans the arc of care—from prevention to management to palliative care.
3. Teach students to evaluate and manage common problems at the primary care level, providing continuing and comprehensive health care for individuals of both genders and all ages.
4. Teach students and residents the skills necessary to take a spiritual history and incorporate the spiritual and psychosocial into the biomedical aspects of clinical care.

5. Introduce students and residents to the use of a systems approach and quality improvement techniques to improve patient safety and assure the delivery of best-practice, evidence-based care to a population of patients.
6. Introduce students to family physician role models so that students will be able to make informed choices regarding family medicine as a career option.

## **General and Trauma Surgery**

CARLOS A. GARBEROGLIO, Chair

### **DIVISIONS**

#### **COLORECTAL**

**GENERAL**, ANTONIO E. ROBLES, Head

**PEDIATRIC**, DONALD C. MOORES, Head

**TRANSPLANT**, RICHARD S. CATALANO, Head

**TRAUMA**, RICHARD D. CATALANO, Head

### **FACULTY**

Yousef G. Amaar

Joanne E. Baerg

Pedro W. Baron

Brian E. Bates

Jack L. Bennett

James A. Brown

Richard D. Catalano

Lori J. H. Chow

N. Eugene Cleek

Waldo Concepcion

Douglas W. Cook

John T. Culhane

Joseph V. Davis III

Clifford C. Eke

Edson S. Franco

Wesley L. Fung

Carlos A. Garberoglio

Fekede W. Gemechu

Gerald Gollin

Paul E. Gray

Lawrence A. Harms

Lawrence E. Heiskell

Alan S. Herford

David B. Hinshaw, Sr.

Charles K. C. Hu

Farabi M. Hussain

Janet K. Ihde

Victor C. Joe

Samir D. Johna

Kevork K. Kazanjian  
Simon M. Keushkerian  
Faisal A. Khan  
Daniel D. Klaristenfeld  
Arputharaj H. Kore  
Fariborz Lalezarzadeh  
Uriel R. Limjoco  
Jerrold K. Longerbeam  
H. Daniel Ludi  
Sharron S. J. Lum  
M. C. Theodore Mackett  
Lester L. Mohr  
Donald C. Moores  
Andre C. Nguyen  
Thomas A. O'Callaghan  
Okechukwu N. Ojogho  
Clifton D. Reeves  
Mark E. Reeves  
Stewart E. Rendon  
Aleksandr A. Reznichenko  
Jorge L. Rivera  
Antonio E. Robles  
Frank A. Rogers  
Sharmila Roy-Chowdhury  
Gisella L. Sandy  
Gregory S. Shank  
Louis L. Smith  
Bruce C. Steffes  
Arnold D. Tabuenca  
Derya U. Tagge  
Edward P. Tagge  
Angel J. Tamez  
Matthew S. C. Tan  
Ralph J. Thompson  
Keir J. Thelander  
David C. Thompson  
Noel Victor  
Hansen S. Wang  
David T. W. Wong  
Jan H. Wong  
J. Frank Yamanishi  
Robert M. Yuhan

The Department of General and Trauma Surgery is in harmony with the stated purposes and philosophy of Loma Linda University School of Medicine. The goals of the Department of General and Trauma Surgery are to:

1. Provide the highest standard of surgical patient care.
2. Maintain educational programs in the surgical disciplines for medical students, residents, and fellows.
3. Provide facilities for laboratory and clinical research in the areas of surgical interest.

## **Gynecology and Obstetrics**

WILLIAM C. PATTON, Chair

BRYAN T. OSHIRO, Vice Chair

### **FACULTY**

Brian D. Acacio

Teresa P. Avants

Kevin C. Balli

Barry S. Block

Emerald B. Caruso

Philip J. Chan

Sandy S. Chaun

Ai-Mae Chee-Watkins

Chul Choi

Johannah Corselli

Shirley A. Fong

George J. Gilson

Yvonne G. Gollin

Wilbert Gonzalez

Jeffrey S. Hardesty

Elaine E. Hart

Marilyn Herber

John D. Jacobson

Ronald B. Johnson

Lisa A. Kairis

Elden D. Keeney

Melissa Y. Kidder

John J. Kim

J. Dee Lansing

Kathleen M. Lau

Elisa M. Lindley

Lawrence D. Longo

Laurel J. Munson

Rick D. Murray

Masao Nakamoto

Bryan T. Oshiro

Karen N. Oshiro

William C. Patton

Gordon G. Power

Harold V. Racine

Leroy A. Reese

Elmar P. Sakala  
 Herminia S. Salvador  
 Danielle Sawyer-Macknet  
 Dominique Shaw  
 Kathryn Shaw  
 Hyun S. Shvartsman  
 Sam Siddighi  
 Mary L. Small  
 E. Laurence Spencer-Smith  
 Darrell L. Vaughan  
 Robert J. Wagner  
 Clifford A. Walters  
 Kim Warner  
 Cinna T. Wohlmuth  
 Kenneth H. Wong

The purpose of the Department of Gynecology and Obstetrics is to provide an academic environment that encourages learning, teaching, and research.

The objectives of the department are to:

1. Provide medical students with a broad base of knowledge in obstetrics and gynecology for entrance into a primary care specialty.
2. Instill a standard of medical excellence that will lead to a continuing program of medical education reaching through and beyond the residency years.
3. Provide faculty who function as role models for the students and residents.

## **Medicine**

DOUGLAS R. HEGSTAD, Chair  
 PHILIP M. GOLD, Executive Vice Chair, Department of Medicine  
 KENNETH R. JUTZY, Vice Chair, Loma Linda University Medical Center  
 PHILIP J. ROOS, Vice Chair, Jerry L. Pettis Memorial Veterans Medical Center  
 DANIEL I. S. KIM, Vice Chair, Riverside County Regional Medical Center  
 RAYMOND Y. WONG, Associate Chair for Student Education  
 DANIEL I. S. KIM, Associate Chair for Resident Education  
 H. HELEN BAEK, Associate Chair for Continuing Medical Education  
 MICHAEL H. WALTER, Senior Associate Chair for Finance and Development  
 KEITH K. COLBURN, Associate Chair for Research  
 LAWRENCE K. LOO, Associate Chair for Faculty Development

## **DIVISIONS**

**CARDIOLOGY**, KENNETH R. JUTZY, Head  
**ENDOCRINOLOGY**, J. LAMONT MURDOCH, Head  
**GASTROENTEROLOGY**, TERENCE D. LEWIS, Head  
**GENERAL INTERNAL MEDICINE AND GERIATRIC MEDICINE**, RAYMOND Y. WONG, Head  
**INFECTIOUS DISEASE**, JAMES J. COUPERUS, Head  
**NEPHROLOGY**, SIEGMUND TEICHMAN, Head

**ONCOLOGY-HEMATOLOGY, CHIEN-SHING CHEN, Head**  
**PULMONARY AND CRITICAL CARE MEDICINE, PHILIP M. GOLD, Head**  
**RHEUMATOLOGY AND IMMUNOLOGY, KEITH K. COLBURN, Head**

**FACULTY**

Ramadas Abboy  
Imdad Ahmad  
Shobha S. Aiyar  
Adewale B. Ajumoi  
Haris Ali  
Bradley T. Anderson  
Pamela E. Anderson  
James D. Anholm  
Patricia J. Applegate  
Zarshid Arbabi  
Mihran H. Ask  
H. Helen Baek  
Daljeet B. Bansal  
Ramesh C. Bansal  
Juan C. Barrio  
Rebekah Bartos-Specht  
F. Patricia Batin  
David J. Baylink  
Samuel Baz  
David M. Bee  
Diane J. Berriman  
Joann K. Bischoff  
Michael F. Bishara  
Moe H. Bishara  
Patricia S. Blakely  
David Bland  
Ingrid K. Blomquist  
Reiner B. Bonnet  
Daniel L. Bouland  
Jeffrey J. Brand  
Charles H. Brinegar, Jr.  
Gary W. Brown  
Vickie D. Brown-Harrell  
Evert A. Bruckner  
John M. Byrne  
Elber S. Camacho  
Ethelred E. Carter  
Carlos Casiano  
Daniel Castro  
Robert B. Chadwick  
Bobby S. Chan

Francis D. W. Chan  
Suzanne E. Chang  
William W. Chang  
Zeno L. Charles-Marcel  
Gregory A. Cheek  
Chien-Shing Chen  
Shaw S. Chen  
Jun R. Chiong  
Morteza Chitsazan  
Steven W. Chong  
C. Joan Coggin  
Keith K. Colburn  
David S. Condon  
Stanley C. Condon  
Adrian N. Cotton  
Alfred C. Cottrell  
James J. Couperus  
Debra D. Craig  
Raymond B. Crawford  
Smitha Daka  
Chitra Damodaran  
Nagamani Dandamudi  
Amitava Das  
Lino J. DeGuzman  
James R. Dexter  
Beverly K. Dolberg  
Ralph Downey III  
James P. Drinkard  
Lida Eatedali  
Bouchra Edderkaoui  
Harvey A. Elder  
Mohamed M. El-Kabany  
Gilbert P. Eng  
Suzanne Enlow-Whitaker  
Dwight C. Evans  
J. Robert Evans  
Basem R. Farag  
Ramiz A. Fargo  
John R. Farley  
Marian A. Fedak  
Earl W. Ferguson  
Ronald S. Fernando  
David R. Ferry  
J. Michael Finley  
Anthony F. Firek  
Franz P. Fisher

Steven C. Forland  
Glenn L. Foster  
Gary E. Fraser  
Gerald S. Friedman  
Helmuth F. Fritz  
Geir P. Frivold  
Roger C. Garrison  
Bevan A. Geslani  
Thomas E. Godfrey  
Philip M. Gold  
Alma A. Gonzaga  
Eduardo J. Gonzaga  
Alan E. Gorenberg  
Daniel Gorenberg  
Walter S. Graf  
George M. Grames  
Margaret A. Griffin  
Ronald A. Griffin  
Mouna E. Haddad-Wilson  
Susan L. Hall  
Paul G. Hammond  
Steven B. Hardin  
L. Julian Haywood  
Douglas R. Hegstad  
Vickie Y. Height  
Nancy J. Heine  
Raymond Herber  
Jan M. Herrmann  
Kathy A. Herzberger  
J. Thomas Heywood  
Anthony A. Hilliard  
Dennis A. Hilliard  
Su Su Hline  
Andrew T. Ho  
Thanh X. Hoang  
Frank D. Howard  
Russell E. Hoxie, Jr.  
Chung-Tsen Hsueh  
Galen C. L. Huang  
James J. Huang  
Arnando J. Huaranga  
Enacio G. Hunt  
Sheri W. Hsu  
Waleed A. Ibrahim  
Michael B. Ing  
George M. Isaac

Dale M. Isaeff  
Mohamed H. Ismail  
Jay T. Jablow  
Christian S. Jackson  
Alan K. Jacobson  
Mehdi S. Jahromi  
Navin Jaipaul  
G. David Jang  
Geun C. Jang  
John C. Jennings  
Suchaya Jinamornphongs  
Donald L. John  
Torbjorn I. Jorteg  
Pawan K. Juneja  
Kenneth R. Jutzy  
Roy V. Jutzy  
Jay Kahng  
Rahul M. Kale  
Joanne S. Kang  
T. Michael Kashner  
Emmanuel P. Katsaros  
Brent W. Kay  
Zeid Kayali  
Kenneth L. Kelln  
Casey M. Kennedy  
Todd S. Kessler  
Sherif F. Khalil  
Balram S. Khehra  
Daniel I. S. Kim  
Dennis Y. Kim  
Mi Ye Kim  
Ook Kim  
Walter F. Klein  
Vinaya P. Konduri  
Faher E. Koteira  
Edwin H. Krick  
Rajagopal Krishnan  
Irvin N. Kuhn  
Ashok Kumar  
Mei Y. Lai  
Trang T. Lam  
Euly M. Langga-Sharifi  
Wilson D. Lao  
James P. Larsen  
Alan C. K. Lau  
Francis Y. K. Lau

Kin-Hing William Lau  
Susie H. Lau  
Scott W. Lee  
Sonny C. Y. Lee  
Steve S. Lee  
Paul A. Levine  
Terence D. Lewis  
Michael B. Lilly  
Nelson H. Lim  
Ju-an Lin  
Takkin Lo  
Evelyn B. Lomarda  
Lawrence K. Loo  
Ivan M. Magnaye  
Kanwaljeet K. Maken  
Ariel Malamud  
Priya Malik  
Nirav M. Mamdani  
Ramesh K. Manchanda  
Ravi Mandapati  
Gary E. Marais  
H. John Marais  
Robert J. Marsa  
Axa I. Martell  
J. Todd Martell  
Claire L. McArthur  
John D. McCracken  
James I. McMillan  
Arther Mehboob  
Sukh S. R. Mehta  
Leonidas V. Mejia  
Michel H. Mendler  
Alan W. Michel  
Hamid R Mirshahidi  
Robert D. Mitchell  
Subburaman Mohan  
Ioana Moldovan  
Patrick M. Moloney  
Devadas S. Moses  
Ashis Mukherjee  
Malwinder K. Multani  
J. Lamont Murdoch  
Eduardo J. Nam  
Hima B. Nareddy  
Daniel A. Nash  
Krishna S. Nayak

Jerald C. Nelson  
Sherlene Ng  
Phat H. Ngo  
Hoa T. Nguyen  
Annette T. Nitta  
Pushpa Nowrangi  
Ikechi O. Obiocha  
Snorri Olafsson  
Takahiro Otsuka  
Ramdas G. Pai  
Sudha M. Pai  
Ivy C. Pandit  
Hemal J. Parekh  
Gauttam N. Patel  
Mark C. Patuszynski  
Jon G. Persichino  
Prashant V. Phatak  
Sonal V. Phatak  
Bina Piya  
Gerald M. Pohost  
Gilbert J. Putnoky  
Lakshmi K. Puvvula  
Xue Zhong Qin  
Walter Quan, Jr.  
Gulnara Rackauskas  
John A. Rambharose  
Shuja Rasool  
Syed J. Raza  
H. Rajender Reddy  
Maher A. Rezkalla  
Teri L. Rhetta  
Herman H. Ricketts  
Rhodes L. Rigsby  
Suzanne S. Rizkalla  
Maher A. Roman  
Thomas J. Romano  
Philip J. Roos  
Carolann R. Rosario  
Katja Ruh  
Cynthia C. Ruiz  
Charles H. Rundle  
Bruce A. Runyon  
Seyed A. Sadjadi  
Leena Sahay  
Tisha L. Salary  
Lawrence B. Sandberg

Amy E. Schill-Depew  
Allen L. Schwandt  
Roger D. Seheult  
Cynthia L. Serabyn  
Edward R. Serros  
Luis A. Servin-Abad  
Stewart W. Shankel  
Tamara M. Shankel  
Tahseen N. Shareef  
Richard L. Sheldon  
Matilda H. Sheng  
Vasthi V. Silva  
Helme Silvet  
Ajeet R. Singhvi  
Lynnetta E. Skoretz  
Robert E. Soderblom  
Mehul S. Sonawala  
Lawrence C. Sowers  
N. Lennard Specht  
Wichit Srikureja  
Malathy Sriskandarajah  
Apurva K. Srivastava  
Betty Stepien  
Liset N. Stoletniy  
Debra L. Stottlemyer  
Donna D. Strong  
Richard M. Strong  
Chao H. Sun  
Edwin J. Supit  
Made Sutjita  
Richard J. Swabb  
Linda Giles Tan  
Shirley M. Tan  
Siegmond Teichman  
Douglas W. Teller  
Mie Mie Thinn  
Gary J. Thompson  
Conny Tirtaman-Sie  
Bhoodev Tiwari  
Sigve K. Tonstad  
Vilma I. Torres  
Denise L. Townsend  
James Y. Tsai  
Leah A. Tudtud-Hans  
Wilfredo M. Tupas  
John S. Uniat

Padmini Varadarajan  
Ashok K. Verma  
Madhavi Vesta  
Bertrand H. Vipond  
Michael H. Walter  
Jon E. Wergedal  
Leonard S. Werner  
David W. Wilbur  
Sean M. Wilson  
Trevor A. Winter  
Brian A. Wong  
Raymond Y. Wong  
Sammy S. Wong  
Michael K. Woo  
Sidney S. C. Wu  
Weirong Xing  
Yuan Yuan  
Yasmin A. Yusufaly  
Tommy Zaharakis  
Manila Zaman  
Xiao-Bing Zhang  
Yan Shi Zhao

**Department of Medicine goals statement\***

The goal of the Department of Medicine is to innovate and provide leadership in:

- Healing
- Education
- Discovery
- Integrated health care delivery
- Shaping institutional and public policy

The Department of Medicine supports the missions of Loma Linda University and the Medical Center.

**Vision**

The Department of Medicine will become a greater regional clinical resource.

The Department of Medicine fosters a spirit of inquiry expressed in research and teaching. Its faculty advance clinical practice and understanding.

**Themes**

- Renewal
- Growth
- Teamwork

\* This goals statement should be a "living document," periodically updated and revised with input from the Department of Medicine faculty and its stakeholders.

## **Neurology**

BRYAN E. TSAO, Chair

### **FACULTY**

Thomas W. Bohr

Jeffrey A. Bounds

Murray E. Brandstater

Judy L. Chang

Jack J. Chen

Bradley A. Cole

Dorothee L. Cole

Khashayer Dashtipour

Natasha V. Demattos

Sandra E. DeWolf-Estrada

Ralph Downey

Rodolfo O. Escutin

Wesley E. Fleming

Daniel W. Giang

Shawn K. Higuchi

Izabelle Isaac

Robert A. Klein

Antonio K. Liu

Travis E. Losey

Norman L. McNulty

Donald Miller

Laura D. Nist

Jignasa G. Patel

Donald I. Peterson

Gordon W. Peterson

Sarah M. Roddy

A. Dean Sherzai

R. Richard Sloop

David M. Swope

Bryan E. Tsao

Lori D. Uber-Zak

Sarah H. Uffindell

Paul J. Zak

The goal of the Department of Neurology is to deliver the highest quality of neurological care to patients by integrating academic medicine with whole person care, research, and education. With the rapid development of technology, it is essential that medical students learn to recognize and treat a

variety of neurological disorders. The objective of the department's four-week rotation is to further God's work of restoring wholeness to people by teaching the essentials of clinical neurology through compassionate patient care, bedside teaching, and a focused didactic curriculum.

## **Neurosurgery**

AUSTIN R. T. COLOHAN, Chair

### **FACULTY**

Farbod Asgarzadie  
Traian T. Cojocaru  
Austin R. T. Colohan  
Lloyd A. Dayes  
Meghan Galloway  
Frank P. K. Hsu  
Walter D. Johnson  
Michael E. Kirby  
Wolff M. Kirsch  
Findlay E. Russell  
Shokei Yamada  
John H. Zhang  
Yong Hua Zhu  
Alexander Zouros

## **Ophthalmology**

HOWARD V. GIMBEL, Chair

ERNEST S. ZANE, Vice Chair for Academic Affairs

MICHAEL E. RAUSER, Vice Chair for Clinical Affairs

### **FACULTY**

John C. Affeldt  
Madhu R. Agarwal  
Sandra M. Akamine-Davidson  
Marco Barrera  
Pamela Y. Bekendam  
Peter D. Bekendam  
Paul A. Blacharski  
Larry D. Bowes  
Leslie A. Bruce-Lyle  
John P. Carlson  
Clement K. Chan  
Joyce E. Choe  
David M. Choi  
Paul Y. Chung  
William R. Clegg  
Denis J. Cline  
Jan L. Cooper

Carlindo da Reitz Pereira  
James L. Davidian  
Kimberly D. Davis  
Loren L. Denler  
Andrew P. Doan  
Jesse A. Dovich  
Jennifer A. Dunbar  
Joseph T. Fan  
Eric J. Friedrichsen  
David L. Gano  
Arthur W. Giebel  
Howard V. Gimbel  
James P. Guzek  
Elizabeth Hofmeister  
Kenneth W. Houchin  
Gary G. Huffaker  
Jeffrey J. Ing  
Wayne B. Isaeff  
Shyun Jeng  
Kelly S. Keefe  
Leila M. Khazaeni  
William H. Kiernan  
Harvey M. Lashier  
Gary M. Levin  
Glenville M. March  
Patrick G. McCaffery  
Sharon McCaffery  
Scott K. McClatchey  
David R. McGrew  
James I. McNeill  
Julio Narvaez  
Rosallynn H. Nguyen  
Young-Hyun Oh  
Sayjal J. Patel  
Richard D. Pesavento  
Barratt L. Phillips  
Corinna M. Pokorny  
Theresa P. Poindexter  
Frederick Ryan Prall  
Michael E. Rauser  
Steven O. Rimmer  
Robert C. Rosenquist, Jr.  
Nathan J. Rudometkin  
Jeff J. Rutgard  
Kimber L. Schneider  
Gerald R. Schultz

Mark D. Sherman  
Jodi O. Smith  
Balachandran Srinivasan  
Charles M. Stephenson, Sr.  
Kris J. Storkersen  
Mukesh B. Suthar  
Richard R. Tamesis  
David J. Tanzer  
Khaled A. Tawansy  
Laura A. Teasley  
Donald G. Tohm  
Keith G. Tokuhara  
Tom S. Tooma  
P. Harold Wallar  
Izak F. Wessels  
David L. Wilkins  
Brian R. Will  
Hilary L. Wilson  
Robert R. Wresch  
Jeanine N. Yamanaka  
Patricia S. Yoon  
Ernest S. Zane  
Steven E. Zane

The Department of Ophthalmology is committed to:

1. Provide an academic environment that will foster an in-depth understanding of the specialty of ophthalmology.
2. Provide education for students, residents, and fellows that prepares them for an academic, community, or mission practice.
3. Encourage and support clinical research.
4. Inspire students and residents to promote preventive ophthalmology.

### **Orthopaedic Surgery**

CHRISTOPHER M. JOBE, Chair

M. DANIEL WONGWORAWAT, Assistant Chair

#### **FACULTY**

Alan M. Afsari  
Karim Abdollahi  
David V. Anderson  
William W. Bowen  
John G. Bowsher  
William P. Bunnell  
Paul D. Burton  
Wayne K. Cheng

Gurbir Chhabra  
John M. Chrisler  
Ian C. Clarke  
Michael J. Coen  
Vincent J. Devlin  
Terry J. Dietrich  
Thomas K. Donaldson  
Brian S. Doyle  
Gary K. Frykman  
Navid Ghalambor  
Ronny G. Ghazal  
Barry S. Grames  
G. Allen Gustafson  
Gail E. Hopkins  
Bradley R. Hotchner  
Mary E. Hurley  
Claran H. Jesse  
Christopher M. Jobe  
D. Robert Johnson  
Nakul V. Karkare  
Imran A. Khan  
Shyam Kishan  
Martin Koffman  
Eric K. B. Lim  
Paul C. W. Liu  
D. Allan MacKenzie  
James D. Matiko  
Thomas W. McIndoe  
Clifford D. Merkel  
Kenneth Mudge  
Walter C. Nash  
Scott C. Nelson  
Matilal C. Patel  
Timothy A. Peppers  
Giuseppe Pezzotti  
Wesley P. Phipanatakul  
Eskild A. Reinhold  
Philip H. Reiswig  
Roy M. Rusch  
Herman R. Schoene  
Hiromu Shoji  
James E. Shook  
John C. Steinman  
Gurvinder S. Uppal  
G. Carleton Wallace  
Barry E. Watkins

James R. Watson  
George J. Wiesseman  
Paul Williams  
M. Daniel Wongworawat  
Virchel E. Wood  
David L. Wood  
Steven R. Yegge  
Leisure Yu

The Department of Orthopaedic Surgery provides a lecture series to junior medical students. The objectives of the series are to:

1. Introduce the specialty of orthopaedic surgery.
2. Teach physical diagnosis of the musculoskeletal system.
3. Review care of common orthopaedic conditions.
4. Survey orthopaedic subspecialties and orthopaedic surgery.
5. Stimulate students to consider a career in orthopaedic surgery.

## **Otolaryngology and Head and Neck Surgery**

ALFRED A. SIMENTAL, Chair

### **FACULTY**

Dennis F. Chang  
George D. Chonkich  
Christopher A. Church  
Laurence D. Fechter  
Timothy Jung  
Paul D. G. Kim  
John Y. G. Kim  
Miguel Krishnan  
Brenda Lonsbury-Martin  
Glen K. Martin  
David G. McGann  
George H. Petti, Jr.  
Mark Rowe  
Robert P. Rowe  
Alfred A. Simental  
Charles E. Stewart III  
Charles E. Stewart IV  
Helen Xu

## **Pathology and Human Anatomy**

BRIAN S. BULL, Chair

### **ANATOMY DIVISION**

**HUMAN ANATOMY**, PEDRO B. NAVA, JR., Vice Chair

### **PATHOLOGY DIVISION**

**PATHOLOGY**, DARRYL G. HEUSTIS, Vice Chair

**ANATOMIC PATHOLOGY**, G. WILLIAM SAUKEL, Head

**PEDIATRIC PATHOLOGY**, CRAIG W. ZUPPAN, Head

**LABORATORY MEDICINE**, JAMES M. PAPPAS, Head

**BLOOD BANK AND TRANSFUSION MEDICINE**, WESLEY TAIT STEVENS, Head

### **FACULTY**

#### *ANATOMY DIVISION*

Denise L. Bellinger

Bradley A. Cole

Paul C. Engen

Bertha C. Escobar-Poni

William M. Hooker

Michael A. Kirby

Anissa Y. Lacount

Paul J. McMillan

Kenneth P. Moses

Pedro B. Nava

Kerby C. Oberg

Kimberly J. Payne

Darrell K. Petersen

Salvador Soriano

William Wagner

Donald R. Wilson

Kenneth R. Wright

#### *PATHOLOGY DIVISION*

M. Rose Akin

J. Bruce Beckwith

Lee S. Berk

Albert F. Brown

Brian S. Bull

Kenneth A. Cantos

Jeffrey D. Cao

Donald R. Chase

Resa L. Chase

Evelyn B. Choo

Camilla J. Cobb

Joseph I. Cohen

Diane K. Eklund  
Joy I. Fridey  
G. Gordon Hadley  
Paul C. Herrmann  
Darryl G. Heustis  
Richard W. Hubbard  
W. William Hughes III  
Yuichi Iwaki  
Ralph A. Korpman  
John E. Lewis  
Roland E. Lonser  
Robert E. Moncrieff  
Jerald C. Nelson  
James M. Pappas  
Norman H. Peckham  
Mia C. N. Perez  
Ravi Raghavan  
Anwar S. S. Raza  
Heather L. Rojas  
Edward H. Rowsell  
Lawrence B. Sandberg  
G. William Saukel  
Frank R. Sheridan  
W. Tait Stevens  
Mildred L. Stilson  
Kevin S. Thompson  
Steven J. Trenkle  
Jun Wang  
Bo Ying Wat  
Pamela J. Wat  
Rodney E. Willard  
Craig W. Zuppan

The primary goal of the Department of Pathology and Human Anatomy is to educate capable, compassionate, scientifically minded physicians dedicated to the mission and objectives of Loma Linda University School of Medicine. The courses offered by the department provide a bridge to the clinical sciences, spanning the entire two years of the preclinical curriculum—from foundational principles of gross, microscopic, and developmental anatomy to modern pathophysiologic concepts. Progressive emphasis is placed on cultivating the student's ability to integrate basic knowledge of structure, function, and dysfunction of the human body with analytical skills in solving clinical problems.

The department is strongly committed to facilitating the development of both teaching and investigative skills on the part of faculty, graduate students, and residents.

## **Pediatrics**

RICHARD E. CHINNOCK, Chair

### **DIVISIONS/SECTIONS**

**ALLERGY/PULMONARY**, YVONNE F. FANOUS, Head

**CARDIOLOGY**, MICHAEL A. KUHN, Acting Head

**ENDOCRINOLOGY**, EBA H. HATHOUT, Head

**GASTROENTEROLOGY**, MANOJ C. SHAH, Head

**GENERAL**, RAVINDRA RAO, Head

**ADOLESCENT MEDICINE**, PUSHPA NOWRANGI, Section Chief

**FORENSIC MEDICINE**, CLARE M. SHERIDAN-MATNEY, Section Chief

**GENETICS**, ROBIN D. CLARK, Head

**HEMATOLOGY/ONCOLOGY**, ANTRANIK A. BEDROS, Head

**INFECTIOUS DISEASE**, JANE N. BORK, Head

**NEONATOLOGY**, RICARDO L. PEVERINI, Head

**NEPHROLOGY**, SHOBHA SAHNEY, Head

**NEUROLOGY**, STEPHEN ASHWAL, Head

**PEDIATRIC CRITICAL CARE MEDICINE**, SHAMEL A. ABD-ALLAH, Head

**PULMONOLOGY**, YVONNE F. FANOUS, Head

**RHEUMATOLOGY**, WENDY L. DE LA PENA, Head

### **FACULTY**

Gregory S. Aaen

Shamel A. Abd-Allah

Borhaan S. Ahmad

D. Jeanne Andrews

Barbara K. Ariue

Stephen Ashwal

Jerome Badaut

Freddie B. Balguma

Thomas J. Bahk

Joanne E. Baerg

Besh R. Barcega

Anna Bernus

Nerida T. Bates

Marti Baum

Jimmy B. Beck

Antranik A. Bedros

B. Lyn Behrens

Dilip R. Bhatt

Arlin B. Blood

Jane N. Bork

Danielle L. Borut

Lance E. Brown

Samuel D. Bruttomesso

Hong D. Bui

Gilberto Bultron  
William P. Bunnell  
Samuel R. Catalon  
Chul C. Cha  
Francis D. W. Chan  
Thomas J. Chen  
Richard E. Chinnock  
Alexandra M. Clark  
Robin D. Clark  
Stephen W. Corbett  
Ernesto Cruz  
Jill R. Cuni  
Drew C. Cutler  
Vo Minh Dai  
Althea P. Daniel  
Wendy L. De la Pena  
Douglas D. Deming  
Thomas K. Denmark  
Laurie M Dickson-Gillespie  
David K. Dong  
Jimmy H. Eguchi  
Janeth C. Ejike  
Edward N. Elmendorf III  
David G. Erickson  
Yvonne F. Fanous  
Wise N. Fargo  
Elba E. S. Fayard  
Nancy R. Fernando  
Ross Fisher  
Mary-Catherin Freier Randall  
Laura S. Funkhouser  
Maria C. Garberoglio  
A. Keyla Garcia  
Mitchell R. Goldstein  
Brent M. Gordon  
Steven M. Green  
Agnes K. S. Guban  
Shilpa Gupta  
Gregory T. Guldner  
Ernie Guzman  
Janet E. Halverson  
Aijaz Hashmi  
Eba H. Hathout  
Heather E. Henken  
Phuong Thao Hoang  
Andrew O. Hopper

Kristen T. Hougland  
W. Luke Huang  
Donald L. Janner  
Leo C. Jeng  
Nin Yeh K. Jiffry  
Leela Job  
Olga E. Kalbermatter  
Thomas A. Kaleita  
Pejman Katiraei  
William A. Kennedy  
Aqeel S. Khan  
Albert Kheradpour  
Grace Jee-Eun Kim  
Soo Youn Kim  
Sunhwa J. Kim  
Tommy Y. H. Kim  
Michael A. Kirby  
Marquelle J. Klooster  
Michael Kuhn  
Mary P. K. Lam  
Ranae L. Larsen  
Caroline H. Lee  
Sonny C. Y. Lee  
Thomas A. Linkhart  
Michelle H. Loh  
M. Eliana Lois-Wenzel  
Merrick R. Lopez  
John W. Mace  
Smita Malhotra  
Ravi Mandapati  
Lily B. Martorell-Bendezu  
Linda J. Mason  
Mark Massi  
Liesl A. Mathias  
Mudit Mathur  
Jorge R. Mazlumian  
Chalmers D. McClure  
Thurman A. Merritt  
David J. Michelson  
Saied Mirshahidi  
Farrukh Mirza  
Donald C. Moores  
Christopher L. Morris  
Joan D. Morris  
James A. Moynihan  
Jonathan J. Mthombeni

Neda F. Mulla  
James L. Munson  
Cinda L. Nauertz  
Maily T. Nguyen  
Thieu P. Nguyen  
Janet E. Ninnis  
Pushpa Nowrangi  
Grace C. Oei  
Charalambos Opsimos  
Kimberly N. Otsuka  
Nicole M. Oyas  
Sonal R. Patel  
Ricardo L. Peverini  
Jonnel W. Pomeroy  
Emmeline Pulido  
Charles D. Pumphrey  
Sonea I. Qureshi  
Ravindra Rao  
Sharon K. Riesen  
Martha E. Rivera  
Sarah M. Roddy  
Mark R. Rowe  
Kiarash Sadrieh  
Shobha Sahney  
Gerald Saks  
Constance J. Sandlin  
George A. Segura  
Manoj C. Shah  
Praful C. Shah  
Tamara M. Shankel  
Clare M. Sheridan-Matney  
Thomas S. Sherwin  
Joan L. Shu  
Stanford K. M. Shu  
Melissa D. Siccama  
Mary T. Silvia  
Gail M. Stewart  
James D. Swift  
Catherine A. Tan  
Andrea W. Thorp  
Cynthia H. Tinsley  
Stephen B. Treiman  
Meghan M. Trojnar  
Trinh T. Truong  
Diana L. Trupp  
Rosemarie Tweed

Edward J. Vargas  
Daved W. van Stralen  
Chad J. Vercio  
Hansen Wang  
Timothy D. Watson  
Stacey D. Wiles  
Karen A. Winston  
William A. Wittlake  
Valerie Y. M. Wong  
Sidney S. C. Wu  
Linda L. Yang  
George S. Yanni  
Kim Yee-Hamai  
Steven M. Yellon  
Sherri D. Yhip  
Peter D. Yorgin  
Lionel W. Young  
Amy D. Young-Snodgrass  
Darlene M. Zaft  
Kimberly R. Zimmerman

The mission of the Department of Pediatrics is to provide patient services, educational programs, research endeavors, child advocacy, and community service in a manner consistent not only with state-of-the-art science but also with Judeo-Christian values.

### **Physical Medicine and Rehabilitation**

MURRAY E. BRANDSTATER, Chair

#### **DIVISION**

**PAIN CONTROL**, LOWELL W. REYNOLDS, Head

#### **FACULTY**

Ziyad Ayyoub  
Murray E. Brandstater  
Beryl H. Bull  
Anne T. Cipta  
Kevan Z. Craig  
Michael J. Davidson  
Keith L. Drieberg  
Travis G. Fogel  
Michael J. Gilewski  
Gerald R. Goodlow  
Yvette A. Holness  
Divakara Kedlaya  
Jien Sup Kim  
Robertus H. Kounang

Daniel M. Kwon  
Joan T. Le  
Esther C. Lee  
Jonathan C. Lee  
Artemio R. Martin  
Cid Nazir  
John E. Owens  
Anita M. Pai  
Lowell W. Reynolds  
Michael D. Scott  
Scott R. Strum

The Department of Physical Medicine and Rehabilitation was established to develop clinical services in rehabilitation medicine and to offer resources for teaching and research in the field of rehabilitation. These clinical and academic activities cover a wide spectrum of clinical medicine but have as a central basis the notion that rehabilitation is a complex process involving not only multiple disciplines but also consideration of the patient in the broader context of the family and community. The psycho-social-spiritual aspects of rehabilitation complete the whole person focus, thus providing an opportunity for faculty and students to observe and experience patient care while meeting the goals and objectives of the School of Medicine.

### **Plastic and Reconstructive Surgery**

SUBHAS C. GUPTA, Chair

#### **FACULTY**

Ghada Y. Afifi  
Dennis K. Anderson  
Troy J. Andreasen  
Walter T. Y. Chang  
James Chui  
Norberto E. Collins  
Grace Elias  
Allen Gabriel  
Subhas C. Gupta  
Robert A. Hardesty  
Michael E. Hill  
Sharon L. Kalina  
Ravi V. Kiran  
Gurmander S. Kohli  
Ka Ming Li  
Mark C. Martin  
G. Patrick Maxwell  
Duncan A. G. Miles  
Daniel C. Mills  
Michael C. Pickart  
Anil P. Punjabi

Andrea O. Ray  
Charlotte Resch  
Frank R. Rogers  
Gordon H. Sasaki  
Mohan K. Sehdev  
Norman Y. Sogioka  
Maya C. Spaeth  
Stephen S. West  
A. Andrew Wongworawat

### **Preventive Medicine**

WAYNE S. DYSINGER, Chair

#### **FACULTY**

David Abbey  
Mihran H. Ask  
Frederick M. Bischoff  
Arlene F. Braham  
Marcus A. Braham  
Gilbert M. Burnham  
Michael A. Caruso  
Bonnie I. Chi-Lum  
Joseph H. Cummings  
T. Allan Darnell  
Ann L. Dew  
Hans A. Diehl  
David T. Dyjack  
P. William Dysinger  
Wayne S. Dysinger  
Linda H. Ferry  
Diana J. Fleming  
Dominique Fradin-Read  
Gary E. Fraser  
Eric K. Frykman  
Andrew H. Guo  
George E. Guthrie  
David Z. Hall  
Kenneth W. Hart  
Richard H. Hart  
Ronald P. Hattis  
Ionela O. Hubbard  
Jayakaran S. Job  
John H. Kelly  
Synnove M. F. Knutsen  
Stephen K. Kumar  
Louise McNitt

Susanne B. Montgomery  
Eric Ngo  
Warren R. Peters  
Floyd E. Petersen  
Ernest J. Prochazka  
Alfred K. Quansah  
John W. Rhee  
Douglas C. Richards  
Paula D. Scariati  
Stuart A. Seale  
Wilfred Shiu  
Heather T. Shover  
Kimberly L. Siegel  
Katherine E. Sljuka  
Bruce E. Smith  
Victor Sulit  
Larry L. Thomas  
Serena Tonstad  
Juna Tsao  
Loretta Wilber  
Dave A. Williams  
April E. Wilson

The Department of Preventive Medicine is involved in preventive medicine clinical care, education, and research for the School of Medicine. The department provides a comprehensive four-year preventive medicine curriculum to all medical students. Graduate medical education training is available in a general preventive medicine residency, an occupational medicine residency, an addiction medicine fellowship, and a combined family and preventive medicine residency. The department works with and supports the School of Public Health as well as various other Loma Linda programs in health promotion and epidemiology research projects, the most prominent of which is the Adventist Health Study. Preventive medicine faculty direct clinical services at the Center for Health Promotion, the Occupational Medicine Center, the Social Action Community (SAC) Health System clinics, and five separate Inland Empire university health services. A diverse faculty focus primary activities through the School of Medicine, the School of Public Health, the Jerry L. Pettis Memorial Veterans Medical Center, the San Bernardino County and Riverside County Health Departments, and various other regional and community entities.

**Psychiatry**

WILLIAM G. MURDOCH, JR., Chair

WILLIAM H. MCGHEE, Vice Chair

**FACULTY**

Julie C. Albert

Louis R. Alvarez

Donald L. Anderson

Karole S. Avila

Nenita Belen

Venkatesh G. Bhat

Andrew C. Blaine

Stephanie L. Bolton

William G. Britt III

Roger J. Cabansag

Clarence Carnahan, Jr.

Anca Chiritescu

Caron S. I. Christison

George W. Christison

Herman R. Clements

Richard T. Cranston

Scott M. Davis

Lorie T. DeCarvalho

Ramila Duwal

Kari M. Enge

Nabil S. Faltas

Mubashir A. Farooqi

Carlos R. Fayard

Ron Foo

Teresa Frausto

Monika Gierz

Raafat W. Girgis

George T. Harding IV

Mark G. Haviland

Jerry D. Hoyle

Durand F. Jacobs

Cameron J. Johnson

J. Patrick Johnson

Y. William Kim

Marilyn H. Kimura

Kevin M. Kinback

Winifred L. Klop

George Kopiloff

Maher S. Kozman

Donald J. Kurth

Henry L. Lamberton

Larry C. Lawrence  
William A. Lawrence  
Anne E. Linton  
Regina G. Liwnicz  
Michael B. Maskin  
J. Stephen Maurer  
William H. McGhee  
Charles Merideth  
Magdi Mikhael  
Olga Mora-Aldrich  
Wadsworth H. Murad  
William G. Murdoch  
Alan A. Nelson  
Thuy-Huynh T. Nguyen  
Jay M. Otero  
Faye D. Owen  
Bipin L. Patel  
Peter R. Przekop  
George J. Proctor  
Viswanatha Reddy  
John P. Riesenman  
Patricia J. D. Roth  
William G. Roth  
Neeta C. Saheba  
Mary Ann Schaepper  
Gregg A. Sentenn  
Conrado C. Sevilla  
Anthony S. Shin  
Diana Simon  
William R. Simpson  
John C. Stockdale  
Ahmad K. Tarar  
John D. F. Tarr  
John T. Thiel  
Mary E. Tysor-Tetley  
Khushro Unwalla  
Nicholaas-John Van Nieuwenhuysen  
E. Ray Verde  
Ronald Warnell  
Deane L. Wolcott  
April Wursten  
Eugene Y. Young

The Department of Psychiatry provides educational programs that include clinical training and research for medical students, psychiatry residents, and psychiatry fellows.

During the first and second years, the Department of Psychiatry directs the teaching of the behavioral sciences courses. In these interdisciplinary courses, lectures and demonstrations cover a broad range of human behavioral determinants—including the biology, psychology, sociology, and psychopathology of behavior. A holistic concept of behavior, including its spiritual components, is taught.

The third-year, six-week psychiatry clerkship includes: five weeks divided between two psychiatry treatment sites; and one week at an addiction treatment site. These clerkship experiences offer broad and varied training in the treatment of psychiatric problems of adults and children. Students also participate in an interactive, case-based seminar series.

Fourth-year medical students have the opportunity to take electives with psychiatry faculty in child and adult settings, as well as an intensive reading/discussion course in religion and psychiatry.

### **Radiation Medicine**

JERRY D. SLATER, Chair

DAVID A. BUSH, Vice Chair

#### **FACULTY**

Vladimir Bashkirov

Eleanor A. Blakely

Nathan R. Brandstater

David A. Bush

Dongrak Choi

James E. Currier

John F. Dicello

Cecile J. Favre

Abiel Ghebremedhin

Daila S. Gridley

Ryan S. Grover

B. Rodney Jabola

Adeel Kaiser

Venkata N. Lingampally

Lilia N. Loreda

Xian Luo

Xiao Wen Mao

Daniel W. Miller

Ivan C. Namihas, Jr.

Gregory A. Nelson

Ying Nie

Andre Obenaus

Baldev R. Patyal

Michael J. Pecaut

William Preston

Carl J. Rossi, Jr.

Reinhard W. Schulte

James M. Slater

Jerry D. Slater

Jian Tian

Roman Vlkolinsky  
 Ning Wang  
 Jerry R. Williams  
 Andrew J. Wroe

The fundamental goal of the Department of Radiation Medicine is to provide optimal care to patients by means of ionizing radiation, much of it using proton therapy, the hospital-based application of which was pioneered by the department. This care rests on the foundation of basic, translational, and clinical research—which, combined with patient education, is always pursued to ensure that patients and their families receive state-of-the-art treatment planning and delivery, follow-up and posttreatment care, and support.

## **Radiology**

DAVID B. HINSHAW, JR., Chair

### **DIVISIONS**

**ABDOMINAL IMAGING**, GREGORY E. WATKINS, Acting Head

**DIAGNOSTIC RADIOLOGY**, HANS SAATY, Head

**COMMUNITY RADIOLOGY**, RICHARD J. TULLY, Head

**COMPUTED BODY TOMOGRAPHY**, PHIROZE BILLIMORIA, Head

**OUTPATIENT DIAGNOSTIC RADIOLOGY (FMO)**, WON-CHUL BAE, Head

RICHARD. D. DUNBAR, Co-Head

### **DIAGNOSTIC ULTRASOUND**

**INPATIENT ULTRASOUND**, GLENN A. ROUSE, Head

**OUTPATIENT ULTRASOUND**, GERALD GRUBE, Head

**ENT RADIOLOGY**, NATHANIEL D. WYCLIFFE, Head

**ANGIO/INTERVENTIONAL RADIOLOGY**, DOUGLAS C. SMITH, Head

**MAGNETIC RESONANCE SCIENCES**, DAVID B. HINSHAW, JR., Head

**MUSCULOSKELETAL**, ALEXANDER J. CHIEN, Head

**NEURORADIOLOGY**, DANIEL K. KIDO, Head

**INTERVENTIONAL NEURORADIOLOGY**, J. PAUL JACOBSON, Head

**NUCLEAR RADIOLOGY**, GERALD A. KIRK, Head

**PEDIATRIC RADIOLOGY**, LIONEL W. YOUNG, Head

### **FACULTY**

Bruce T. Austin

Won-Chul Bae

Donald T. Barnes

Brenda L. Bartnik

Phiroze Billimoria

J. Timothy Blackwelder

Dale R. Broome

Patrick J. Bryan

Jerome Burstein

Alexander J. Chien

Christopher D. Cumings

Richard D. Dunbar  
John F. Feller  
Kendra L. Fisher  
Peggy J. Fritzsche  
Edward Gabriel  
Geoffrey A. Gardiner  
Arnold Z. Geller  
David W. Gentry  
Liliane H. Gibbs  
Gerald Grube  
Kathlene E. Guth  
E. Mark Haacke  
Sheri L. Harder  
Anton N. Hasso  
David B. Hinshaw, Jr.  
Barbara Holshouser  
J. Paul Jacobson  
Carl Jansen  
Daniel K. Kido  
Monika L. Kief-Garcia  
Gerald A. Kirk  
Shannon Kirk  
Evert Kuester  
Joseph G. Llaurodo  
George Y. Luh  
Jeanine A. McNeill  
Jon M. Miller  
M. John H. Miller  
Theodore R. Miller  
Michael Neglio  
Andre Obenaus  
Shailendri E. Philip  
Moussa Raiszadeh  
Glenn A. Rouse  
Hans Saaty  
Isaac Sanders  
Eloy E. Schulz  
James B. Slater  
Douglas C. Smith  
Jason C. Smith  
Walter L. Stilson  
Charles E. Stout  
Joseph R. Thompson  
Karen A. Tong  
Richard J. Tully  
Joseph S. Unis

Alix Vincent  
Gregory Watkins  
Michael A. Winkler  
James Wolfsen  
Beverly Wood  
Nathaniel D. Wycliffe  
Lionel W. Young

The purposes of the Department of Radiology are to provide:

1. Excellent patient services through imaging studies, special diagnostic procedures, and interventional procedures.
2. Educational programs that include research and clinical training for technologists, dosimetrists, physicists, medical students, postdoctoral fellows, radiology residents and fellows.
3. Research support through laboratory facilities and clinical facilities.

## **Urology**

HERBERT C. RUCKLE, Chair

### **FACULTY**

D. Duane Baldwin  
Gary A. Barker  
David A. Chamberlin  
Minh-Hang Chau  
Victor C. Ching  
H. Roger Hadley  
Noel T. C. Hui  
Paul Lui  
J. David Moorhead  
John C. Prince  
Joseph L. Raffel  
Herbert C. Ruckle  
Kristin M. Sanderson  
Michael A. Sanford  
Steven C. Stewart  
Robert R. Torrey, Jr.  
Christopher Tsai

## Microbiology and Molecular Genetics—SM

M.S., Ph.D.

HANSEL M. FLETCHER, Program Coordinator

### FACULTY

#### *PRIMARY APPOINTMENTS*

Nerida Bates

Carlos A. Casiano

Alan P. Escher

Hansel M. Fletcher

Istvan Fodor

Lora M. Green

Daila S. Gridley

Mark S. Johnson

John E. Lewis

Saied Mirshahidi

Stephen Nyirady

Ubaldo Soto

Lawrence Sowers

Barry L. Taylor

Kylie J. Watts

Anthony J. Zuccarelli

#### *SECONDARY AND ADJUNCT APPOINTMENTS*

Edouard M. Cantin

William H. R. Langridge

Yiming Li

Michael B. Lilly

Ren-Jang Lin

Giuseppe A. Molinaro (Emeritus)

John J. Rossi

Donna D. Strong

Nathan Wall

### MISSION

It is the mission of the Loma Linda University basic science programs to further the teaching and healing ministry of Jesus Christ by fostering scholarly excellence leading to the discovery, integration, and dissemination of biomedical knowledge.

### PROGRAM STUDENT LEARNING OUTCOMES

1. Students will demonstrate a broad knowledge of the biomedical sciences.
2. Students will demonstrate subject mastery in molecular, cellular, and integrative aspects of microbiology and molecular genetics.

3. Students will interpret the current literature in microbiology and molecular genetics.
4. Students will make original contributions to the body of biomedical knowledge.
5. Students will demonstrate an understanding of the principles of scientific and professional ethics.
6. Students will understand the process of applying for external funding.\*

\* This objective is not applicable to M.S. degree students.

## GENERAL INFORMATION

The basic sciences of the School of Medicine offer graduate programs with emphases in anatomy, biochemistry, microbiology, pharmacology, and physiology. The Ph.D. degree curriculum is designed to prepare students for a career in independent research and teaching in an academic, clinical, or biotechnology setting. Students may enter any of these five Ph.D. degree programs by applying to the Integrated Biomedical Graduate Studies Program. After completing a common first-year core curriculum, students will select a program and a mentor for the completion of their studies, during which advanced courses and laboratory work allow students to fully develop an area of research interest and expertise. Students usually rotate through up to three research laboratories before selecting a research advisor.

The M.S. degree course of study provides education appropriate for technicians involved in biomedical research and for medical technologists seeking career advancement. A pathway to combined M.D./Ph.D. degrees is also offered.

The School of Medicine's Division of Microbiology and Molecular Genetics offers curricula leading to the Doctor of Philosophy and Master of Science degrees. The core curriculum provides a broad background in molecular biology, immunology, and medical microbiology and infectious diseases. Advanced courses allow each student to develop fully an area of interest. Research strengths of the department include: signal transduction in bacteria, molecular genetics of virulence in bacteria, mechanisms of oxidative stress resistance, mechanisms of cell death, cellular and tumor immunology, autoimmunity, chaperonins and protein folding, mechanisms of posttranslational modification, cancer biology, and DNA restriction modification.

## M.S. AND PH.D. DEGREES

The School of Medicine's Division of Microbiology and Molecular Genetics offers study in the Microbiology and Molecular Genetics Program leading to the Master of Science and the Doctor of Philosophy degrees. These degree curricula provide a broad microbiology and molecular genetics background while allowing the student to develop fully a special area of research interest.

The thesis or research Master of Science degree provides training for individuals who will become technicians involved in biomedical research in universities or in the biotechnology industry, and for medical technologists seeking specialized research training. The nonthesis Master of Science degree provides content appropriate for medical technologists preparing for the specialist in microbiology certification; for secondary teachers seeking advanced training in areas such as molecular biology, immunology, or microbiology; and for students seeking admission to a professional school, such as medicine or dentistry.

The Doctor of Philosophy degree is designed to prepare students for a career in independent research and teaching in a university, clinical, or biotechnology environment. Doctoral degree students are expected to develop creativity and independence in addition to technical skills.

### **Combined degrees**

Combined degree (Ph.D./M.D. and M.S./M.D.) options are also available. The combination of an M.S. degree with a professional degree provides additional content and research experience as a background for postgraduate medical or dental education. The combination of a Ph.D. degree with a professional degree prepares the student for a future in academic medicine or dentistry—combining research, teaching, and clinical practice.

The combined degrees are described at the end of Section III in this CATALOG.

### **Prerequisite**

Applicants must have a bachelor's degree from an accredited U.S. college or the equivalent from a foreign university. Foreign applicants must have their transcripts evaluated by an accredited agency for equivalency to a U.S. degree. Entrance requirements include a full year of each of the following undergraduate courses: general biology, general chemistry, organic chemistry, and general physics. Upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended. Calculus is also recommended. Results of the general test of the Graduate Record Examination (GRE) must be submitted. Applicants whose first language is not English must submit scores from the TOEFL (Test of English as a Foreign Language). The program reserves the right to decide on the equivalence of courses presented by the applicant.

### **First-year curriculum (Ph.D. degree)**

The first-year curriculum includes a course sequence taught by interdisciplinary faculty that integrates all the disciplines of the biomedical basic science areas—moving from molecules through cellular mechanisms to integrated systems. In addition, a supplemental course covers research-related topics—such as scientific communication and integrity, information handling, and statistics; as well as successful grant writing. Students learn of new developments in the biomedical sciences through weekly seminars, and they gain presentation skills of their own in a weekly student presentation seminar series. During the subsequent years, formal courses continue to broaden and integrate into a meaningful whole an understanding of the clinical consequences of cellular events.

### **Religion requirement**

Students in the Master of Science (M.S.) degree programs are required to complete one 3-unit, graduate-level religion class (RELT 617 Seminar in Religion and the Sciences). Students in the Ph.D. degree program are required to complete three graduate-level religion courses of 3 or more units each. These must include RELT 617; as well as RELE 525 Ethics for Scientists and RELR 588 Personal and Family Wholeness. A course in biblical studies (RELT 588, RELT 559, RELT 560, RELT 564, or RELT 565) may be substituted for either the ethical or relational course.

### **Research units**

A student will at all times have registration in research units. An IP will be assigned until the student registers for new units. The units should be spread out over the course of time it takes to complete thesis or dissertation research satisfactorily. An IP may not be carried for longer than five quarters.

## MICROBIOLOGY AND MOLECULAR GENETICS—M.S.

A minimum of 45 units is required for the M.S. degree, as detailed in the table below. Two options, a research track and a course work track, are available. Students must maintain a G.P.A. of at least 3.0. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

### Course work track

Under this plan, the student fulfills the total unit requirement by taking additional microbiology and molecular genetics electives. The student takes a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

### Research track

Under this plan, the student fulfills the core requirements and also carries out research that culminates in a thesis. The student must pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

## MICROBIOLOGY AND MOLECULAR GENETICS—PH.D.

For the Ph.D. degree, students must complete a minimum of 77 units, as detailed in the table below, and must maintain a G.P.A. of at least 3.0. In addition, doctoral students are required to pass both written and oral comprehensive examinations in order to advance to candidacy. They must successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

Basic science core		MS		
		Course- work	MS Research	PhD
IBGS 501	Biomedical Communication and Integrity	2.0	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0	2.0
IBGS 503	Biomedical Grant Writing			2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I	8.0	8.0	8.0
IBGS 512	Cellular Mechanisms and Integrated Systems II	8.0	8.0	8.0
IBGS 513	Cellular Mechanisms and Integrated Systems III	8.0	8.0	8.0
IBGS 521	Cellular Mechanisms and Integrated Systems I Journal Club		2.0	
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2.0	2.0	2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2.0	2.0	2.0
Totals		32.0	34.0	34.0

Major		MS		
		Course- work	MS Research	PhD
MICR ____	Graduate Microbiology Elective (—) Must include at least 6 units in a didactic, literature-based course	7.0		9.0
MICR 530	Immunology			3.0
Totals		7.0	—	12.0

Seminars		MS		
		Course- work	MS Research	PhD
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1.0)		1.0	2.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar (1.0)	Registration and attendance required every quarter in residence, but units do not count toward total required for graduation	—	—
Totals		1.0	2.0	3.0

Religion		MS		
		Course- work	MS Research	PhD
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
Totals		3.0	3.0	9.0

Research/Dissertation or Thesis		MS		
		Course- work	MS Research	PhD
IBGS 696	Research Rotations (1.0)			2.0
MICR 697	Research (1.0-7.0)		6.0	15.0
Totals		—	6.0	17.0
<b>Overall Totals</b>		<b>43.0</b>	<b>45.0</b>	<b>75.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree curriculum.

# Pharmacology—SM

M.S., Ph.D.

JOHN BUCHHOLZ, Program Coordinator

## FACULTY

### *PRIMARY APPOINTMENTS*

Eileen Brantley  
John Buchholz  
Jiping Tang  
Leonard Werner  
Sean M. Wilson  
Kangling Zhang  
Lubo Zhang

### *SECONDARY AND ADJUNCT APPOINTMENTS*

Lincoln P. Edwards  
David A. Hessinger  
William Pearce  
Lawrence Sowers

## MISSION

It is the mission of the Loma Linda University basic science programs to further the teaching and healing ministry of Jesus Christ by fostering scholarly excellence leading to the discovery, integration, and dissemination of biomedical knowledge.

## PROGRAM STUDENT LEARNING OUTCOMES

1. Students will demonstrate a broad knowledge of the biomedical sciences.
2. Students will demonstrate subject mastery in molecular, cellular, and integrative aspects of pharmacology.
3. Students will interpret the current literature in pharmacology.
4. Students will make original contributions to the body of biomedical knowledge.
5. Students will demonstrate an understanding of the principles of scientific and professional ethics.
6. Students will understand the process of applying for external funding.\*

\* This objective is not applicable to M.S. degree students.

## GENERAL INFORMATION

The basic sciences of the School of Medicine offer graduate programs with emphases in anatomy, biochemistry, microbiology, pharmacology, and physiology. The Ph.D. degree curriculum is designed to prepare students for a career in independent research and teaching in an academic or biotechnology setting. Students may enter any of these five Ph.D. degree programs by applying to the Integrated Biomedical Graduate Studies Program. After completing a common first-year core curriculum, students

will select a program and a mentor for the completion of their studies, during which advanced courses and laboratory work allow the student to fully develop an area of research interest and expertise. Students usually rotate through up to three research laboratories before selecting a research advisor.

The M.S. degree curriculum provides education appropriate for technicians involved in biomedical research and for medical technologists seeking career advancement. A pathway to combined M.D./Ph.D. degrees is also offered.

The School of Medicine's Division of Pharmacology offers curricula leading to the Doctor of Philosophy and Master of Science degrees. The core curriculum provides a broad background in pharmacology-related issues and approaches. Advanced courses allow each student to develop fully an area of interest. Research strengths of the program include: cardiovascular, neurological, developmental, pulmonary, and molecular pharmacology.

### **M.S. AND PH.D. DEGREES**

The School of Medicine's Division of Pharmacology offers study in the Pharmacology Program leading to the Master of Science and the Doctor of Philosophy degrees. The Master of Science degree is not available as an option for entering students. These degree programs provide a broad biochemical background while allowing the student to fully develop a special area of research interest. The Master of Science degree provides content appropriate for persons preparing to teach at the secondary level or in related professional school areas, or for persons intending to pursue careers as research technicians. The Doctor of Philosophy degree is designed to prepare the graduate for a career in independent research and teaching in university, clinical, biotechnological, or government environments. Ph.D. degree students are expected to develop creativity and independence in addition to technical skills.

### **Combined degrees**

Combined degree (Ph.D./M.D. and M.S./M.D.) options are also available. The combination of an M.S. degree with a professional degree provides additional content and research experience as a background for postgraduate medical or dental education. The combination of a Ph.D. degree with a professional degree prepares the student for a future in academic medicine or dentistry—combining research, teaching, and clinical practice.

The combined degrees are described at the end of Section III in this CATALOG.

### **Prerequisite**

Applicants must have a bachelor's degree from an accredited U.S. college or the equivalent from a foreign university. Foreign applicants must have their transcripts evaluated by an accredited agency for equivalency to a U.S. degree. Entrance requirements include a full year of each of the following undergraduate courses: general biology, general chemistry, organic chemistry, and general physics. Upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended. Calculus is also recommended. Results of the general test of the Graduate Record Examination (GRE) must be submitted. Applicants whose first language is not English must submit scores from the TOEFL (Test of English as a Foreign Language). The program reserves the right to decide on the equivalence of courses presented by the applicant.

### **First-year curriculum (Ph.D. degree)**

The first-year curriculum includes a course sequence taught by interdisciplinary faculty that integrates all the disciplines of the biomedical basic science areas—moving from molecules through cellular mechanisms to integrated systems. In addition, a supplemental course covers research-related

topics—such as scientific communication and integrity, information handling, and statistics; as well as successful grant writing. Students learn of new developments in the biomedical sciences through weekly seminars, and they gain presentation skills of their own in a weekly student presentation seminar series. During the subsequent years, formal courses continue to broaden and integrate into a meaningful whole an understanding of the clinical consequences of cellular events.

### **Religion requirement**

Students in the Master of Science (M.S.) degree programs are required to complete one 3-unit, graduate-level religion class (RELT 617 Seminar in Religion and the Sciences). Students in the Ph.D. degree curriculum are required to complete three graduate-level religion courses of 3 or more units each. These must include RELT 617; as well as RELE 525 Ethics for Scientists, and RELR 588 Personal and Family Wholeness. A course in biblical studies (RELT 588, RELT 559, RELT 560, RELT 564, or RELT 565) may be substituted for either the ethical or relational course.

### **Research units**

A student will at all times have registration in research units. An IP will be assigned until the student registers for new units. The units should be spread out over the course of time it takes to complete thesis or dissertation research satisfactorily. An IP may not be carried for longer than five quarters.

## **PHARMACOLOGY—M.S.**

Two options, a research track and a course work track, are available. A minimum of 48 units is required for the M.S. degree, as detailed in the table below. Students must maintain a G.P.A. of at least 3.0, and they must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

### **Course work track**

Under this plan, the student fulfills the total unit requirements by taking additional electives. The student takes a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

### **Research track**

Under this plan, the student fulfills the core requirements and also carries out research that culminates in a thesis. The student must pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

## **PHARMACOLOGY—PH.D.**

For the Ph.D. degree, students must complete a minimum of 75 units, as detailed in the table below, and must maintain a G.P.A. of at least 3.0. In addition, doctoral students are required to pass both written and oral comprehensive examinations in order to advance to candidacy; and they must successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

Basic science core		MS		
		Course- work	MS Research	PhD
IBGS 501	Biomedical Communication and Integrity	2.0	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0	2.0
IBGS 503	Biomedical Grant Writing			2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I	8.0	8.0	8.0
IBGS 512	Cellular Mechanisms and Integrated Systems II	8.0	8.0	8.0
IBGS 513	Cellular Mechanisms and Integrated Systems III	8.0	8.0	8.0
IBGS 521	Cellular Mechanisms and Integrated Systems I Journal Club		2.0	2.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2.0	2.0	2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2.0	2.0	2.0
Totals		32.0	34.0	36.0

Major		MS		
		Course- work	MS Research	PhD
PHRM 554	Neuropharmacology	4.0	4.0	4.0
PHRM 564	Cardiovascular and Renal Pharmacology	3.0	3.0	3.0
PHRM 584	Drug Metabolism and Biochemical Pharmacology	4.0	4.0	4.0
Totals		11.0	11.0	11.0

Seminars		MS		
		Course- work	MS Research	PhD
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1.0)			2.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar (1.0)	—	—	—
		Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.		
Totals		1.0	1.0	3.0

Religion		MS		
		Course- work	MS Research	PhD
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
Totals		3.0	3.0	9.0

Research/Dissertation or Thesis		MS		
		Course- work	MS Research	PhD
IBGS 696	Research Rotations (1.0)			2.0
PHRM 697	Research (1.0-6.0)			15.0
Totals		—	—	17.0
<b>Overall Totals</b>		<b>47.0</b>	<b>49.0</b>	<b>76.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree curriculum.

## Physiology—SM

M.S., Ph.D.

JOHN H. ZHANG, Program Coordinator

### FACULTY

#### *PRIMARY APPOINTMENTS*

Danilyn M. Angeles

Daisy De Leon

Marino De Leon

Charles A. Ducsay

Raymond G. Hall, Jr.

David A. Hessinger

Lawrence D. Longo

Eugenia Mata-Greenwood

William J. Pearce

Gordon G. Power

Jiping Tang

Steven M. Yellon

John Zhang

#### *SECONDARY AND ADJUNCT APPOINTMENTS*

Stephen Ashwal

Eileen Brantley

John N. Buchholz

Philip J. Chan

Subburaman Mohan

Andre Obenaus

Philip J. Roos

Robert W. Teel

Glyne U. Thorington

Sean M. Wilson

Zhice Xu

Lubo Zhang

### MISSION

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### PROGRAM STUDENT LEARNING OUTCOMES

1. Students will demonstrate a broad knowledge of the biomedical sciences.
2. Students will demonstrate subject mastery in molecular, cellular, and integrative aspects of physiology.

3. Students will interpret the current literature in physiology.
4. Students will make original contributions to the body of biomedical knowledge.
5. Students will demonstrate an understanding of the principles of scientific and professional ethics.
6. Students will understand the process of applying for external funding.\*

\* This objective is not applicable to M.S. degree students.

## GENERAL INFORMATION

The basic sciences of the School of Medicine offer graduate programs with emphases in anatomy, biochemistry, microbiology, pharmacology, and physiology. The Ph.D. degree curriculum is designed to prepare students for a career in independent research and teaching in an academic or biotechnology setting. Students may enter any of these five Ph.D. degree curriculums by applying to the Integrated Biomedical Graduate Studies Program. After completing a common first-year core curriculum, the student selects a program and a mentor for the completion of his or her studies, during which advanced courses and laboratory work allow the student to fully develop an area of research interest and expertise. Students usually rotate through up to three research laboratories before selecting a research advisor.

The M.S. degree course of study provides education appropriate for technicians involved in biomedical research and for medical technologists seeking career advancement. A pathway to combined M.D./Ph.D. degrees is also offered.

The School of Medicine's Physiology Program offers programs leading to the Doctor of Philosophy and Master of Science degrees. The graduate program in physiology provides a Christian environment in which students may pursue curricula oriented to their specific interests. Individual attention is assured by maintenance of a small student/faculty ratio. A research-oriented graduate curriculum leading to the Ph.D. degree is designed to provide graduate students with the information and tools needed to succeed as independent lifelong learners and investigators. The School of Medicine's Division of Physiology provides unique research training opportunities in the biomedical sciences for graduate students. Areas of research excellence that are supported by nationally competitive extramural funding include: perinatal biology, health disparities, neurosciences, and cardiovascular science.

## M.S. AND PH.D. DEGREES

The School of Medicine's Division of Physiology offers study in the Physiology Program leading to the Master of Science and the Doctor of Philosophy degrees. These degree programs provide a broad physiology background education and cutting-edge research opportunities for students to develop in specific research areas.

The goal of the thesis or research Master of Science degree is to provide training opportunities for individuals who will pursue technical jobs in biomedical research laboratories either in universities or in biotechnology industry; or for students who will continue education in other professional schools, including medicine or dentistry.

The Doctor of Philosophy degree is designed to prepare the graduate for a career in independent research and teaching in university, clinical, biotechnological, or government environments. Doctoral degree students are expected to develop creativity and independence, in addition to technical skills.

## Combined degrees

Combined degrees (Ph.D./M.D. and M.S./M.D.) options are also available. The combination of an M.S. degree with a professional degree provides additional content and research experience as a background

for postgraduate medical or dental education. The combination of a Ph.D. degree with a professional degree prepares the student for a future in academic medicine or dentistry—combining research, teaching, and clinical practice.

The combined degrees are described at the end of Section III in this CATALOG.

### **Prerequisite**

Applicants must have a bachelor's degree from an accredited U.S. college or the equivalent from a foreign university. Foreign applicants must have their transcripts evaluated by an accredited agency for equivalency to a U.S. degree. Entrance requirements include a full year of each of the following undergraduate courses: general biology, general chemistry, organic chemistry, and general physics. Upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended. Calculus is also recommended. Results of the general test of the Graduate Record Examination (GRE) must be submitted. Applicants whose first language is not English must submit scores from the TOEFL (Test of English as a foreign language). The program reserves the right to decide on the equivalence of courses presented by the applicant.

### **First-year curriculum (Ph.D. degree)**

The first-year curriculum includes a course sequence taught by interdisciplinary faculty that integrates all the disciplines of the biomedical basic science areas—moving from molecules through cellular mechanisms to integrated systems. In addition, a supplemental course covers research-related topics—such as scientific communication and integrity, information handling, and statistics; as well as successful grant writing. Students learn of new developments in the biomedical sciences through weekly seminars, and they gain presentation skills of their own in a weekly student presentation seminar series. During the subsequent years, formal courses continue to broaden and integrate into a meaningful whole an understanding of the clinical consequences of cellular events.

### **Religion requirement**

Students in the Master of Science (M.S.) degree curriculum are required to complete one 3-unit, graduate-level religion class (RELT 617 Seminar in Religion and the Sciences). Students in the Ph.D. degree curriculum are required to complete three graduate-level religion courses of 3 or more units each. These must include RELT 617 as well as RELE 525, Ethics for Scientists and RELR 588, Personal and Family Wholeness. A course in biblical studies (RELT 588, RELT 559, RELT 560, RELT 564, or RELT 565) may be substituted for either the ethical or relational course.

### **Research units**

A student will at all times have registration in research units. An IP will be assigned until the student registers for new units. The units should be spread out over the course of time it takes to complete thesis or dissertation research satisfactorily. An IP may not be carried for longer than 5 quarters.

### **PHYSIOLOGY—M.S.**

A minimum of 45 units is required for the M.S. degree, as detailed in the table below. Two options, a research track and a course work track, are available. Students must maintain a G.P.A. of at least 3.0. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

### Course work track

Under this plan, the student fulfills the total unit requirement by taking additional electives. The student takes a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

### Research track

Under this plan, the student fulfills the core requirements and also carries out research that culminates in a thesis. The student must pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

### PHYSIOLOGY—PH.D.

For the Ph.D. degree, students must complete a minimum of 75 units, as detailed in the table below, and must maintain a G.P.A. of at least 3.0. In addition, doctoral students are required to pass both written and oral comprehensive examinations in order to advance to candidacy. They must successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree. Students must adhere to all University and program policies as published in the *Student Handbook*, University CATALOG, or "Student Guide." Policies and requirements are subject to change.

Basic science core		MS		
		Course- work	MS Research	PhD
IBGS 501	Biomedical Communication and Integrity	2.0	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0	2.0
IBGS 503	Biomedical Grant Writing			2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I	8.0	8.0	8.0
IBGS 512	Cellular Mechanisms and Integrated Systems II	8.0	8.0	8.0
IBGS 513	Cellular Mechanisms and Integrated Systems III	8.0	8.0	8.0
IBGS 521	Cellular Mechanisms and Integrated Systems I Journal Club			2.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2.0	2.0	2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2.0	2.0	2.0
Totals		32.0	32.0	36.0

Major		MS		
		Course- work	MS Research	PhD
PHSL ____	Graduate Physiology Elective and/or statistics courses.	6.0		10.0
Totals		6.0	—	10.0

<b>Seminars</b>		<b>MS</b>		
		<b>Course- work</b>	<b>MS Research</b>	<b>PhD</b>
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1.0)		1.0	2.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar (1.0)	—	—	—
		Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.		
<b>Totals</b>		1.0	2.0	3.0

<b>Religion</b>		<b>MS</b>		
		<b>Course- work</b>	<b>MS Research</b>	<b>PhD</b>
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
<b>Totals</b>		3.0	3.0	9.0

<b>Research/Dissertation or Thesis</b>		<b>MS</b>		
		<b>Course- work</b>	<b>MS Research</b>	<b>PhD</b>
IBGS 696	Research Rotations (1.0)			2.0
PHSL 697	Research (1.0-8.0)		6.0	15.0
<b>Totals</b>		—	6.0	17.0
<b>Overall Totals</b>		<b>42.0</b>	<b>43.0</b>	<b>75.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

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## Dean's Welcome

Welcome to the School of Nursing, where you will receive an education that will prepare you for a life of Christian service. This Catalog will introduce you to the programs of the school and give you information on progression and services available to help you reach your goal.

For more than 100 years, the school has educated nurses to serve the needs of humanity. We look forward to working with you on your academic journey here at the school.

Our goal is to provide an environment where you can gain the knowledge and skills to become a caring, competent, professional nurse. The faculty, staff, and administration are committed to ensuring that those who study here will develop to the fullest potential and become nurses capable of fulfilling the University's mission—with God's help—"To make man whole."



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*Marilyn M. Herrmann*

Marilyn Hermann, Ph.D., RN  
Dean, School of Nursing

## School Foundations

### HISTORY

The School of Nursing, established in 1905, was the first in a group of schools that in 1961 became Loma Linda University. In 1907, the first class to graduate included seven students—five women and two men. As the school developed and became a college-based program rather than a hospital diploma program, the baccalaureate degree commenced in 1949. The Master of Science degree was granted in 1957. The Doctor of Philosophy degree was added to the existing programs of the school, with the first class starting in 2002.

The School of Nursing programs received accreditation by the National League for Nursing (NLN) (61 Broadway, New York, NY 10006) in 1951. The most recent accreditation for the B.S. and M.S. degree curricula (1999) was by the Commission on Collegiate Nursing Education (CCNE) (One Dupont Circle NW, Suite 530, Washington, DC 20036-1120) in 1999. The California Board of Registered Nursing (P.O. Box 944210, Sacramento, CA 94244-2100) granted continuing approval in 2008. Consumers are encouraged to contact CCNE or BRN with comments about the program.

### AGENCY MEMBERSHIP

The School of Nursing holds agency memberships and actively participates in the following major professional organizations: American Association of Colleges of Nursing, National League for Nursing, and Western Institute for Nursing.

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The School of Nursing holds agency membership and actively participates in the following major professional organizations: American Association of Colleges of Nursing, National League for Nursing, and Western Institute for Nursing.

## Our Mission

The mission of the School of Nursing, in accord with the comprehensive mission of Loma Linda University, is the education of professional nurses who are dedicated to excellence in nursing science. Individuals from diverse ethnic, cultural, and racial backgrounds are encouraged to embrace opportunities for lifelong growth and satisfaction from a career committed to health care. Baccalaureate and graduate nursing programs contribute to the development of expert clinicians, educators, administrators, and researchers who benefit society by providing and improving delivery of whole person care to clients—individuals, families, groups, and communities. Committed to Christian service and distinctive Seventh-day Adventist ideals, the school seeks to reflect God's love through its teaching and healing ministry.



## Learning Outcomes

### UNDERGRADUATE DEPARTMENT

1. **Liberal education.** Students demonstrate integration of concepts from general education into their baccalaureate generalist nursing practice.
2. **Basic organizational and systems leadership.** Students apply principles of organizational and systems leadership into quality care and patient safety.
3. **Evidence-based practice.** Students use scholarship as a basis for evidence-based practice.
4. **Technology.** Students apply information management and patient care technology to the practice of nursing.
5. **Leadership.** Students practice within the context of health care policy, finance, and regulatory environments.
6. **Collaboration.** Students employ interprofessional communication and collaboration to improve patient health outcomes.
7. **Prevention.** Students support clinical prevention through population health practices.
8. **Values.** Students demonstrate professionalism and professional values.
9. **Nursing practice.** Students integrate baccalaureate-level nursing skills into their practices.

### GRADUATE DEPARTMENT

#### Learning outcomes for Master of Science

The learning outcomes of the master's degree program are designed to prepare nurse leaders with a Christian perspective to enable them to contribute to professional nursing through clinical practice, teaching, and administration. Upon completion of the Master of Science degree, the graduate will:

1. Apply specialized knowledge and expertise in a selected clinical area, demonstrating the advanced nursing role.
2. Synthesize and guide appropriate applications of research findings as the foundation for evidence-based practice.
3. Collaborate with clients, health professionals, organizations, and other stakeholders for the purpose of improving the quality and delivery of health care and influencing health policy.
4. Develop personal and professional wholeness through lifelong inquiry, scholarly endeavor, and healthful living.
5. Demonstrate and promote ethical and compassionate Christian service, respecting the diverse experiences of others.
6. Have a foundation for doctoral studies.

#### Learning outcomes for Doctor of Nursing Practice

The learning outcomes of the DNP degree program are designed to prepare nurse leaders with a Christian perspective to enable them to contribute to professional nursing through clinical practice, teaching, and administration. Upon completion of the DNP degree, the graduate will:

1. Provides leadership in the use of information systems/technology and patient care technology for the improvement and transformation of health care.
2. Utilizes current scientific underpinnings for practice.

3. Promotes the use of clinical scholarship and analytical methods for evidence-based practice.
4. Participates in interdisciplinary collaboration for improving patient and population health outcomes.
5. Advocates for health care through policy analysis and development.
6. Applies organizational and systems leadership theory for quality improvement and systems thinking.
7. Demonstrates leadership in the promotion of advanced nursing practice and the nursing profession.
8. Incorporates into his/her practice the principles of clinical prevention and population health for improving the nation's health.

### **Learning outcomes for Doctor of Philosophy**

The primary learning outcomes of the doctoral program are designed to prepare nurse scientists and scholars with a Christian perspective for leadership in education, health care administration, and research within a global community. Upon completion of the Ph.D. degree, the nurse will.

1. Provide leadership in research, education, and/or health care administration within a global community.
2. Generate and disseminate knowledge relevant to the development of nursing science and practice.
3. Meet challenges with a wholistic perspective that encompasses social, cultural, political, ethical, and spiritual dimensions in the practice of scholarship.
4. Engage in interdisciplinary discourse and scholarship.

## Philosophy

In harmony with Loma Linda University and the Seventh-day Adventist Church, the School of Nursing believes that the aim of education and health care is the development of wholeness in those served. Individuals, created to reflect the wholeness of God's character, have been impaired by the entrance of sin, disease, and death. God's purpose is the restoration of each person to the original state at Creation. God works through human agencies to facilitate individual wholeness.

Nursing functions to assist individuals and societal groups to attain their highest potential of wholeness. Through a variety of roles, nurses put into practice a body of knowledge and a repertoire of skills to assist the human system with health problems. The School of Nursing provides an environment in which students and faculty can grow in professional competence and Christian grace.

In support of the philosophy, mission, and values of Loma Linda University and the philosophy, mission, and values of the School of Nursing, the faculty affirms the following beliefs:

- Learning is an interactive process that involves all of the learner's faculties.
- A learning environment nurtures the development of potential, promotes maturation of values, cultivates the ability to think critically and independently, and encourages a spirit of inquiry.
- Clinical experiences are essential to the development of professional and technical nursing competence.
- Students—influenced by the effect of physiological, psychological, sociocultural, developmental, and spiritual variables on their lives—learn in different ways and bring different meanings to the learning experience.
- Students participate in development of the science and practice of nursing.

## General Regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III gives the general setting for the programs of each school and outlines the subject and unit requirements for admission to individual professional options. It is important to review the requirements of specific options in the context of the general requirements applicable to all programs.

### STUDENT POLICIES

School of Nursing students are expected to adhere to the policies of Loma Linda University and the School of Nursing as presented in the *Student Handbook* and this CATALOG.

### STUDENT POLICIES

School of Nursing students are expected to adhere to the policies of the University and School of Nursing as presented in the Loma Linda *Student Handbook* under the heading "Standards of Academic Conduct Policy."

## Application and Admissions

The programs admissions committees of the University intend that an applicant to any of the schools is qualified for the proposed curriculum and is capable of profiting from the educational experience offered by this University. The admissions committees of the school accomplish this by examining evidence of scholastic competence, moral and ethical standards, and significant qualities of character and personality. Applicants are considered for admission only on the recommendation of the program in which study is desired.

### APPLICATION

Applications are invited from those interested in attending a Christian school of nursing and whose beliefs are consistent with the mission of Loma Linda University and the School of Nursing. Priority will be given to those coming from within the Seventh-day Adventist educational system.

Admission application information is located at <nursing.llu.edu>.

### Application deadlines for Undergraduate Department

Applicants seeking undergraduate admission must have the application process completed by the dates indicated in the following.

- Fall Quarter—March 31
- Winter Quarter—August 15
- Spring Quarter—November 1

### Application deadlines for Graduate Department

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following.

- ANP, FNP, CRNA
  - Fall Quarter—February 1
- PNP, Psych NP, CNS, Nurse Educator, Nursing Administration
  - Fall Quarter—April 1
  - Winter Quarter—August 1
  - Spring Quarter—November 1
- D.N.P.
  - Summer Quarter—February 1 (priority admission)
- Ph.D. (even years only)
  - Summer Quarter—March 1 (priority admission)

## ADMISSION REQUIREMENTS

Students entering the School of Nursing must complete Loma Linda University background check requirements, as indicated in Section II of this CATALOG; as well as health requirements, including immunizations and annual TB clearance. In addition, all School of Nursing students are required to have a valid cardiopulmonary resuscitation (CPR) certificate approved by the American Heart Association in order to take clinical nursing courses. Students are responsible for the annual renewal of their immunizations, TB clearance, and CPR cards.

International students, whose native language is not English, must take a test of English fluency. Minimum scores are: TOTFL, paper based—550; TOEFL, computer based—213; TOEFL, Internet based—80; IELTS—6.5; METLAB—76.

### Essential skills

The practice of professional nursing has minimum entry qualifications. Registered nurses are expected to have certain physical abilities as well as competencies in reasoning and thinking. The skills are considered essential to the practice of nursing and are therefore skills required of all applicants to the School of Nursing. These include the abilities indicated in the following four areas:

#### Psychomotor (physical) skills

- Work with inanimate objects including setting up, operating (controlling), manipulating, and handling.
- Stand, walk, carry, sit, lift up to fifty pounds, push, pull, climb, balance, stoop, crouch, kneel, turn, twist, crawl, and reach—within a clinical setting.
- Assess and intervene in the care of patients, using the physical senses—sight, touch, taste, smell, hearing.

#### Cognitive (thinking) skills

- Work with intangible data, such as numbers, symbols, ideas, and concepts.
- Perform mental cognition tasks, including problem solving, prioritizing, and accurate measuring; following instruction, and using cognitive skills to synthesize, coordinate, analyze, compile, compute, copy and compare.
- Communicate with others, using verbal and nonverbal skills. Recall written and verbal instructions, read and comprehend, and write clearly. Negotiate, instruct, explain, persuade, and supervise.

#### Affective (human relations) skills

- Interact positively with individuals and groups of people directly and indirectly.
- Control emotions appropriately and cope with stressful situations.
- Respond appropriately to criticism and take responsibility for one's own actions, behaviors, and learning.
- Evaluate issues and make decisions without immediate supervision.

**Task (work function) skills**

- Function independently on work tasks.
- Demonstrate safety awareness.
- Recognize potential hazards.
- Respond appropriately to changes in work conditions.
- Maintain attention and concentration for necessary periods.
- Perform tasks that require set limits.
- Ask questions and request assistance appropriately.
- Perform within a schedule requiring attendance.
- Carry a normal work load.

**Accommodations for disability**

It is Loma Linda University's policy to comply fully with the provisions of The Americans with Disabilities Act [42 U.S.C. Sec. 12131 (2) (1990)]. The School is committed to providing education—supported by services and reasonable accommodations for disabilities—to qualified applicants. It is the student's responsibility to notify the School of the needed accommodation for any disability by obtaining (from the Office of the Associate Dean who administers the student's program) a form provided for this purpose. The completed form and required supporting documentation need to be delivered to the Office of the Associate Dean for evaluation by appropriate University entities. Suitable and reasonable accommodation will be provided as necessary.

**UNDERGRADUATE DEPARTMENT ADMISSION CRITERIA****Generic baccalaureate nursing program**

The following are considered prerequisites for admission to the baccalaureate program in nursing:

1. A high school diploma or its equivalent from an accredited secondary school.
2. A completed background check.
3. Health clearance, including immunizations as outlined in the "Admission Policies and Information" in Section II.
4. A current first aid certificate.
5. Current cardiopulmonary resuscitation (CPR) certificate approved by the American Heart Association.
6. Prerequisite courses—
  - Intermediate algebra (or high school algebra II)
  - Introduction to physics (or high school physics)
  - Anatomy and physiology I and II (with laboratories)
  - Introduction to organic and biochemistry (with laboratories)
  - Microbiology (with laboratories)
  - Freshman English (one year)
  - General psychology
  - Introduction to sociology or anthropology
  - Physical education (two activity classes)
  - Humanities (16 units)

- Development psychology (life span)
  - Public speaking
7. Basic computer literacy.
  8. Cumulative G.P.A. of 3.0 on all college course work. Grades below a "C" are nontransferable.
  9. For students considering transfer of nursing course work, course descriptions or outlines will be required for clinical nursing courses in order for the school to determine the amount of transfer credit to be granted.
  10. Science courses must have been taken within five years or validated at Loma Linda University.
  11. Entrance tests required of all incoming students who are not registered nurses.
  12. For international students, all requirements indicated under "International Students" in Section II.
  13. An interview with the director of admissions and an onsite essay are required.

The Admissions Committee is looking for individuals who reflect a high degree of personal integrity, dependability, self-discipline, intellectual vigor, and a caring and thoughtful manner.

### **Accelerated baccalaureate nursing program**

This track is designed for the student with a bachelor's degree in another field. Students seeking this track must have the following:

- Cumulative 3.3 G.P.A. on college work
- Statistics with computer application laboratory

## **PROGRAMS/REQUIREMENTS FOR STUDENTS WITH NURSING LICENSES**

### **Licensed vocational nurse**

In addition to prerequisites listed for students admitted to the baccalaureate program without a previous college degree, the following information is applicable:

1. The applicant must be a licensed vocational nurse in the state of California.
2. Course work will be evaluated to determine transfer status in clinical nursing classes.
3. The licensed vocational nurse may choose to complete a bachelor's degree or the 45 quarter units of nursing as prescribed by the California State Board of Registered Nursing and be eligible to sit for the NCLEX-RN. This second option does not meet degree requirements.

For information and assistance regarding entrance, the student is invited to contact the School of Nursing Office of Admissions.

### **Registered nurse**

The applicant must meet the following requirements:

1. A high school diploma or its equivalent from an accredited secondary school.
2. A cumulative G.P.A. of 2.5.
3. Grades below a C are nontransferable.
4. Courses taken more than five years ago may not be accepted for transfer unless the registered nurse has been in active practice for at least one year during the past three years.

5. An interview with the RN-B.S. recruiter. The Admissions Committee is looking for individuals who reflect a high degree of personal integrity, dependability, self-discipline, intellectual vigor, and a caring and thoughtful manner.
6. Compliance with all requirements indicated under "International Students" in Section II.
7. An Associate in Science degree or diploma from an accredited school of nursing.
8. A license to practice nursing in California as a registered nurse.
9. Completed all nonnursing requirements or their equivalents on the lower division level. The applicant must have a minimum of 87 quarter (61 semester) units to be eligible for upper division status.

If the registered nurse (RN) is a graduate of an accredited nursing program, the nursing credits will be accepted as equivalent to the School of Nursing lower division courses. For unaccredited schools, or for additional information regarding transfer credit, see section on "Transfer Credit." Credit for 300-level nursing courses will be granted upon satisfactory completion of NRSG 337.

## **GRADUATE DEPARTMENT ADMISSIONS CRITERIA**

### **Master of Science degree admissions criteria**

The following criteria are required for admission to the Master of Science degree program in nursing:

1. A baccalaureate degree in nursing or its equivalent from an accredited program.
2. A 3.00 undergraduate G.P.A. (on a 4.00 scale), both cumulative and in the nursing major.
3. A standardized interview with graduate nursing faculty members.
4. Current registered nurse license.
5. Current California registered nurse license before enrollment in clinical nursing courses.
6. Nursing experience in the area of the desired major prior to beginning graduate study:
  - a. minimum of one year full-time experience as RN before beginning clinical courses;
  - b. minimum of one year current ICU experience for CRNA;
  - c. minimum of two years of current experience in a Level III NICU for neonatal nurse practitioner applicants.
7. Prerequisites: undergraduate statistics and research with satisfactory grades.
8. The Health Science Reasoning Test (HSRT), a test of critical thinking skills, must be taken within the past year.
9. An onsite essay required as part of the admissions packet. If the outcome is less than satisfactory, a graduate-level writing course will be required.

### **Post-master's certificate programs admissions criteria**

1. Completion of a master's degree in nursing with a clinical major from a program approved by the Commission on Collegiate Nursing Education (CCNE) or the National League for Nursing (NLN).
2. Current California RN licensure.

3. Clinical experience individually evaluated; minimum of one year of full-time experience in a tertiary or community setting; minimum of two years of current experience in a Level III NICU for neonatal nurse practitioner applicants.
4. Prerequisites: Graduate-level pathophysiology and advanced physical assessment.

### **Doctor of Nursing Practice program admissions criteria**

1. Master's degree (M.S.) in nursing from an accredited school
2. License to practice nursing in state of residence
3. Nurse practitioner license or certification in advanced practice for clinical track
4. G.P.A. of 3.2 or higher from M.S. program
5. Three letters of recommendation
6. Application with personal statement
7. Curriculum vitae or resume
8. Interview by faculty members in the Loma Linda University School of Nursing
9. Upon acceptance, letter of support from employing institution

### **Doctor of Philosophy program admissions criteria**

1. Preference given to applicants with master's degree in nursing.
2. Grade-point average minimum of 3.5 on a 4.0 scale or equivalent at the master's degree level.
3. Standardized Ph.D. interview with faculty.
4. Graduate Record Examination (GRE) (optional).
5. Test of English fluency for international students whose native language is not English, with the following minimum scores: TOEFL, paper based—550; TOEFL, computer based—213; TOEFL, Internet based—80; IELTS—6.0; METLAB—76.
6. Evidence of scholarly work.

## Student Life

Students should refer to the *Student Handbook* for a more comprehensive discussion of University and school expectations, regulations, and policies. Students need to familiarize themselves with the contents of the *Student Handbook*, which can be found online.

### PROGRAMS OF STUDY

The School of Nursing offers a baccalaureate degree curriculum that is designed to prepare competent, beginning-level professional nurses who are committed to excellence in practice and to Christian principles.

The master's degree in nursing program offered by the School of Nursing is designed to prepare nurses for Christian leadership in clinical practice, teaching, administration, or research.

The Doctor of Nursing Practice degree is designed to prepare nurses for Christian leadership in the clinical setting.

The Doctor of Philosophy degree program is designed to prepare nurse scholars for Christian leadership in education, administration, and research.

### STUDENT INVOLVEMENT

Students are encouraged to become actively involved in the Associated Students of Nursing. Student representatives are invited to attend the Undergraduate Faculty Council, Master's Faculty Council, Doctor of Nursing Practice Faculty Council, Doctor of Philosophy Faculty Council, Spiritual Life and Wholeness Committee, and Diversity Committee, where they may contribute to the decision-making process.

### STUDENT ORGANIZATIONS

The following student organizations enable students to participate in cultural, social, professional, and citizenship aspects of University life.

#### **Associated Students of Nursing (ASN)**

The ASN is a student organization of the School of Nursing. This association comprises all the students of nursing and is administered by elected students and two faculty sponsors. The objectives of this organization are to serve as a channel for communication between students and faculty, and to facilitate personal and professional growth by meaningful participation in all aspects of student life.

#### **Loma Linda University Student Association (LLUSA)**

The LLUSA has three purposes: to promote communication among students, to present students' views to the administration, and to assist in the programming of social and religious activities. The LLUSA provides opportunities to develop and refine a wide range of professional leadership and fellowship skills. The office is located in the Drayson Center. For more information, call 909/558-4978.

#### **Class organizations**

The members of the junior and senior classes elect officers and promote such projects and activities as constitute their major interests and concerns.

**HONOR SOCIETY: SIGMA THETA TAU INTERNATIONAL**

In 1975, LLUSN became an official chapter of Sigma Theta Tau International, the honor society for nursing. Students may be invited to become members if they meet the established criteria.

## Academic Policies and Practices

### UNDERGRADUATE DEPARTMENT

#### Academic residence

To qualify for an undergraduate degree from Loma Linda University, the student must take a minimum of 45 units at Loma Linda University; 32 of the units must be at the senior level. A minimum of three clinical nursing courses are required as part of these units.

#### Nursing courses

##### Nursing course grades

Most nursing courses in the undergraduate curriculum are divided into approximately equal components of theory and clinical laboratory practice. A grade for a nursing course represents a combination of the theory and the clinical laboratory grades. In order to pass a nursing course, a student must receive a grade equivalent to a C or above in both the theory and clinical laboratory sections of the course. To receive a passing grade in theory, the student must obtain a cumulative score of at least 76 percent on examinations within that course. A grade of C- or below places the student on provisional status and requires that the student repeat the course.

#### Percentage breakdown for grading

The undergraduate division of the School of Nursing uses the following percentages for computing grades:

95-100%	A
92-94%	A-
88-91%	B+
85-87%	B
82-84%	B-
79-81%	C+
76-78%	C
71-75%	C-
68-70%	D+
63-67%	D
Below 62%	F

#### Clinical experiences

Clinical experiences are under the direction of the course coordinator. The student has supervised experience under a clinical instructor in the care of patients. Tardiness or unexcused absences from clinical laboratory is cause for failure. Students must make up for absences due to extenuating circumstances (e.g., personal illness or death in the family). A fee of \$50 will be charged for make-up of clinical laboratory during nonclinical time.

Nursing students are required to practice in client care settings under the supervision of a registered nurse. Each student will be expected to be able to apply basic theoretical concepts to clinical practice by assessing, planning, implementing nursing procedures; and evaluating the care of individuals, families,

and communities. In the performance of routine nursing care, all students will function within the policies of the clinical agency and demonstrate the professional behavior outlined in the University CATALOG and the University *Student Handbook*.

Students are expected to be knowledgeable about clients and their problems and about the plans for care prior to actually giving care. They must come prepared for the clinical experience and must adequately assess a client, using the Neuman Systems Model. Students are expected to perform skills safely. Students whose performance is deemed unsafe may be dropped from the course.

## **Licensure**

To be eligible to write the NCLEX-RN examination, the student must have completed all required nursing course work listed in this CATALOG. Further, the student needs to be aware that, under the laws of California, a candidate for the examination is required to report all misdemeanor and felony convictions. If a candidate has a criminal history, the California Board of Registered Nursing will determine the eligibility of that individual to write the licensing examination.

## **Credit by examination**

### **Challenge/equivalency examination**

An undergraduate student may meet academic requirements by passing an examination at least equal in scope and difficulty to examinations in the course. Undergraduate students with prior education in nursing or in another health care profession are eligible to challenge nursing courses required for California state licensure. The applicant's background in health care theory and clinical experience must be commensurate with the theory and skills required for the course.

Challenge examinations in nursing courses include both a written examination covering theory and an examination of clinical competence. A fee is charged for a challenge examination. See the "Schedule of Charges" in this section for fees.

Progression to the next level in the program is permissible only after successful completion of the challenge examination. A grade of S is recorded for challenge credit earned by examination only after the student has successfully completed a minimum of 12 units of credit at this University with a G.P.A. of 2.0 or above.

### **Advanced placement program**

Credit toward graduation may be accepted by the school for an entering student who has passed one or more Advanced Placement (AP) examinations with a score of 3, 4, or 5. Records for AP courses must be sent directly from the College Board to University Records.

For specific policy and time limits regarding CLEP examinations, see "Academic Policies" in the University section of the CATALOG.

## **Repeating a course**

A grade of C (2.0) is the minimum passing grade for nursing and required cognate courses. Required cognates include: epidemiology, ethics, nutrition, statistics, and writing. Any nursing or named cognate course taken while a student at Loma Linda University School of Nursing in which the earned grade is C- or lower must be repeated before the student can progress to another course. A nursing course or required cognate may be repeated only once. When a student repeats a course, both the original and repeat grades are entered into the student's permanent record; but only the repeat grade and credit are computed in the grade-point average and included in the total units earned.

**Probation status**

Students whose cumulative G.P.A. at the end of any quarter is less than 2.0, or who have received a C- or below in a nursing course or named cognate, or who have withdrawn (W) due to failing are placed on academic probation. Students on probation status will be required to take NRSG 244 Skills for Academic Success and to communicate regularly with the academic advisor. Students on probation status may take only one clinical nursing course at a time and no more than 12 units. When the course work has been repeated successfully, the student is returned to regular status. Enrollment in the School of Nursing will be terminated if a student receives two grades of C- or below in nursing or required cognates. See *Student Handbook* for grievance procedure.

**Graduation Requirements**

A candidate must complete the undergraduate Intent to Graduate form two quarters prior to completion of degree.

A degree will be granted when the student has met the following requirements:

1. Completed all requirements for admission to the respective curriculum.
2. Honorably completed all requirements of the curriculum, including specified attendance, level of scholarship, and length of academic residence.
3. Completed a minimum of 193.0 quarter units for the baccalaureate degree, with a minimum overall G.P.A. of 2.0 and in nursing.
4. Given evidence of moral character, of due regard for Christian citizenship, and of consistent responsiveness to the established aims of the University and of the respective discipline.
5. Discharged financial obligations to the University.

It is the responsibility of the student to see that all requirements have been met.

A student who completes the requirements for a degree at the end of the Spring Quarter is expected to be present at the University's ceremony for conferring of degrees and presentation of diplomas. Permission for the conferral of a degree in absentia is granted by the University upon recommendation of the dean of the school.

A student who completes the requirements for a degree at the end of the Summer, Autumn, or Winter quarter is invited, but not required, to participate in the subsequent conferring of degrees. Degrees are conferred at graduations only.

The University reserves the right to prohibit participation in commencement exercises by a candidate who has not satisfactorily complied with all requirements.

**GRADUATE DEPARTMENT****Academic residence**

To qualify for a degree from the graduate department in nursing at Loma Linda University, the student must take a minimum of 80 percent of the academic curriculum while in residence at the University, i.e., 42-68 units for the master's degree, depending on the selected concentration area; 50 units for Doctor of Nursing Practice; and 72 units for the Doctor of Philosophy degree.

## Transfer credits

1. A transfer student may transfer credits up to 20 percent of the units required by the chosen program to be applied to the degree requirements at Loma Linda University. This transfer is limited to credits for which a grade of B (3.0) or better has been recorded and the course work was done at an accredited institution.
2. A maximum of 9 quarter units that have been previously applied to another degree may be accepted as transfer credits upon petition.
3. Following acceptance into a graduate program, all required courses must be taken at Loma Linda University.
4. Credits taken through NEXus for graduate courses are not considered transfer credits.
5. Transfer credits will not be used to offset course work at this University with less than a B grade.

## Nondegree student credit

A maximum of 12 units may be taken by permission of the instructors prior to acceptance into the program. If these courses are part of the curricular plan for the selected concentration area, and if the grade earned is B or higher, the credits may be applied toward that degree. Clinical courses may not be taken prior to acceptance.

## Academic standing

Students are expected to maintain a G.P.A. of 3.0 (B average).

### A. Course grades

1. The expected earned grade level for graduate studies is a cumulative grade point average of 3.0 (B average) or higher.
2. Students must earn a grade of B (85%) or higher in all courses. If less than a B is the earned grade, the course must be repeated.

### B. Withdrawal and repeating courses

1. A student may withdraw only once from a core, concentration, or clinical course.
2. A student may repeat no more than one course in the program.
3. Students requesting to repeat a clinical course due to a low grade or withdrawal are placed on a waiting list, according to the timing of the request.

### C. Academic probation

At the end of each quarter, student G.P.A.s will be reviewed. Students will be placed on probationary status if the earned G.P.A. is less than 3.0 for the quarter, cumulatively, or in the nursing major.

While on probation, a student:

1. May not take the clinical focus courses.
2. May not take the comprehensive examination.

Academic probation may be removed:

- a. By raising the G.P.A. to 3.0 or higher the next quarter.
- b. By retaking the course in which a grade lower than B was earned to raise the earned grade the next time the course is offered.
- c. If the low grade occurred in a clinical course, that course must be retaken and a grade of B or higher earned before proceeding in the clinical sequence. It will be necessary to wait until the course is offered again and has space.

D. Academic termination for students on academic probation

Academic enrollment will be terminated if:

- a. The cumulative G.P.A. has not been raised to 3.0 or above.
- b. Any grade lower than B has not been raised within two quarters or the next time the course is offered.

### **Clinical probation**

Clinical work must be evaluated as satisfactory. Faculty may recommend that the student be placed on clinical probation. While on probation, the student must demonstrate satisfactory clinical work as stipulated by the faculty; or the student will be dismissed from the school.

### **Application for candidacy**

A student in the master's degree program will apply for candidacy on Form A after completing at least 25 units of required graduate course work. A Ph.D. degree student will be advanced to candidacy after successful defense of the dissertation proposal. A D.N.P. degree student will be advanced to candidacy after successful defense of the project proposal.

### **Time limits**

The time lapse from first enrollment in a graduate curriculum to the conferring of the master's degree may not exceed five years. For the doctoral degrees, seven years are allowed after the date of admission. A student desiring reinstatement must reapply to the dean. This procedure implies a re-evaluation of the student's total academic plan.

Any credit transferred to the school or taken in residence and submitted toward a graduate degree is nullified seven years from the date when the course was completed.

### **Scholastic standing**

#### **Grade scale**

The graduate department in nursing uses the following percentages for determining grades:

95-100%	A
92-94%	A-
88-91%	B+
85-87%	B
82-84%	B-
79-81%	C+

76-78%	C
71-75%	C-
68-70%	D+
63-67%	D
Below 62%	F

### **Practicum experiences**

Practicum experiences shall be individually structured to meet students' needs and program requirements. Practicum experiences are arranged by practicum faculty after consultation with advisors and appropriate agency personnel. Off-campus placement is formalized through written contract or letter of agreement. This process may take as long as six months. Students requesting practicum experiences at sites that will require additional costs—such as faculty travel, phone calls, or legal advice—are responsible for this expense.

### **Comprehensive examination**

A written, comprehensive examination is required of all students. The purpose of the comprehensive examination is to evaluate the student's ability to apply advanced clinical and theoretical knowledge to a selected problem in a selected area of specialization and to critique and synthesize research as it relates to that area. The student will plan to submit the comprehensive examination two (2) quarters before all requirements for the Master of Science degree are completed.

### **Thesis and dissertation**

The student's research and thesis or dissertation preparation are under the direction of his/her guidance committee. The student is urged to secure the committee's approval of the topic and research design as early as is feasible. Such approval must be secured before petition is made for advancement to candidacy. Thesis is optional for the M.S. degree.

### **Dissertation format**

Consultation with the Faculty of Graduate Studies office is encouraged to help the student avoid formatting errors in the dissertation process that would require him/her to edit large sections of manuscript. The last day for submitting the final approved copy is determined by the Faculty of Graduate Studies office. (See FGS policies.)

### **Portfolio**

A portfolio, developed during the program of study is required of all students

### **Graduation requirements**

A candidate for a degree shall have:

1. Completed all requirements for admission to the respective curriculum.
2. Completed honorably all requirements of the curriculum, including required course work, specified attendance, level of scholarship, and length of residence.
3. Given evidence of moral character, of due regard for Christian citizenship, and of consistent responsiveness to the established aims of the University and of the respective discipline.
4. Discharged financial obligations to the University.

It is the responsibility of the student to see that all requirements have been met.

A student who completes the requirements for a degree at the end of the Spring Quarter is expected to be present at the University's ceremony for conferring of degrees and the presenting of diplomas. Permission for the conferral of a degree in absentia is granted by the University upon recommendation of the dean of the school.

A student who completes the requirements for a degree at the end of the Summer, Autumn, or Winter Quarter is invited, but not required, to participate in the subsequent conferring of degrees. Degrees are conferred at graduations only. See Section II of the Academic Policies.

The University reserves the right to prohibit participation in commencement exercises by a candidate who has not satisfactorily complied with all requirements.

## Financial Information

The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy in regard to reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs in regard to these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees for the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### GENERAL FINANCIAL PRACTICES

Before the beginning of each school year, the student is expected to arrange for financial resources to cover all expenses. Previous accounts with other schools or with the University must have been settled.

### SCHEDULE OF CHARGES 2011-2012

The charges that follow are subject to change without notice.

#### Tuition

##### Tuition charge—undergraduate nonclinical, special, certificate, and part-time students

\$550	Credit, per unit
\$250	Clinical course fees per clinical course
\$275	Audit, per unit

##### Tuition charge—graduate

\$660	Credit, per unit
\$275	Clinical course fees per clinical course
\$330	Audit, per unit
\$8,500	CRNA blocked tuition per quarter (including University fees)

##### Applied music charges

varies      School of Nursing tuition does not include applied music charges.

##### Other academic charges

(Application nonrefundable)

\$60	Testing fee (undergraduate only)
\$60	Regular
\$200	Deposit to hold place in class (undergraduate only)
\$500	Deposit to hold place in class (DNP)
\$1,000	Deposit to hold place in class (CRNA)

**Examinations**

\$275	Undergraduate per unit credit (challenge, equivalency)
\$330	Graduate
\$50	Early examination
\$50	Application to change concentrations or degree program

**Special fees**

\$550	Per quarter for NRSG 497 Advanced Clinical Experience
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**Finance**

\$50	Tuition installment
\$50	Late payment
\$25	Returned check

**Registration**

\$50	Late registration fee
\$2	Per copy of regular student transcript

**Miscellaneous expenses**

\$2,250	Estimated annual expense for items such as textbooks, supplies, student uniforms, equipment, etc.
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**Licensing examinations**

Registration and certification examinations and license fees are set by the state.

**Other charges**

\$50	Laboratory make-up fee
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**ON- AND OFF-CAMPUS STUDENT HOUSING**

Students may go to <[llu.edu/central/housing](http://llu.edu/central/housing)> for housing information and a housing application form.

**NURSING AND GOVERNMENT LOANS**

Loans are available both to undergraduate and graduate nursing students who are eligible to participate in government loan programs such as Stafford and Nursing Student Loan Program. Contact Financial Aid for details at 909/558-4509. (See Academic Progression Section.)

**NURSING EDUCATION LOAN REPAYMENT PROGRAM**

The Nursing Education Loan Repayment Program (NELRP) offers registered nurses substantial assistance (up to 85 percent) to repay educational loans in exchange for service in eligible facilities located in areas experiencing a shortage of nurses. For eligibility information for this program and for the list of eligible health care facilities, check <[hrsa.gov/loanscholarships/repayment/nursing/](http://hrsa.gov/loanscholarships/repayment/nursing/)>.

**AWARDS HONORING EXCELLENCE**

Awards for excellence in nursing, scholastic attainment, and leadership ability are made available to students whose performance and attitudes reflect well the ideals and purposes of the school. Selection of students is based on the recommendation of the faculty to the dean.

**President's Award**

The President's Award is presented annually in recognition of superior scholastic attainment and active participation in the student community, within the framework of Christian commitment. One recipient is selected from each school of the University.

**Dean's Award**

The Dean's Award is presented to an outstanding student in each program on the basis of the student's demonstrated commitment to academic excellence and to the objectives of the school.

**Fineman Award**

The Allan Fineman Memorial Award is presented by the Fineman family in honor of their father, who was a patient in the University Medical Center. This award is based on outstanding caring traits in rendering professional nursing service.

**Helen Emori King Professional Leadership Award**

The Helen Emori King Professional Leadership Award is presented to a graduate student who demonstrates outstanding leadership ability in nursing.

**RNBS Award**

The RNBS (Registered Nurse/Bachelor of Science) Award is presented to the senior registered nurse student who has demonstrated exceptional competence in scholarship and in the clinical practice of nursing.

**SCHOLARSHIPS**

The School of Nursing has a variety of scholarships that have been endowed by alumni and friends. Most of the scholarships are awarded on the basis of academic/clinical performance, financial need, and citizenship. The Office of the Dean can provide the student with more information about, as well as application forms for each scholarship.

Alumni Scholarship

Catherine Christiansen Scholarship

Charlie Jo Morgan Student Scholarship

Class of 1966 Mentor Scholarship

Dean's Nursing Scholarship

Ellen Rickard Memorial Scholarship

Emori Nursing Scholarship

Halpenny Memorial Scholarship

Harry M. Woodall Scholarship

Hispanic Student Scholarship

Isabelle Wilson Rees Scholarship

Karen J. Radke Doctoral Student Fellowship

Lucile Lewis Scholarship

Marjorie D. Jesse Scholarship

Maxwell/Martin Scholarship

Nelson Nursing Scholarship

Rosie Voss Worthy Nursing Scholarship

School of Nursing Scholarship  
School of Nursing Undergraduate Scholarship  
Webb Scholarship

### **ADDITIONAL REQUIREMENTS/POLICIES**

For additional policies governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

## Nursing—SN

B.S., M.S., Certificate (post-master's), Ph.D. (in nursing)

MARILYN M. HERRMANN, Dean

ELIZABETH BOSSERT, Associate Dean, Academic Affairs and Graduate Nursing

DYNNETTE HART, Associate Dean, Student Affairs and Undergraduate Nursing

PATRICIA S. JONES, Director, Office of International Nursing

### FACULTY

#### *FACULTY EMERITUS*

Jeanette Earnhardt

Patricia Foster

Anabelle Mills Hills

Helen E. King

Lucile L. Lewis

Eva Miller

Penny Gustafson Miller

Lois H. Van Cleve

Ruth S. Weber

Clarice W. Woodward

#### *FULL-TIME FACULTY*

Elizabeth A. Bossert

Brenda Boyle

Shirley Bristol

Michelle Buckman

Margaret Burns

Karen G. Carrigg

Sally Curnow

Ellen D'Errico

Sabine Dunbar

Katty Joy French

Eileen Fry-Bowers

Nalo Hamilton

Dynnette E. Hart

Marilyn M. Herrmann

Catherine K. Horinouchi

Kathie Ingram

Patricia S. Jones

Lana S. Kanacki

Lorna Kendrick

Nancy Kofoed

Marian Llaguno

Susan Lloyd

Iris Mamier

Bonnie Meyer  
Earline Miller  
Deborah Monson  
Christine Neish  
Jan Marie Nick  
Barbara Ninan  
Laura Nyirady  
Nancy Parmenter  
Judith Peters  
Anna Berit Petersen  
Patricia T. Pothier  
Edelweiss Ramal  
Karen Ripley  
Su Lin Ritchie  
Hannah Sandy  
Nancy Sarpy  
Panadda Stacy  
Sylvia Stewart  
Nancy Testerman  
Megan Volkov  
Betty Winslow  
Dolores J. Wright  
Ann Ekroth Yukl  
Zelne Zamora

*PART-TIME FACULTY*

Helen E. King  
Keri L. Medina  
Elizabeth Johnston Taylor  
Lois H. Van Cleve

*FACULTY WITH SECONDARY APPOINTMENTS*

Mark Haviland  
Floyd Petersen

*VOLUNTARY APPOINTMENTS*

Elva Abogado  
Danilyn Angeles  
Shayne Bigelow-Price  
Christina Bivona-Tellez  
Cora Caballero  
Elizabeth J. Dickinson  
Jane Doetsch  
Anne M. Gillespie  
Sharon Goodrich  
Marie Hodgkins

Bernadine I. Irwin  
Margaret (Peggy) Jewell  
Angela Jones  
Susan L. Krider  
Jan Kroetz  
Beverly Monti  
Jean L. Newbold  
Nancy Oakley  
Pauline Park  
Sofia Puerto  
Patricia A. Radovich  
Patricia Sorenson  
Helen Staples-Evans  
Debra J. Stelmach  
Cora Lou (Penny) Stone  
Patricia Townsend  
Joanna J. Yang  
Glenda Yetter  
Janice R. Zumwalt

*ADJUNCT FACULTY*

Wendell Hom  
Marilyn Savedra  
Jeannine Sharkey

## UNDERGRADUATE DEPARTMENT

### **Undergraduate curricula overview**

The sections that follow describe the undergraduate curricula offered by the School of Nursing and list the courses each student must complete. Students are expected to operate under the general policies of the University and school and the specific policies of the degree curriculum in which they are enrolled. The school reserves the right to update and modify its curricula to keep current with trends in health care.

### **B.S. degree**

The primary aim of the School of Nursing's baccalaureate degree nursing curriculum is to prepare competent practitioners who are committed to excellence in practice and to Christian principles. The faculty believe that baccalaureate education in nursing is the basis for professional practice. The basic professional curriculum leading to a Bachelor of Science (B.S.) in nursing degree is consistent with the faculty belief that students should be broadly educated. The focus is on the synthesis of nursing knowledge and skills with knowledge and skills from the humanities and sciences. Preparation for practice includes experiences in primary, secondary, and tertiary health care with clients from various age and cultural groups and socioeconomic strata. The curriculum is based on the Neuman Systems Model, which addresses stressors to the client system.

## Undergraduate curriculum sequence

The undergraduate curriculum begins with four quarters of preclinical work, which forms the general education and science base for nursing. These quarters may be completed at any accredited college or university. After completion of an additional eight quarters at Loma Linda University, the student is eligible to receive the B.S. degree and is prepared for professional nursing practice at the baccalaureate level. The clinical experience develops the student's technical and theoretical capabilities in a progressive manner and within the context of the nursing process: assessment, analysis, planning, implementing, and evaluating. Most of the baccalaureate nursing major is in the upper division, where clinical experience is gained in a broad variety of settings. Integral components of upper division courses are leadership concepts and skills, research, health promotion, and activities that foster collaboration in planning health care with the family and all members of the health care team.

## Professional registration

Satisfactory completion of the California Board of Registered Nursing required content prepares the student to sit for the NCLEX-RN examination. All states require that a nurse pass the NCLEX-RN examination for licensure to practice. California application forms and fees are submitted to the California Board of Registered Nursing, P.O. Box 944210, Sacramento, CA 94244-2100: Web site: <rn.ca.gov>.

## Three B.S. degree options

1. Standard (generic) B.S. degree curriculum

Students must complete all prerequisite courses prior to starting clinical courses.

2. Returning RN (RN/B.S.) curriculum

The returning RN may complete a baccalaureate degree in four quarters of full-time course work. Part-time schooling is also possible. A combination of online and face-to-face courses is available for the working nurse. In addition to prerequisite courses, the returning RN must meet the following noncourse requirements:

- Current RN license
- A.S. degree or diploma in nursing

3. B.S. degree for the licensed vocational nurse

In addition to prerequisite courses, the LVN must also meet the following noncourse requirements:

- Overall G.P.A. of 3.0
- An LVN license (skills will need to be validated)

## General education requirements

(Must be completed prior to enrolling at LLU, unless otherwise noted.) See admissions requirements.

	Units required		
	B.S.	RN/B.S.	LVN/B.S.
<b>Domain 1: Religion and humanities (28 quarter units)</b>	28*	28*	28*
<b>Religion</b>	x	x	x
Prorated, based on units taken at a Seventh-day Adventist college or university. (See University Division of General Studies for religion and humanities specifics.)			
<b>Humanities</b>			
Minimum of 12 units selected from at least three of the following areas: modern languages (required; Spanish preferred), civilization/history, fine arts, literature, philosophy, or performing/visual arts (not to exceed 4 quarter units)			
<b>Domain 2: Scientific inquiry and analysis (43 quarter units)</b>			
<b>Natural Sciences (31 units minimum)</b>			
Intermediate algebra (or high school algebra II)—not counted toward domain total	R		R
Introduction to physics (or high school physics)	R		R
Human anatomy and physiology with laboratory, complete sequence	8	8	8
Introduction to organic chemistry and biochemistry	8		8
Introduction to chemistry with laboratory, one quarter/semester		4	
Basic medical microbiology with laboratory	5	5	5
Natural science electives		4	
<b>Social Sciences (12 units minimum)</b>			
Sociology or anthropology	4	4	4
General psychology	4	4	4
Developmental psychology (life span development)	4	4	4
<b>Domain 3: Communication (13 quarter units)</b>			
English composition, complete sequence	9	9	9
Speech	4	4	4
<b>Domain 4: Health and wellness (2-6 quarter units)</b>			
Physical education (two separate physical activity courses)	R	R	R
Nutrition (taken at LLU)	4	I	4
<b>Domain 5: Electives</b>			
To meet total GE requirements of 68 quarter units and total degree requirements of 193 quarter units.			

\* These may be completed while a student at LLU.

R - Required; I - Integrated in previous nursing course

Religion is required for all students

**Sophomore Year**

For admission to clinical nursing courses, all prerequisite courses must be successfully completed.

			BS	RN/BS	LVN/BS
DTCS 311	Human and Clinical Nutrition for Nursing	DTCS 312 may be taken in place of DTCS 311 if transfer credit includes articulated course in human nutrition	4.0		4.0
NRSG 214	Fundamentals of Professional Nursing		8.0		
NRSG 216	Basic Nursing Skills and Health Assessment		4.0		
NRSG 217	Psychiatric Mental Health Nursing	May be taken concurrently while at junior-level status	6.0		6.0
NRSG 224	Nursing Pathophysiology		4.0		4.0
NRSG 225	LVN Bridge Course	Upon successful completion, students are credited with NRSG 214 (8 units), NRSG 216 (2 units), and NRSG 309 (2 units)			4.0
RELT 406	Adventist Beliefs and Life (2.0)	Religion selective: choose one course	2.0	2.0	2.0
RELT 423	Loma Linda Perspectives (2.0)				
RELT 436	Adventist Heritage and Health (2.0)				
RELT 437	Current Issues in Adventism (2.0)				
Totals			28.0	2.0	20.0

**Junior Year**

For admission to junior-level nursing courses, the following courses must be successfully completed: NRSG 214, 216, 224.

			BS	RN/BS	LVN/BS
ENGL 300	Research Writing for Health Care Professionals			2.0	
NRSG 305	Nursing Pharmacology		3.0		3.0
NRSG 308	Adult Health Nursing I		8.0		8.0
NRSG 309	Gerontological Nursing		4.0		
NRSG 314	Obstetrical and Neonatal Nursing		6.0		6.0
NRSG 315	Child Health Nursing		6.0		6.0
NRSG 316	The Nursing Role in Health Promotion		4.0		4.0
NRSG 317	Adult Health Nursing II		8.0		8.0
RELE 4__	Upper Division Ethics		2.0	2.0	2.0
RELR 4__	Upper Division Relational		2.0	2.0	2.0
STAT 414	Introduction to Biostatistics I		3.0	3.0	3.0
STAT 415	Computer Applications in Biostatistics		1.0	1.0	1.0
WRIT 324	Writing for Health Care Professionals		2.0		2.0
Totals			49.0	10.0	45.0

**Senior Year**

For admission to senior-level courses, sophomore- and junior-year nursing courses must be successfully completed.

		BS	RN/BS	LVN/BS
EPDM 414	Introduction to Epidemiology	3.0	3.0	3.0
NRSG 337	Strategies for Professional Transition		4.0	
NRSG 407	Integration of Essential Concepts		6.0	
NRSG 408	Critical Care Nursing	6.0		6.0
NRSG 409	Home Health Nursing	3.0		3.0
NRSG 414	Management and Leadership in Nursing		6.0	
NRSG 415	Community Mental Health Nursing	4.0	4.0	4.0
NRSG 416	Public Health Nursing	8.0	8.0	8.0
NRSG 418	Capstone Nursing Practicum	8.0		8.0
NRSG 419	Capstone: Management and Leadership in Nursing	5.0		5.0
NRSG 420	Professional Preparation	2.0		2.0
NRSG 424	Professional Practice for the Experienced RN		7.0	
	With appropriate experience as an RN, this course may be taken instead of NRSG 417			
NRSG 429	Nursing Research	4.0	4.0	4.0
REL_ 4__	Upper Division Religion	6.0	2.0	6.0
	Totals	49.0	44.0	49.0
	<b>Overall Totals</b>	<b>193.0</b>	<b>193.0</b>	<b>193.0</b>

**Precourse preparation for nursing (optional)**

These courses—required for students in the Pipeline Program—prepare students to be successful in regular baccalaureate nursing classes. These courses do not count toward the nursing major. A course grade below 3.0 will drop the student from Loma Linda University School of Nursing.

NRSB 101	Critical Thinking and Learning Strategies for Nursing	2.0
NRSB 102	Science Principles Applied to Nursing	2.0
NRSB 103	Introduction to Math for Nursing	1.0
NRSB 104	Medical Terminology for Nursing	2.0
NRSB 105	Writing for Nursing	3.0
NRSB 106	Reading in Nursing	2.0

**B.S. degree curriculum [for student with bachelor's degree in another area]**

Students entering with a nonnursing baccalaureate degree may write the NCLEX-RN after completing required nursing courses for the licensure. This allows students to write the NCLEX-RN after six quarters and prior to completing the B.S. degree.

Students with an entering G.P.A. of 3.3 or above are eligible to request the accelerated curriculum option that prepares students to write the NCLEX-RN after five quarters rather than six. Applicants to this track should expect to carry very intensive academic loads. Students in this track must maintain a 3.0 G.P.A. each quarter. Any student in this track who receives a grade of B- or below will be returned to the regular schedule at the beginning of the next quarter.

## Nondegree options

### The 45-unit RN licensure option

A 45-unit option is open to all LVNs who seek only the RN license. Since the LVN choosing this option will not meet the requirements for a degree as outlined by the school, no degree or certificate will be issued; no graduation exercise will be included; nor will the student be eligible to wear the school pin, cap, or other insignia. In addition, an RN license obtained through this option is valid only in California and is not transferable to other states.

#### *Prerequisite*

High school diploma  
 Current LVN license in California (skills will need to be validated)  
 Completion of physiology and microbiology with a grade of C or better  
 G.P.A. of at least 2.0

#### *Academic plan*

#### Required courses

NRSG 217	Psychiatric Mental Health Nursing I	6.0
#NRSG 308	Adult Health Nursing I	8.0
+NRSG 225	LVN Bridge Course	4.0
NRSG 317	Adult Health Nursing II	8.0
NRSG 420	Professional Preparation	2.0
NRSG 499	Directed Study for Management	1.0
<b>Totals</b>		<b>29.0</b>

#### Optional courses (to complete 45 units)

NRSG 314	Obstetrical and Neonatal Nursing	6.0
NRSG 315	Child Health Nursing	6.0
NRSG 316	The Nursing Role in Health Promotion	4.0
NRSG 408	Critical Care Nursing	6.0
NRSG 409	Home Health Nursing	3.0
<b>Overall Totals</b>		<b>45.0</b>

+ Upon completion of this course, students are credited with NRSG 214 (8 units), NRSG 216 (2 units), and NRSG 309 (2 units).

# This course may be challenged.

NOTE: The student in this 45-unit RN option must maintain a G.P.A. of at least 2.0 and earn a grade of at least a C in each course throughout enrollment at Loma Linda University. A grade below a C will cause the student to be dropped from LLU School of Nursing.

## GRADUATE DEPARTMENT

### Overview

The sections that follow describe the master's and doctoral degrees offered by the School of Nursing and list the courses for each. In graduate education, the student has opportunity for the intense pursuit of knowledge in a chosen field of interest. Programs of study focus on attainment of knowledge and development of advanced intellectual, clinical, leadership, and investigative skills. School of Nursing students are expected to operate under the general policies of the University and school and the specific policies of the degree or certificate option in which they are enrolled. The school reserves the right to update and modify the curriculum to keep current with standards in health care.

### Nursing—M.S.

The School of Nursing at Loma Linda University offers a Master of Science degree with preparation for advanced nursing practice, nursing education, or nursing administration.

#### Prerequisite courses for M.S.

Introduction to statistics (descriptive and beginning inferential)	3.0
Introduction to research methods	2.0

(These courses have often been taken as a part of the baccalaureate undergraduate curriculum for nursing.)

#### Application and course scheduling

Adult and Family Nurse Practitioner begins in the Autumn Quarter. Pediatric, Psychiatric, Clinical Nurse Specialist, Nurse Educator and Administration begins during the Fall, Winter and Spring quarters. Doctoral Nurse Practitioner begins Summer Quarter, and Ph.D. even years only in the Summer. Applications may be submitted throughout the year. Up to 12 units may be taken, as a nondegree student, with the consent of the instructor, while the application submission and review are in progress. Core nursing courses are scheduled to accommodate working nurses.

#### Curriculum change

To maintain quality education, the curriculum is subject to change without prior notice. Students in continuous attendance will meet graduation requirements of the CATALOG under which they enter the School of Nursing.

#### General requirements

For information about requirements and practices to which all graduate students are subject, the student should consult Section II and the School of Nursing general information in Section III of this CATALOG.

#### Master's degree concentrations and post-master's certificate options available

- Adult nurse practitioner concentration and post-M.S. certificate
- Family nurse practitioner concentration and post-M.S. certificate
- Pediatric nurse practitioner concentration and post-M.S. certificate
- Psychiatric nurse practitioner concentration and post-M.S. certificate
- Neonatal nurse practitioner concentration and post-M.S. certificate (not open to admissions)

- Clinical nurse specialist: Adult and aging family concentration and post-M.S. certificate
- Clinical nurse specialist: Growing family concentration and post-M.S. certificate
- Nurse anesthesia
- Nurse educator: Adult and aging family
- Nurse educator: Growing family
- Nursing administration

### Adult Nurse Practitioner Concentration

The adult nurse practitioner clinical option prepares the nurse to exercise independent judgment in assessment, supervision, and management of the primary health care needs of adults, in consultation and collaboration with primary care physicians. The curriculum prepares the student to be certified as a nurse practitioner by the state of California and the American Nurses Certification Corporation.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 515	Health Policy	3.0	30	—	—	3.0
NRSG 516	Advanced Role Development	2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices	3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics	3.0	30	—	—	3.0
NRSG 684	Research Methods	4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)	3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3 to 4)	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)					
Totals		28.0	280	—	—	28.0

Concentration		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II	2.0	20	—	—	2.0
NRSG 624	The Adult and Aging Family Offered alternate years I	2.0	20	—	—	2.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
Totals		14.0	140	—	—	14.0

Clinical		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 561	Adult Primary Health Care I	2.0	20	2.0	60	4.0
NRSG 562	Adult Primary Health Care II	3.0	30	3.0	90	6.0
NRSG 563	Adult Primary Health Care III	3.0	30	3.0	90	6.0
NRSG 564	Adult Primary Health Care IV	3.0	30	4.0	120	7.0
NRSG 565	Adult Primary Health Care V	—	—	6.0	180	6.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		13.0	130	19.0	570	32.0

Thesis option		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree						
NRSG 697	Research	3.0	40-160	—	—	3.0
Totals		—	—	—	—	—
<b>Overall Totals</b>		<b>55.0</b>	<b>550</b>	<b>19.0</b>	<b>570</b>	<b>74.0</b>

### Adult Nurse Practitioner (Post-master's certificate)

The adult nurse practitioner post-master's certificate track is designed to prepare the nurse with a master's degree in a clinical area of nursing to become certified by the Board of Registered Nursing as a nurse practitioner in the state of California and by the American Nurses Certification Corporation.

#### Prerequisite

Graduate-level pathophysiology course  
Advanced physical assessment

Core			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3 to 4)						
NRSG 517	Theoretical Foundations for Advanced Practice (4)	Choose one course	2.0-4.0	—	—	—	2.0-4.0
NRSG 624	The Adult and Aging Family I (2)						
Totals			16.0-18.0	140	—	—	16.0-18.0

Clinical		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 561	Adult Primary Health Care I	2.0	20	2.0	60	4.0
NRSG 562	Adult Primary Health Care II	3.0	30	3.0	90	6.0
NRSG 563	Adult Primary Health Care III	3.0	30	3.0	90	6.0
NRSG 564	Adult Primary Health Care IV	3.0	30	4.0	120	7.0
NRSG 565	Adult Primary Health Care V	—	—	6.0	180	6.0
Totals		11.0	110	18.0	540	29.0
<b>Overall Totals</b>		<b>27.0-29.0</b>	<b>250</b>	<b>18.0</b>	<b>540</b>	<b>45.0-47.0</b>

### Certified Advanced Practice Registered Nurse Concentration

The M.S. degree in nursing for certified advanced practice registered nurses provides the opportunity for certified advanced practice nurses, who obtained their education prior to the late 1980s, to earn a master's degree in nursing.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 515	Health Policy	3.0	30	—	—	3.0
NRSG 516	Advanced Role Development	2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	3.0
NRSG 547	Nursing Leadership: Principles and Practices	3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics	3.0	30	—	—	3.0
NRSG 684	Research Methods	4.0	40	—	—	4.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
RELE 524	Bioethics and Society	3.0	30	—	—	3.0
Totals		29.0	290	—	—	29.0

Concentration		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 555	Pharmacology in Advanced Practice I	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II	2.0	20	—	—	2.0
NRSG 624	The Adult and Aging Family I (2) <i>Please take NRSG 624 - Adult &amp; Aging or NRSG 645 - Growing Family</i>	2.0	—	—	—	2.0
NRSG 645	Growing Family I (2) <i>Please take NRSG 645 - Growing Family or NRSG 624 - Adult &amp; Aging</i>					
Totals		7.0	50	—	—	7.0

Clinical			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 693	Experience Portfolio (1.0-16.0)	or supplemental courses & Guided Studies as needed to equal 18 units	—	—	18.0	540	18.0
Totals			—	—	18.0	540	18.0
<b>Overall Totals</b>			<b>36.0</b>	<b>340</b>	<b>18.0</b>	<b>540</b>	<b>54.0</b>

### Family Nurse Practitioner Concentration

The family nurse practitioner clinical option prepares the nurse to exercise independent judgment in assessment, supervision, and management of the primary health care needs of family members from newborn through elders, in consultation and collaboration with family practice physicians. The curriculum prepares the student to be certified as a nurse practitioner by the state of California and the American Nurses Certification Corporation.

Core			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 515	Health Policy		3.0	30	—	—	3.0
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 680	Intermediate Statistics		3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)		4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			25.0	250	—	—	25.0

Concentration			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 544	Teaching and Learning Theory	Take either NRSG 544 Teaching & Learning or NRSG 547 Nursing Leadership	3.0	30	—	—	3.0
NRSG 547	Nursing Leadership: Principles and Practices	Take either NRSG 547 Nursing Leadership or NRSG 544 Teaching & Learning	3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
PHSL 588	Pathophysiology		4.0	40	—	—	4.0
Totals			15.0	150	—	—	15.0

<b>Clinical</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 650	Family Primary Health Care: Children and Adolescents	3.0	30	1.0	30	4.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
NRSG 652	Family Primary Health Care I	2.0	20	2.0	60	4.0
NRSG 653	Family Primary Health Care II	3.0	30	3.0	90	6.0
NRSG 654	Family Primary Health Care III	3.0	30	4.0	120	7.0
NRSG 655	Family Primary Health Care IV	3.0	30	4.0	120	7.0
NRSG 656	Family Primary Health Care V	—	—	7.0	210	7.0
Totals		16.0	160	22.0	660	38.0
<b>Thesis option</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree						
NRSG 697	Research (1.0-4.0)	5.0	200	—	—	5.0
Totals		—	—	—	—	—
<b>Overall Totals</b>		<b>56.0</b>	<b>560</b>	<b>22.0</b>	<b>660</b>	<b>78.0</b>

### Family Nurse Practitioner (Post-master's certificate)

The family nurse practitioner post-master's certificate track is designed to prepare the nurse with a master's degree in a clinical area of nursing to become certified by the Board of Registered Nursing as a nurse practitioner in the state of California and by the American Nurses Certification Corporation.

#### Prerequisite

Graduate-level pathophysiology course  
Advanced physical assessment

<b>Core</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 555	Pharmacology in Advanced Practice I	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II	2.0	20	—	—	2.0
RELE 524	Bioethics and Society (3.0-4.0)	3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—
RELE 548	Christian Social Ethics (3)					
Totals		18.0	180	—	—	18.0

Clinical		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 650	Family Primary Health Care: Children and Adolescents	3.0	30	1.0	30	4.0
NRSG 652	Family Primary Health Care I	2.0	20	2.0	60	4.0
NRSG 653	Family Primary Health Care II	4.0	40	3.0	90	7.0
NRSG 654	Family Primary Health Care III	3.0	30	4.0	120	7.0
NRSG 655	Family Primary Health Care IV	3.0	30	4.0	120	7.0
NRSG 656	Family Primary Health Care V	—	—	7.0	210	7.0
Totals		15.0	150	21.0	630	36.0
<b>Overall Totals</b>		<b>33.0</b>	<b>330</b>	<b>21.0</b>	<b>630</b>	<b>54.0</b>

### Pediatric Nurse Practitioner Concentration

The pediatric nurse practitioner clinical option prepares the nurse to exercise independent judgment in assessment, supervision, and management of primary health care needs of children from birth through adolescence in consultation and collaboration with physicians. The curriculum prepares the student to be certified as a nurse practitioner by the state of California, the American Nurses Certification Corporation, and by the Pediatric Nursing Certification Board.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 515	Health Policy	3.0	30	—	—	3.0
NRSG 516	Advanced Role Development	2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices	3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics	3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)	4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)	3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)					
Totals		28.0	280	—	—	28.0

Concentration		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II	2.0	20	—	—	2.0
NRSG 645	Growing Family I	2.0	20	—	—	2.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
Totals		14.0	140	—	—	14.0

Clinical			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 551	Pediatric Primary Health Care I	Offered alternate years	3.0	30	1.0	30	4.0
NRSG 552	Pediatric Primary Health Care II	Offered alternate years	3.0	30	3.0	90	6.0
NRSG 553	Pediatric Primary Health Care III	Offered alternate years	3.0	30	4.0	120	7.0
NRSG 554	Pediatric Primary Health Care IV	Offered alternate years	2.0	20	5.0	150	7.0
NRSG 557	Pediatric Primary Health Care V	Offered alternate years	—	—	5.0	150	5.0
NRSG 651	Advanced Physical Assessment		2.0	20	1.0	30	3.0
Totals			13.0	130	19.0	570	32.0
Thesis option			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree							
NRSG 697	Research		3.0	40-160	—	—	3.0
Totals			—	—	—	—	—
<b>Overall Totals</b>			<b>55.0</b>	<b>550</b>	<b>19.0</b>	<b>570</b>	<b>74.0</b>

### Pediatric Nurse Practitioner (Post-master's certificate)

The pediatric nurse practitioner post-master's certificate track is designed to prepare the nurse with a master's degree in a clinical area of nursing to be certified as a nurse practitioner by the Board of Registered Nursing in the State of California, by the American Nurses Certification Corporation, and by the Pediatric Nursing Certification Board.

#### Prerequisite

Graduate-level pathophysiology  
Advanced physical assessment

Core			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60-80	—	—	6.0
RELE 548	Christian Social Ethics (3)						
NRSG 517	Theoretical Foundations for Advanced Practice (4)	Choose one course	2.0-4.0	—	—	—	2.0-4.0
NRSG 645	Growing Family I (2)						
Totals			16.0-18.0	140-160	—	—	16.0-18.0

Clinical			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 551	Pediatric Primary Health Care I	Offered alternate years	3.0	30	1.0	30	4.0
NRSG 552	Pediatric Primary Health Care II	Offered alternate years	3.0	30	3.0	90	6.0
NRSG 553	Pediatric Primary Health Care III	Offered alternate years	3.0	30	4.0	120	7.0
NRSG 554	Pediatric Primary Health Care IV	Offered alternate years	2.0	20	5.0	150	7.0
NRSG 557	Pediatric Primary Health Care V	Offered alternate years	—	—	5.0	150	5.0
Totals			11.0	110	18.0	540	29.0
<b>Overall Totals</b>			<b>27.0-29.0</b>	<b>250-270</b>	<b>18.0</b>	<b>540</b>	<b>45.0-47.0</b>

### Psychiatric Nurse Practitioner Concentration

The psychiatric nurse practitioner (PsychNP) curriculum prepares the registered nurse for an advanced specialist role focused on the promotion of mental health, prevention, and treatment of psychiatric disorders in consultation and collaboration with psychiatrists and other mental health care providers. The program is accredited by the Commission of Collegiate Nursing Education and prepares the student to be certified by the American Nurses Certification Corporation.

Core			Units
NRSG 517	Theoretical Foundations for Advanced Practice		4.0
NRSG 555	Pharmacology in Advanced Practice I		3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0
RELE 524	Bioethics and Society		3.0
RELE 534	Ethical Issues in Public Health	Acceptable alternate course	3.0-4.0
RELE 548	Christian Social Ethics	Acceptable alternate course	3.0
Totals			18.0-19.0

Clinical			Units
NRSG 581	Psychiatric Nurse Practitioner I: Models and Theoretical Foundations		4.0
NRSG 582	Psychiatric Nurse Practitioner II: Disorders		7.0
NRSG 583	Psychiatric Nurse Practitioner III: Disorders		7.0
NRSG 584	Psychiatric Nurse Practitioner IV: Psychopharmacology		6.0
NRSG 585	Psychiatric Nurse Practitioner V: Treatment Modalities		7.0
Totals			31.0
<b>Overall Totals</b>			<b>49.0-50.0</b>

**Neonatal Nurse Practitioner Concentration**

(NOT OPEN TO ADMISSIONS)

The neonatal nurse practitioner clinical option specializes in the theory and practice of neonatal intensive care patient management. The curriculum prepares the nurse to exercise independent judgment in assessment, supervision, and management of sick newborns—with consultation and collaboration of neonatologists. The curriculum prepares the graduate to be certified as a nurse practitioner by the state of California and as a neonatal nurse practitioner by the National Certification Corporation.

			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
<b>Core</b>							
NRSG 515	Health Policy		3.0	30	—	—	3.0
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices		3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics		3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)		4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			28.0	280	—	—	28.0
<b>Concentration</b>							
			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 544	Teaching and Learning Theory		3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 560	Neonatal Pharmacology		2.0	20	—	—	2.0
PHSL 588	Pathophysiology		4.0	40	—	—	4.0
Totals			12.0	120	—	—	12.0
<b>Clinical</b>							
			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 619	Neonatal Critical Care I: Neonatal Advanced Physical Assessment	Offered alternate years	3.0	30	—	—	3.0
NRSG 620	Neonatal Nurse Practitioner II	Offered alternate years	4.0	40	1.0	30	5.0
NRSG 621	Neonatal Nurse Practitioner III	Offered alternate years	5.0	50	3.0	90	8.0
NRSG 622	Neonatal Nurse Practitioner IV: Practicum	Offered alternate years	6.0	60	3.0	90	9.0
NRSG 623	Neonatal Nurse Practitioner V: Practicum	Offered alternate years	—	—	13.0	390	13.0
Totals			18.0	180	20.0	600	38.0

Thesis option		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree						
NRSG 697	Research (1.0-4.0)	5.0	200	—	—	5.0
Totals		—	—	—	—	—
<b>Overall Totals</b>		<b>58.0</b>	<b>580</b>	<b>20.0</b>	<b>600</b>	<b>78.0</b>

### Neonatal Nurse Practitioner (Post-master's certificate)

(NOT OPEN TO ADMISSIONS)

The neonatal nurse practitioner post-master's certificate track is designed to prepare the nurse with a master's degree in parent/child nursing (or equivalent to Loma Linda University School of Nursing's clinical major in growing family) to become certified as a nurse practitioner by the state of California and as a neonatal nurse practitioner by the National Certification Corporation.

### Prerequisite

Graduate-level pathophysiology and pharmacology

Core			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)		9.0	90	—	—	9.0
Totals			9.0	90	—	—	9.0

Clinical			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 560	Neonatal Pharmacology		2.0	20	—	—	2.0
NRSG 619	Neonatal Critical Care I:	Offered alternate years	3.0	30	—	—	3.0
	Neonatal Advanced Physical Assessment						
NRSG 620	Neonatal Nurse Practitioner II	Offered alternate years	4.0	40	1.0	30	5.0
NRSG 621	Neonatal Nurse Practitioner III	Offered alternate years	5.0	50	3.0	90	8.0
NRSG 622	Neonatal Nurse Practitioner IV: Practicum	Offered alternate years	6.0	60	3.0	90	9.0
NRSG 623	Neonatal Nurse Practitioner V: Practicum	Offered alternate years	—	—	13.0	390	13.0
Totals			20.0	200	20.0	600	40.0
<b>Overall Totals</b>			<b>29.0</b>	<b>290</b>	<b>20.0</b>	<b>600</b>	<b>49.0</b>

### Nurse Anesthesia

The nurse anesthesia concentration is designed to prepare the nurse with a master's degree in a clinical area of nursing to become certified by the Board of Registered Nursing as a nurse anesthetist in the state of California and by the National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA).

<b>Core</b>		<b>Units</b>
ANAT 527	Advanced Clinical Anatomy for Nurse Anesthetists	5.0
BCHM 517	Scientific Foundations of Nurse Anesthesia Practice	2.0
NRSG 516	Advanced Role Development	2.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0
NRSG 684	Research Methods	4.0
PHSL 506	Advanced Physiology and Pathophysiology for Nurse Anesthetist I	5.0
PHSL 507	Advanced Physiology and Pathophysiology for Nurse Anesthetist II	4.0
RELE 524	Bioethics and Society	3.0
<b>Totals</b>		<b>29.0</b>
<b>Concentration</b>		<b>Units</b>
NRSG 519	Advanced Role Development for the Nurse Anesthetist	2.0
NRSG 520	Principles of Nurse Anesthesia Practice I	4.0
NRSG 521	Principles of Nurse Anesthesia Practice II	4.0
NRSG 522	Principles of Nurse Anesthesia Practice III	5.0
NRSG 523	Principles of Nurse Anesthesia Practice IV	3.0
NRSG 558	Advanced Pharmacology for Nurse Anesthesia I	6.0
NRSG 559	Advanced Pharmacology for Nurse Anesthesia II	5.0
NRSG 651	Advanced Physical Assessment	3.0
<b>Totals</b>		<b>32.0</b>
<b>Clinical</b>		<b>Units</b>
NRSG 524	Clinical Practicum & Correlation Conference I	3.0
NRSG 525	Clinical Practicum & Correlations Conference II	4.0
NRSG 526	Clinical Practicum & Correlation Conference III	4.0
NRSG 527	Clinical Practicum & Correlation Conference IV	4.0
NRSG 528	Clinical Practicum & Correlation Conference V	4.0
NRSG 529	Clinical Practicum & Correlation Conference VI	4.0
<b>Totals</b>		<b>23.0</b>
<b>Overall Totals</b>		<b>84.0</b>

### Clinical Nurse Specialist: Adult and Aging Family Concentration

The clinical nurse specialist: adult and aging family clinical option prepares students for leadership roles as clinical nurse specialists. Clinical and theoretical content focuses on adult and aging clients and families. The curriculum offers opportunity for students to choose an emphasis providing advanced nursing care to families experiencing health care needs. The curriculum includes 500 hours of clinical practicum in preparation for certification by the American Nurses Certification Corporation as a clinical nurse specialist in either medical-surgical nursing or gerontological nursing after completing the required practice hours.

			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
<b>Core</b>							
NRSG 515	Health Policy		3.0	30	—	—	3.0
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices		3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics		3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)		4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			28.0	280	—	—	28.0
<b>Concentration</b>			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 544	Teaching and Learning Theory		3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
PHSL 588	Pathophysiology		4.0	40	—	—	4.0
_____	Elective (3)	Take one course	3.0	—	—	—	3.0
NRSG 546	Curriculum Development in Higher Education (3)						
Totals			15.0	120	—	—	15.0
<b>Clinical</b>			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 545	Teaching Practicum (3.0-4.0) Optional		—	—	—	—	—
NRSG 624	The Adult and Aging Family I	Offered alternate years	2.0	20	2.0	60	4.0
NRSG 626	The Adult and Aging Family II	Offered alternate years	2.0	20	1.0	30	3.0
NRSG 628	Clinical Practicum: Adult and Aging Family	Offered alternate years	—	—	13.0	390	13.0
NRSG 651	Advanced Physical Assessment		2.0	20	1.0	30	3.0
Totals			6.0	60	17.0	510	23.0

<b>Thesis option</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree						
NRSG 697	Research (1.0-4.0)	5.0	200	—	—	5.0
Totals		—	—	—	—	—
<b>Overall Totals</b>		<b>49.0</b>	<b>460</b>	<b>17.0</b>	<b>510</b>	<b>66.0</b>

### Clinical Nurse Specialist: Adult and Aging Family (Post-master's certificate)

#### Prerequisite

Graduate-level pathophysiology

Advanced physical assessment

<b>Core</b>			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			20.0	200	—	—	20.0

<b>Clinical</b>			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 545	Teaching Practicum (3.0-4.0) Optional		—	—	—	—	—
NRSG 624	The Adult and Aging Family I		2.0	20	2.0	60	4.0
NRSG 626	The Adult and Aging Family II		2.0	20	1.0	30	3.0
NRSG 628	Clinical Practicum: Adult and Aging Family (2.0-12.0)		—	—	15.0	450	15.0
Totals			4.0	40	18.0	540	22.0
<b>Overall Totals</b>			<b>24.0</b>	<b>240</b>	<b>18.0</b>	<b>540</b>	<b>42.0</b>

### Clinical Nurse Specialist: Growing Family Concentration

The clinical nurse specialist: growing family concentration prepares students for leadership roles as clinical nurse specialists. The curriculum offers opportunity for the student to choose an emphasis providing advanced nursing care to families in the early phase of childbearing or in care of children. The curriculum includes 500 hours of clinical practicum in preparation for certification by the American Nurses Certification Corporation as a clinical nurse specialist in child and adolescent health care or in maternal and child health.

Core			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 515	Health Policy		3.0	30	—	—	3.0
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices		3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics		3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)		4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			28.0	280	—	—	28.0

Concentration			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 544	Teaching and Learning Theory		3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
_____	Elective (3)	Take one course	3.0	—	—	—	3.0
NRSG 546	Curriculum Development in Higher Education (3)						
Totals			11.0	80	—	—	11.0

Clinical			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 545	Teaching Practicum (3.0-4.0) Optional		—	—	—	—	—
NRSG 617	Clinical Practicum: Growing Family (2.0-12.0)	Offered alternate years	—	—	13.0	390	13.0
NRSG 645	Growing Family I	Offered alternate years	2.0	20	2.0	60	4.0
NRSG 646	Growing Family II	Offered alternate years	2.0	20	1.0	30	3.0
NRSG 651	Advanced Physical Assessment		2.0	20	1.0	30	3.0
Totals			6.0	60	17.0	510	23.0

<b>Thesis option</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree						
NRSG 697	Research (1.0-4.0)	5.0	20	—	—	5.0
Totals		—	—	—	—	—
<b>Overall Totals</b>		<b>45.0</b>	<b>420</b>	<b>17.0</b>	<b>510</b>	<b>62.0</b>

### Clinical Nurse Specialist: Growing Family (Post-master's certificate)

#### Prerequisite

Graduate-level pathophysiology

Advanced physical assessment

<b>Core</b>			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 555	Pharmacology in Advanced Practice I		3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II		2.0	20	—	—	2.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60-80	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			20.0	200-220	—	—	20.0

<b>Clinical</b>			Theory		Clinical		Total Units
			Units	Hours	Units	Hours	
NRSG 545	Teaching Practicum (3.0-4.0) Optional		—	—	—	—	—
NRSG 617	Clinical Practicum: Growing Family (2.0-12.0)		—	—	15.0	450	15.0
NRSG 645	Growing Family I		2.0	20	2.0	60	4.0
NRSG 646	Growing Family II		2.0	20	1.0	30	3.0
Totals			4.0	40	18.0	540	22.0
<b>Overall Totals</b>			<b>24.0</b>	<b>240-260</b>	<b>18.0</b>	<b>540</b>	<b>42.0</b>

### Nursing Administration Concentration

The nursing administration option prepares nurses for leadership in a variety of organizational settings. The M.S. degree curriculum draws from the practice of nursing, management, and related fields; and includes administration, research, and clinical components.

Core			Theory		Clinical		Total
			Units	Hours	Units	Hours	Units
NRSG 515	Health Policy		3.0	30	—	—	3.0
NRSG 516	Advanced Role Development		2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice		4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices		3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics		3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)		4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)		3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	Acceptable alternate religion courses	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)						
Totals			28.0	280	—	—	28.0

Concentration			Theory		Clinical		Total
			Units	Hours	Units	Hours	Units
HADM 507	Principles of Financial Accounting in Health Care		3.0	30	—	—	3.0
HADM 528	Organizational Behavior in Health Care		3.0	30	—	—	3.0
HADM 534	Healthcare Law		3.0	30	—	—	3.0
HADM 605	Health Care Quality Management		3.0	30	—	—	3.0
HADM 514	Health Care Economic Policy (3) <i>Select others on approval</i>	Take three courses	9.0	—	—	—	9.0
HADM 529	Health Care Negotiations and Conflict Resolution (3) <i>Select others on approval</i>						
HADM 545	Government Policy and Health Disparities (3) <i>Select others on approval</i>						
HADM 559	Health Care Marketing (3) <i>Select others on approval</i>						
HADM 574	Managing Human Resources in Health Care Organizations (3) <i>Select others on approval</i>						

HADM 575	Management Information Systems in Health Care (3) <i>Select others on approval</i>						
HADM 604	Health Systems Strategic Planning (3) <i>Select others on approval</i>						
<b>Totals</b>		21.0	120	—	—	21.0	
<b>Clinical</b>		Theory		Clinical		Total Units	
		Units	Hours	Units	Hours		
NRSG 548	Nursing Administration Practicum	Take 1 - 8 units	—	—	8.0	240	8.0
NRSG 624	The Adult and Aging Family I (2) <i>Offered alternate years</i>	Take one course	—	—	2.0	—	2.0
NRSG 626	The Adult and Aging Family II (2) <i>Offered alternate years</i>						
NRSG 645	Growing Family I (2) <i>Offered alternate years</i>						
NRSG 646	Growing Family II (2) <i>Offered alternate years</i>						
<b>Totals</b>			—	—	10.0	240	10.0
<b>Thesis option</b>		Theory		Clinical		Total Units	
		Units	Hours	Units	Hours		
Units are in addition to minimum required for the degree							
NRSG 697	Research (1.0-4.0)		5.0	200	—	—	5.0
<b>Totals</b>			—	—	—	—	—
<b>Overall Totals</b>			<b>49.0</b>	<b>400</b>	<b>10.0</b>	<b>240</b>	<b>59.0</b>

### Nurse Educator Concentration

The nurse educator option prepares faculty for educational programs in nursing. The student will select either the adult and aging family or the growing family as a focus area for clinical work. Additional course work includes education courses, research, and other core courses. The curriculum prepares the graduate to take the NLN Certified Nurse Educator Examination.

#### Nurse Educator: Growing Family

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 515	Health Policy	3.0	30	—	—	3.0
NRSG 516	Advanced Role Development	2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices	3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics	3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)	4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)	3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)					
Totals		28.0	280	—	—	28.0

Concentration		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
AHCJ 506	Educational Evaluation and Clinical Assessment	3.0	30	—	—	3.0
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	3.0
NRSG 545	Teaching Practicum (3.0-4.0)	—	—	3.0	90	3.0
NRSG 546	Curriculum Development in Higher Education	3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II	2.0	20	—	—	2.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
Totals		18.0	180	3.0	90	21.0

Clinical		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 617	Clinical Practicum: Growing Family	—	—	3.0	90	3.0
NRSG 645	Growing Family I	2.0	20	1.0	30	3.0
NRSG 646	Growing Family II	2.0	20	1.0	30	3.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		6.0	60	6.0	180	12.0

Thesis option		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 697	Research	3.0	40-160	—	—	3.0
Totals		—	—	—	—	—
<b>Overall Totals</b>		<b>52.0</b>	<b>520</b>	<b>9.0</b>	<b>270</b>	<b>61.0</b>

***Nurse Educator: Adult and Aging Family***

<b>Core</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 515	Health Policy	3.0	30	—	—	3.0
NRSG 516	Advanced Role Development	2.0	20	—	—	2.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 547	Nursing Leadership: Principles and Practices	3.0	30	—	—	3.0
NRSG 680	Intermediate Statistics	3.0	30	—	—	3.0
NRSG 684	Research Methods (4.0)	4.0	40	—	—	4.0
RELE 524	Bioethics and Society (3.0-4.0)	3.0	30	—	—	3.0
RELE 534	Ethical Issues in Public Health (3)	6.0	60	—	—	6.0
RELE 548	Christian Social Ethics (3)					
<b>Totals</b>		<b>28.0</b>	<b>280</b>	<b>—</b>	<b>—</b>	<b>28.0</b>

<b>Concentration</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
AHCJ 506	Educational Evaluation and Clinical Assessment	3.0	30	—	—	3.0
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	3.0
NRSG 545	Teaching Practicum	—	—	3.0	90	3.0
NRSG 546	Curriculum Development in Higher Education	3.0	30	—	—	3.0
NRSG 555	Pharmacology in Advanced Practice I	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II	2.0	20	—	—	2.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
<b>Totals</b>		<b>18.0</b>	<b>180</b>	<b>3.0</b>	<b>90</b>	<b>21.0</b>

<b>Clinical</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NRSG 624	The Adult and Aging Family I	2.0	20	1.0	30	3.0
NRSG 626	The Adult and Aging Family II	2.0	20	1.0	30	3.0
NRSG 628	Clinical Practicum: Adult and Aging Family	—	—	3.0	90	3.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
<b>Totals</b>		<b>6.0</b>	<b>60</b>	<b>6.0</b>	<b>180</b>	<b>12.0</b>

<b>Thesis option</b>		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
Units are in addition to minimum required for the degree						
NRSG 697	Research	4.0	40-160	—	—	4.0
<b>Totals</b>		<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Overall Totals</b>		<b>52.0</b>	<b>520</b>	<b>9.0</b>	<b>270</b>	<b>61.0</b>

## Doctor of Nursing Practice

The Doctor of Nursing Practice (D.N.P.) degree is a three-year, 63-unit, post-master's degree curriculum that began Summer Quarter 2010. This curriculum allows master's degree-level- educated registered nurses to earn doctorates, which will prepare them to assume advanced practice (patient care) and leadership (health care systems) roles. It will address and meet outcome expectations as articulated by the American Association of Colleges of Nursing in accordance with their recommendation that advanced practice specialty areas be staffed by nurses with doctorate degrees by 2015.

### The curriculum

Courses will be offered as one-to-two-week, oncampus intensives—with the exception of one online and several mentored inquiry courses. An orientation session, several courses, advanced seminar, and courses associated with the capstone activity will be offered annually. All other courses will be available every other year.

Core		Units
NRSG 601	DNP Professional Development	2.0
NRSG 602	Evidence-based Models of Advanced Practice and Healthcare Outcomes	3.0
NRSG 603	Evaluation of Informational Systems	3.0
NRSG 605	Vulnerable Populations	3.0
NRSG 607	Complex Issues in Nursing Practice	3.0
NRSG 608	Translational Research for Advanced Nursing Practice	3.0
NRSG 609	Policy Development and Advocacy	3.0
NRSG 611	Assessment, Planning, and Outcomes for Clinical Practice	3.0
NRSG 612	Health Care Systems Leadership	3.0
NRSG 613	Cultural Issues in Nursing Practice	3.0
NRSG 618A	Writing for Publication	2.0
NRSG 618B	Writing for Publication	1.0
NRSG 625	The Practice Mentor	3.0
RELE 536	Ethics, Leadership, and Advanced Nursing (3)	Acceptable alternate religion courses
RELR 525	Health Care and the Dynamics of Christian Leadership (3)	
RELT 557	Theology of Human Suffering (3)	
Totals		44.0
<b>CAPSTONE PROJECT</b>		Units
NRSG 627	DNP Project Development Seminar (1.0)	7.0
NRSG 634	DNP Project (3.0)	12.0
Totals		19.0
<b>Overall Totals</b>		<b>63.0</b>

## Doctor of Philosophy in Nursing

The aim of the Doctor of Philosophy degree program in nursing is to prepare nurse scholars for leadership in education, health care administration, and research. The nurse-scientist who completes this program should be committed to the generation of knowledge critical to development of nursing science and practice. Graduates join other nursing leaders in furthering the development of nursing science and improving health care delivery throughout the world.

### The curriculum

The Ph.D. degree is offered as a summers-only program on campus at Loma Linda University, with selected online courses during the academic year. Completion of dissertation will follow. This schedule is designed to accommodate the needs of adult learners who are either full-time students or part-time students with ongoing commitment to professional work during the academic year. The core courses of the program are taught during four summer intensive sessions. Concentration and elective courses may be taken at Loma Linda University or through the \*NEXus partnership; or a limited number of approved units may be transferred from another university.

The doctoral degree program is designed to provide an in-depth understanding of knowledge development within the discipline of nursing through philosophical, theoretical, and scientific methods of inquiry. The core courses of the program emphasize these three areas. In addition to the core courses, each student is encouraged to select an individually focused area of concentration that will support the student's chosen area of expertise in nursing and that will focus her or his area of advanced inquiry. The area of concentration may fit established research programs of School of Nursing faculty and may also take advantage of graduate courses throughout the University.

The credit requirement is 90 quarter units beyond the Master of Science degree. Additionally, LLU Scholars Seminar is required during the academic year while away from the Loma Linda University campus. The seminar focus is to integrate concentration and elective courses in the foundation for a dissertation at the University and to maintain momentum during the program. The program may be completed in four-to-seven years.

NEXus is a partnership among select Western Institute of Nursing institutions to facilitate enrollment in doctoral courses not available on the student's home campus. Through NEXus, the institutions have identified courses that are available at a distance and open for enrollments from partner institutions.

### Progression criteria

The following sequential elements are required for progression in the doctoral program:

1. Area of concentration developed and approval of student's proposed academic plan by the end of the first year of full-time study.
2. Written and oral qualifying examination after completion of all required course work.
3. Advancement to candidacy.
4. Successful defense of research proposal.
5. Successful defense of dissertation.

Refer to guidelines from the Faculty of Graduate Studies for dissertation format requirements.

**Philosophy of science and nursing**

Units

NRSG 574	Philosophical Foundations of Nursing Science	2.0
PHIL 616	Seminar in the Philosophy of Science (2.0-4.0)	2.0
Totals		4.0

**Theory development**

Units

NRSG 575	Strategies for Theory Development in Nursing (4.0)	4.0
Totals		4.0

**Concentration/electives**

Units

___ __	Elective	Focus courses (foundational to dissertation)	12.0
___ __	Elective	General electives (a selected analytical topic strongly recommended)	8.0
Totals			20.0

**Cognates**

Units

NRSG 637	LLU Scholars Seminar (1.0)	Taken four times	4.0
NRSG 664	Nursing Science Seminar (1.0)	Taken three times	3.0
RELE 5__	Graduate-level Ethics		3.0
RELR 5__	Graduate-level Relational		3.0
RELT 5__	Graduate-level Theological		3.0
Totals			16.0

**Research and statistics**

Units

NRSG 636	Methods of Disciplined Inquiry		2.0
NRSG 660	Advanced Qualitative Research Methods		4.0
NRSG 686	Advanced Quantitative Research Methods		4.0
NRSG 696	Mentored Research		4.0
NRSG 697	Research (1.0-4.0)		20.0
STAT 531	Parametric and Non-parametric Bivariate Statistics		4.0
STAT 532	Applied Bivariate Statistical Analysis		4.0
STAT 533	Applied Multivariable Statistical Analysis		4.0
Totals			46.0
<b>Overall Totals</b>			<b>90.0</b>

## School of Pharmacy

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## Dean's Welcome

Welcome to the Loma Linda University School of Pharmacy. The program of study leading to the Pharm.D. degree is the only such program within the worldwide network of Seventh-day Adventist higher education institutions. While at Loma Linda University, your studies will be filled with the various pharmacy disciplines (biomedical sciences, pharmaceutical sciences, and social and administrative sciences; as well as the pharmacy practice areas of therapeutics, drug information, pharmaceutical care, and experiential education).

Classroom studies are only a part of what it takes to prepare a future pharmacist. Ample opportunities are in place for students to experience the real world of pharmacy and to hone their sense of professionalism and service. I encourage you to take full advantage of all that comes your way. "By giving more to your profession, you reap far more in return." On a global scale, as well as on campus, there are opportunities for students and faculty to participate in outreach and service programs to underserved populations. This ability to perform meaningful service is a gift that enhances the lives of those being served and of those serving.

The University motto, "To make man whole," combined with the mission to continue the teaching and healing ministry of Jesus Christ is foundational to all programs. The school's faculty, staff, and I are fully committed to excellence in pharmacy education, research, and service. During your four years of study, you are invited to learn more about the profession of pharmacy and value-added activities abundant at Loma Linda University. I am delighted that you have chosen to explore our program and look forward to facilitating your journey towards a rewarding and fulfilling professional career in pharmacy.



A handwritten signature in black ink, appearing to read "W. William Hughes". The signature is fluid and cursive, with a long horizontal stroke at the end.

W. William Hughes, Ph.D.  
Dean, School of Pharmacy

## School Foundations

### HISTORY

In 1994, a school of pharmacy was proposed to the Loma Linda University Board of Trustees; and in 1995, the board voted to continue to approve in principle the establishment of a school of pharmacy. On September 19, 2002, the pioneering class of 2006 began their study in the new School of Pharmacy. In July 2007, the Accreditation Council for Pharmacy Education granted full accreditation status to the School of Pharmacy.

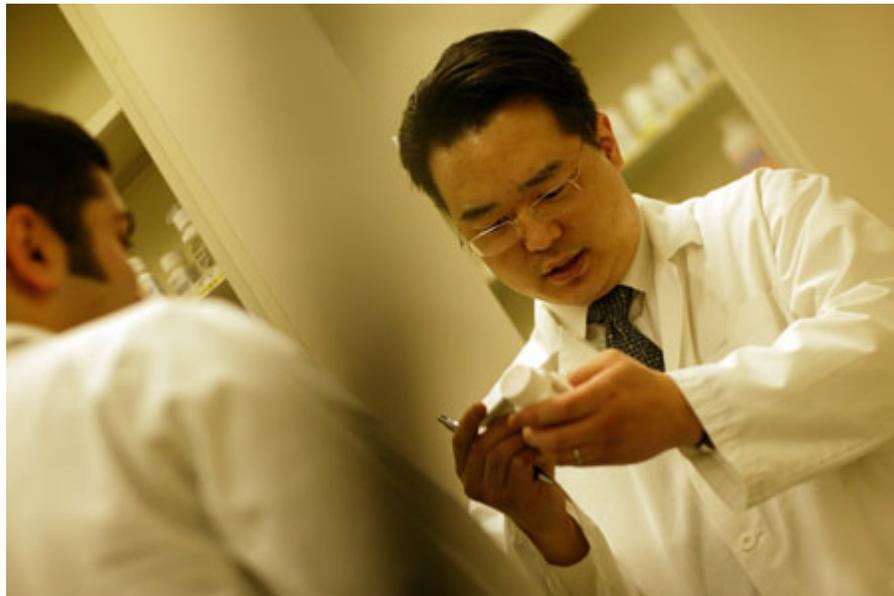
# Mission, Goals, and Values

## OUR MISSION

The mission of the Loma Linda University School of Pharmacy is to continue the teaching and healing ministry of Jesus by:

- Educating competent, caring pharmacists who will serve as integral members of the health care team;
- Expanding through research the development of therapeutic regimens that will advance the knowledge and technology available for the treatment of disease; and
- Providing high-quality pharmaceutical care to all those within the global sphere of influence of Loma Linda University.

The School of Pharmacy is committed to the education of pharmacists of the highest ethical and professional standards to deliver competent and compassionate pharmaceutical care. A diverse and dynamic educational environment produces students who are practitioners, health professionals, and providers of humanitarian service to a global community. Graduates will be dedicated to lifelong learning; developing new knowledge; advancing standards of practice; and integrating physical, mental, social, and spiritual dimensions of health.



## OUR GOALS

The goals of the Loma Linda University School of Pharmacy are to:

- Provide pharmaceutical care in a global community.
- Expand and disseminate pharmaceutical knowledge through research and scholarly activities.
- Promote integrity and high ethical standards in conjunction with empathic attitudes that contribute to the well-being of patients and society.

- Engender and nurture the desire to serve mankind.
- Create an educational environment supportive of diverse populations and learning styles.
- Demonstrate pharmacy leadership within the University and the region.
- Encourage cultivation of self-education habits that foster lifelong learning.
- Instill positive personal health lifestyles that promote wholeness, wellness, and spiritual values.
- Incorporate educational techniques and technologies that best serve student learning.
- Promote responsible management of health care resources and the environment.

## OUR VALUES

The School of Pharmacy centers its academic and cocurricular activities around seven values. These are:

- **Compassion**—The sympathetic willingness to be engaged with the needs and sufferings of others. Among the most memorable depictions of compassion in Scripture is the story of the Good Samaritan, which Loma Linda University has taken as a central symbol of its work.
- **Excellence**—The commitment to exceed minimum standards and expectations.
- **Humility**—The willingness to serve others in a sacrificial manner, and the self-respect that renounces haughtiness or arrogance.
- **Integrity**—The quality of living a unified life in which one's convictions are well-considered and match one's actions. Integrity encompasses honesty, authenticity, and trustworthiness.
- **Purity/Self-Control**—The commitment to be morally upright and moderate in all things, with complete control over one's emotions, desires, and actions.
- **Freedom**—The competency and privilege to make informed and accountable choices and to respect the freedom of others. God has called us not to slavery but to freedom.
- **Justice**—The commitment to equality and to treat others fairly, renouncing all forms of unfair discrimination. The God of the Bible is One who calls people continually to justice. According to the prophets, religious faith could be genuine only when it led the believers to "seek justice, rescue the oppressed, defend the orphans, [and] plead for the widow."

## General Regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III provides the general setting for the programs of each school and outlines the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

### APPLICATION AND ADMISSION

#### General entrance information

Applicants to the School of Pharmacy must fulfill the prerequisite course requirements listed below. For a course to fulfill the biology, chemistry, organic chemistry, and physics prerequisites, it must be taken at the level of those required for a science major in the field. Introductory courses are not acceptable. Courses accepted to fulfill the prerequisites for biochemistry, microbiology, and human anatomy may be taken at any level as long as the unit requirements are fulfilled.

The minimum cumulative G.P.A. and cumulative mathematics/science G.P.A. considered for acceptance to the School of Pharmacy is 2.75 on a 4.00 scale.

#### Required courses

	Semester Hours	Quarter Hours
General biology, with laboratory	8*	12*
General chemistry, with laboratory	8*	12*
Organic chemistry, with laboratory	8*	12*
General physics, with laboratory	8*	12*
General biochemistry	3	4
General microbiology	3	4
Human anatomy**	3	4
Calculus (integral and differential)	4	6
Speech communication	3	4
Economics (macro or micro)	3	4
General psychology	3	4

\* The semester and quarter units listed above (for general biology, general chemistry, organic chemistry, and general physics) are the *minimum* number of units that must be completed to fulfill the prerequisite requirements. Some applicants may be required to complete more than the minimum number of units to satisfy the content requirement of the subject area.

\*\* The requirement for human anatomy can be met with a combined human anatomy and physiology course. Courses that only cover human physiology will not be accepted to fulfill this prerequisite.

In rare circumstances will a student who has not completed a bachelor's degree be considered for admission into the School of Pharmacy. Applicants without a bachelor's degree must complete an additional 6 semester or 9 quarter units of course work in social and behavioral sciences, an additional 12 semester or 18 quarter units of course work in humanities and fine arts, and an additional 6 semester or 9 quarter units of English composition.

Decisions regarding the final determination of acceptable courses as prerequisites reside with the School of Pharmacy Admissions Committee in collaboration with the Loma Linda University director of records.

**Recommended courses**

Cellular and molecular biology  
Histology  
Immunology  
Physiology

**Recommended experience**

It is highly recommended that applicants obtain volunteer or pharmacy work experience.

**APPLICATION AND ACCEPTANCE REQUIREMENTS****Application process**

The School of Pharmacy only accepts online applications through the central application service PharmCAS. The link to PharmCAS and other required forms are available online at <llu.edu/central/apply>.

**Procedure**

The application procedure is as follows:

- Online submission of Doctor of Pharmacy application through PharmCAS.
- When the PharmCAS application is received, Loma Linda University School of Pharmacy will request completion of an LLU secondary application.
- Three online letters of recommendation from previous instructors, employers (pharmacist employer if possible), and a spiritual advisor (required).
- Written personal statement (answer all questions in two pages or less).
- Projected College Work form (if applicable).
- Completed Academic Prerequisite Record form (available after the LLU secondary application is submitted).
- Payment of the \$75 application fee by check or credit card submitted with the online LLU secondary application.
- After the secondary application and letters of reference have been submitted and reviewed, the applicant may be invited for an interview.

All application documents are evaluated by the School of Pharmacy Admissions' committee to determine if the applicant is accepted, placed on an alternate list, or denied. All applicants are notified of the final committee decision. Admission into the School of Pharmacy continues until the class is filled.

**Acceptance process**

The accepted applicant is sent an email acceptance letter that includes a link to the online confirmation process and deadline. At this link, the accepted applicant can confirm and pay the \$500 class holding fee

electronically. The class holding fee can also be paid by check for an additional processing fee of \$25. The class holding fee is applied to the student's financial account at the time of matriculation. Class holding fees are nonrefundable. A follow-up acceptance letter is also mailed to the applicant's home address.

### **International applicants**

International applicants must have their transcripts reviewed by one of the following evaluation services prior to applying:

- American Association of Collegiate Registrars and Admissions Officers (AACRAO) <ies.aacrao.org/>
- Educational Credential Evaluators, Inc. (ECE) <ece.org>
- World Education Services (WES) <wes.org>
- American Education Research Corporation (AERC) <aerc-eval.com>

If the applicant's native language is not English, or if most education was completed in a non-English program, a score of at least 79 (Internet based) or 213 (computer based) on the Test of English as a Foreign Language (TOEFL) is required. Some consideration is given to applicants who have earned a college degree in an English-speaking country. Please visit <ets.org/toefl> for more information.

### **Rolling admission**

The School of Pharmacy has a rolling admission policy in which completed applications are reviewed and students are accepted on a continual basis within the period from November to June.

### **Admission deadline**

The School of Pharmacy accepts applications through PharmCAS from June 1 through November 1 for entry in September of the following year.

Transcripts, evaluation of international transcripts (if applicable), and TOEFL scores (if applicable) should be mailed to the following address:

Admissions Processing  
Loma Linda University  
Loma Linda, CA 92350

Letters of recommendation are now accepted only through the online application. Instructions for online letters are given once an application has been started. Committee letters are accepted from Seventh-day Adventist colleges/universities only and will fulfill the requirement for recommendation letters.

### **Transfer credit units**

The School of Pharmacy does not accept students with advanced status in the Pharmacy Program.

### **Computer competency**

Students must have computer proficiency prior to enrollment, which includes use of an email system (including attaching a document); as well as basic skills using a word processing program (Word, WordPerfect), a presentation program (PowerPoint), and a spreadsheet program (Excel). Students must also be capable of searching the Internet.

## **TECHNICAL STANDARDS FOR ADMISSION, PROMOTION, AND GRADUATION**

### **Technical standards**

Technical standards specify those attributes the faculty consider necessary for initiating, continuing, or completing a high-quality pharmacy education program, thus enabling each graduate to enter practice, residency, or fellowship training. The faculty are entrusted with the responsibility of monitoring the maintenance of these standards. Students must be able to perform independently all of the described functions. A candidate for the Doctor of Pharmacy degree must have aptitude, abilities, and skills in the following areas: observation; communication, motor coordination and function; conceptual, integrative, and quantitative abilities; behavioral and social attributes; and ethical values. The School of Pharmacy will consider for admission any applicant who demonstrates the ability to perform or to learn to perform the skills listed in this document. Applicants are not required to disclose the nature of their disability(ies), if any, to the Admissions Committee. However, any applicant with questions about these technical standards is strongly encouraged to discuss his/her specific issue(s) with the assistant dean, Student Affairs and Admissions prior to the interview process. If appropriate, and upon the request of the applicant, reasonable accommodations will be provided. This commitment also holds for current students who experience changes in health or abilities while enrolled in the program.

The School of Pharmacy recognizes that certain student disabilities can be accommodated without compromising the standards required by the University and the integrity of the curriculum. Technological compensation can be made for some handicaps in these areas, but a candidate should be able to perform in a reasonably independent manner. The school is committed to the development of innovative and creative ways of opening the curriculum to competitive and qualified disabled candidates while protecting the care of patients. The use of a trained intermediary means that a candidate's judgment must be mediated by someone else's power of selection and observation. Therefore, third parties cannot be used to assist students in accomplishing curricular requirements in the skill areas specified above.

### **Observation**

Students must be able to observe demonstrations and conduct exercises in a variety of areas related to contemporary pharmacy practice, including but not limited to monitoring of drug response and preparation of specialty dosage forms and experiments in the basic sciences. A student must be able to observe a patient accurately at a distance and close at hand, noting nonverbal as well as verbal signals. The student must be able to observe and interpret presented information. Specific vision-related requirements include, but are not limited to the following abilities: visualizing and discriminating findings on monitoring tests; reading written and illustrated material; observing demonstrations in the classroom or laboratory, including projected images; observing and differentiating changes in body movement; observing anatomic structures; discriminating numbers and patterns associated with diagnostic and monitoring instruments and tests; observing a patient's environment; and competently using instruments for monitoring drug response.

### **Communication**

A student should be able to speak to, hear, and listen to patients in order to elicit information; describe changes in mood, activity, and posture; and perceive verbal as well as nonverbal communications. Students must be able to relate effectively and sensitively with patients and their caregivers and or partners, and convey a sense of compassion and empathy. Students must be able to communicate effectively and sensitively with patients and faculty and staff in the School of Pharmacy. Communication

includes speech, reading, writing, hearing, and computer literacy. Students must be able to communicate quickly, effectively, and efficiently in oral and written English with all members of the health care team. Specific requirements include but are not limited to the following abilities: communicating rapidly and clearly with members of the health care team individually and collectively; eliciting a thorough medication and medical history; and communicating complex findings in appropriate terms that are understood by patients and their caregivers, partners, and various members of the health care team (fellow students, pharmacists, faculty and staff members, physicians, nurses, aides, therapists, social workers, and others). Students must be able to prepare and communicate concise but complete summaries of individual activities and decisions; as well as complex, prolonged encounters with patients. Students must be able to complete forms or appropriately document activities according to directions in a complete and timely fashion.

### **Motor coordination and function**

Students should have sufficient motor function and skills necessary to perform basic tasks in the practice of pharmacy and to elicit information from patients by various screening maneuvers. A student should be able to execute motor movements reasonably required to participate in the general care and emergency treatment of patients. They must be able to respond promptly to urgencies within the practice setting and must not hinder the ability of their co-workers to provide prompt care. Examples of such emergency treatment reasonably required of pharmacists include arriving quickly when called, administration of cardiopulmonary resuscitation, application of pressure to stop bleeding, participating in the initiation of appropriate procedures, rapidly and accurately preparing appropriate emergency medication, and the preparation of sterile intravenous medications. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision. Students must have sufficient sensory and motor function to monitor drug responses and to prepare and or dispense pharmaceuticals. A candidate should be able to perform basic laboratory tests (e.g., blood glucose and lipid levels); administer immunizations (intramuscular and subcutaneous); compound sterile and nonsterile dosage forms; use current technology for drug information evaluation; and read EKGs, drug blood levels, and other laboratory results. It is also necessary for the student to be able to access drug and disease information sources (both paper and electronic) within a reasonable time frame and record data correctly so that it is clearly understood by other health professionals.

### **Intellectual, conceptual, integrative, and quantitative abilities**

A student should possess sufficient intellectual, conceptual, integrative, and quantitative abilities to complete a rigorous and intense didactic and experiential curriculum. These abilities include measurement, calculation, rational reasoning, problem analysis and solving, decision making, judgment, numerical recognition, information integration, and solution synthesis. In addition, the candidate should be able to comprehend three-dimensional relationships and understand the spatial relations of structures. Especially important is the appropriate and rapid calculation of dosages for a variety of patient-specific conditions such as renal or hepatic failure, obesity, cardiac or respiratory arrest, etc. Additionally, calculations involving appropriate dilution or reconstitution of drug products, electrolytes, etc., must be made accurately and quickly. Problem solving and critical skills demanded of all pharmacists require all of the above-mentioned intellectual abilities and must be performed quickly, especially in emergency situations. The ability to incorporate new information from peers or teachers and to locate and evaluate new information from the literature to be used appropriately in formulating assessments and pharmaceutical care plans is essential, as is good judgment in patient assessment and therapeutic planning for disease management. Students must be able to identify and acknowledge the limits of their

knowledge to others when appropriate and must be able to recognize when the limits of their knowledge indicate further study or investigation is essential before participating in decision making. A student must be fully alert and attentive at all times in clinical settings.

### **Behavioral and social attributes**

Empathy, integrity, honesty, concern for others, kindness, patience, good interpersonal skills, interest, and motivation are required personal qualities. Students must possess the emotional and mental health required for full use of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the screening and care of patients, and the development of mature, sensitive, and effective relationships with patients of differing cultures and backgrounds. Students must also be able to develop mature, sensitive and effective relationships with patients and their caregivers and partners, providing comfort and reassurance when appropriate.

Students must possess adequate endurance to be able to tolerate physically, intellectually, and emotionally taxing workloads and to function effectively under stress or with distractions. At times, this requires the ability to be aware of and appropriately react to one's own immediate emotional responses and environment. For example, students must maintain a professional demeanor and organization in the face of long hours and personal fatigue, dissatisfied patients, and tired colleagues.

Students must develop the skills necessary to instruct and supervise technical personnel assisting with the delivery of pharmaceutical services. Students are expected to accept appropriate suggestions and criticism and, if necessary, respond quickly, appropriately, and cooperatively by modification of behavior. Empathy, patience, integrity, concern for others, interpersonal skills, interest, and motivation are personal qualities that should be assessed during the admission and education processes.

### **Ethical values**

Students must demonstrate the highest level of professional demeanor and behavior and must perform in an ethical manner in all dealings with peers, faculty, staff, and patients. Students must also be able to develop professional relationships with patients and their caregivers and partners while protecting patient confidentiality. Students must also meet the expected ethical standards set forth by the pharmacy profession. Good moral character, decent values, and principled judgment are paramount attributes for being a professional. In order to participate in key components of the curriculum, a student must be able to obtain and maintain a valid intern pharmacist license from the California Board of Pharmacy and pass requisite criminal background checks and random illegal drug screens required by the board or affiliated clinical institutions.

### **Applicable technical standards requirements**

1. The candidate/student observes demonstrations and participates in experiments in the basic pharmaceutical sciences.
2. The candidate/student analyzes, synthesizes, extrapolates, solves problems, and reaches therapeutic judgments and monitoring parameters.
3. The candidate/student sufficiently uses the senses of vision and hearing and the somatic sensation necessary to perform a physical assessment. (For example, the candidate/student performs palpation, auscultation, and percussion.)
4. The candidate/student relates to patients of all cultures and backgrounds and establishes sensitive, professional relationships with them.

5. The candidate/student communicates therapeutic options and decisions to the patient and to colleagues with accuracy, clarity, and efficiency.
6. The candidate/student learns and performs routine laboratory tests and screening procedures.
7. The candidate/student performs with precise, quick, and appropriate actions in emergency situations.
8. The candidate/student displays good judgment in the assessment and treatment of patients.
9. The candidate/student possesses the perseverance, diligence, and consistency to complete the School of Pharmacy curriculum and to enter the practice of pharmacy.
10. The candidate/student accepts criticism and responds with the appropriate modification of behavior.

## Student Life

The information on student life contained in this CATALOG is brief. The University *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies; and is available to each registered student. Students need to familiarize themselves with the contents of the *Student Handbook*. Additional information regarding policies specific to a particular school or program within the University is available from the respective school.

The School of Pharmacy prepares the school-specific *Policy and Procedure Manual*, which is provided to all pharmacy students. Regulations, policies, procedures, and other program requirements are contained in this manual.

### GENERAL EXPECTATIONS

#### Health check requirements

All new students are required to have the immunizations listed below completed before their first registration. Students will not be allowed to register without a valid and completed immunization record. It is strongly recommended that all required immunizations and physical examinations be obtained by the student before arrival on campus. All of these immunizations, except the third hepatitis B, can be completed in one month. Many county health departments offer these immunizations at a reduced cost.

#### Immunizations

- Measles, mumps, rubella (MMR)—Series of two injections must be current after 1980 or show a positive MMR titer.
- Tdap (Tetanus/Diphtheria)—Must be current within ten years. (Note: Tetanus-only immunization does not meet the requirement.)
- Hepatitis B—Series of three injections, recombinant form-Engerix-B.
- Tuberculosis skin test (PPD Mantoux)—Must be current within six months. (If student tests positive, a chest X-ray report done within the past year is required.)
- Varicella (chickenpox)—Must show proof of either a series of two injections or a positive Varicella titer.

A completed immunization record form must be submitted to the School of Pharmacy Office of Student Affairs, as well as to the Student Health Services. A valid and completed immunization record is required before the student can register.

#### Physical examination

Documentation of a physical examination is required for entrance into the program. For additional information, please contact Student Health Services directly at 909/558-8770.

#### Background check

Students are required to pass a background check prior to each Fall Quarter registration in order to comply with clinical site regulations. Applicants receive detailed information through the applicant portal regarding the process for obtaining the background check.

## Pharmacy intern license

California law requires that all pharmacy students be licensed as interns before participating in any pharmacy practice experience. Consequently, all enrolled students must possess a valid, nonprobationary intern pharmacist license to participate in the experiential components of the Pharm.D. program. Application for this license is part of the orientation program scheduled prior to the start of the PY1 year.

## Professional integrity

Loma Linda University seeks to educate ethical and proficient pharmacists in a Christian paradigm. Fundamental core values of compassion, integrity, freedom, excellence, justice, purity, and humility are expected of each student attending the School of Pharmacy. Integrity is important in upholding the standards of professional and personal conduct and is consistent with the oath that is taken upon graduation. It includes being accountable for one's own conduct, as well as assuming responsibility for the professional behavior of one's colleagues within the profession. Professionalism involves treating others with courtesy and respect. It is expected that all School of Pharmacy students will exhibit conduct that shows respect to others at all times.

## CODE OF CONDUCT

In harmony with the goals of Loma Linda University, students are expected to demonstrate a pattern of personal discipline with lifestyle expectations that are consistent with those of the Seventh-day Adventist Church. Joining the Loma Linda University family is an honor and requires each individual to uphold the policies, regulations, and guidelines established for all members of the University team. The following are expected of each member of the Loma Linda University family:

- To respect oneself.
- To respect the dignity, feelings, worth, and values of others.
- To respect the rights and property of others and to discourage vandalism and theft.
- To prohibit discrimination while striving to learn from differences in people, ideas, and opinions.
- To practice personal, professional, and academic integrity; and to discourage all forms of dishonesty, plagiarism, deceit, and disloyalty to the code of conduct.
- To foster a personal, professional work ethic within the Loma Linda University family.
- To foster an open, fair, and caring environment.
- To be fully responsible for upholding the Loma Linda University code.

Specific policies are outlined in greater detail in the University *Student Handbook*.

## CPR AND FIRST AID CERTIFICATION

All students must be currently certified in cardiopulmonary resuscitation (CPR) and first aid during their enrollment in the School of Pharmacy.

## STUDENT ORGANIZATIONS

### Professional development

Participation in the professional development sequence each academic quarter is part of the curriculum for the School of Pharmacy. The purpose of professional development is to encourage student participation that develops leadership skills in student organizations, the School of Pharmacy, and University activities.

### **Professional organizations**

Involvement in professional organizations is an integral part of the educational and professional experience within the School of Pharmacy.

School of Pharmacy recognized student professional societies include:

- American Pharmacists Association (APhA-ASP)
- California Pharmacists Association (CPhA)
- California Society of Health Systems Pharmacists (CSHP)
- American Society of Health System Pharmacists (ASHP)
- Academy of Managed Care Pharmacy (AMCP)
- Christian Pharmacist Fellowship International (CPFI)
- Student National Pharmaceutical Association (SNPhA)

### **Organization membership by invitation**

The School of Pharmacy endorses three organizations in which student membership is by invitation only. Membership in these organizations is seen as prestigious and indicative of superior academic achievement and leadership.

- California Pharmacy Student Leadership (CAPSLEAD)
- Rho Chi Pharmaceutical Honor Society (RX)
- Phi Lambda Sigma National Pharmacy Leadership Society (PLS)

### **Class leadership**

Each class elects leaders to serve as student representatives to administration and to guide the class in addressing student-related issues. The Office of Student Affairs works closely with class leaders—assisting with class issues, helping plan events, and facilitating a strong communication link to and from students. Each class also elects a full-time faculty member to serve as class advisor. The advisor's function is to serve as mentor, keep abreast of class issues, and maintain an open communication link with the director of the Office of Student Affairs.

## **ACADEMIC POLICIES AND PROCEDURES**

### **Curriculum outcome objectives**

The Loma Linda University School of Pharmacy student learning outcomes are to:

- Perform the functions necessary to provide patient-centered care.
- Perform the functions necessary to provide population-based care.
- Perform safe medication distribution and handling.
- Provide public health services.
- Apply the Loma Linda University philosophy of wholeness in their personal and professional lives.
- Apply core biomedical knowledge to patient-centered care.

### **Student progression**

The curriculum is designed to be followed in a stepwise, block manner. All prerequisites must be completed before a student can enroll in a course. Students must pass all of the professional courses for

the current year before enrolling in courses for the succeeding years. In addition, each student must pass the end-of-year comprehensive assessment examination. The academic standing of each student is reviewed quarterly by the Office of Academic Affairs. Students who fail to meet the minimum standards will be notified, in writing, by the Office of Academic Affairs.

A minimum grade of C- is required to pass all pharmacy courses and electives. Following a course failure, a student's progression will stop; and s/he will be placed on leave-of-absence status for two academic quarters (not including summer). Upon returning from the leave of absence, the student must repeat the course(s) failed initially. A student will be permitted a cumulative total of 9 credit hours of unsatisfactory course work during the academic program. Exceeding 9 credit hours of unsatisfactory course work, whether accumulated in a single academic quarter or throughout the entire academic program, will result in dismissal from the program.

A student will have a maximum of six calendar years from the initial date of matriculation to complete the Doctor of Pharmacy degree.

### **End-of-year assessment examinations**

One of the requirements for progressing from one professional year to the next is passing a comprehensive, year-end, qualifying examination. These examinations are prepared by curricular year-specific teams of faculty members. The results of the end-of-year assessment examination will be communicated by the PY1, PY2, PY3 curricular year team chair to the Office of Academic Affairs for communication to individual students. Failure to pass these examinations will delay progression and enrollment in the subsequent year.

- Students who fail the end-of-year-assessment examination on the first attempt will retake a different, but similar in difficulty, examination as scheduled by the Assessment Committee.
- Students who fail the second attempt (first retake) must complete an oral examination (second retake) administered per the Assessment Committee's requirements. The oral examination will be conducted by the curricular year-specific team of faculty members. The oral examination will focus on establishing a student's competency in the subject matter for the PY1, PY2, PY3 curricular year as appropriate to the specific students. The results will be communicated in writing to the associate dean for academic affairs.
- Students who fail the third attempt (the oral examination) will **not** progress to the next professional year.

### **Grading system**

#### **Grade and grade points**

The following grades and grade points are used in the School of Pharmacy. All courses taught are approved for letter grades only. The exceptions are forum and professional development, which will be graded on an S/U (satisfactory/unsatisfactory) basis. The grades and corresponding grade-point scales are:

93-100    A     4.0    Outstanding performance

90-92     A-    3.7

87-89	B+	3.3	
83-86	B	3.0	Satisfactory performance
80-82	B-	2.7	
77-79	C+	2.3	
73-76	C	2.0	
70-72	C-	1.7	Marginal performance
67-69	D+	1.3	Unsatisfactory performance
60-66	D	1.0	
<60	F	0.0	
S		0.0	Satisfactory performance in pharmacy forum or professional development
U		0.0	Unsatisfactory performance in pharmacy forum or professional development

### **Incomplete grade**

The notation "I" (incomplete) in a course is given only for circumstances beyond a student's control. It will not be granted as a remedy for course overload, failure on a final examination, absence from a final examination for other than an emergency situation, or a low grade to be raised with extra work.

In order to receive an incomplete, the student must initiate a request to receive a grade of "I" by completing a Petition to Receive Incomplete Grade form and stating the reason for the request. If this request is approved, the instructor will report an "I" as well as the grade the student will receive if the deficiency is not removed within the prescribed time limit.

An "I" notation must be changed to an earned letter grade before the end of the following term (excluding summer sessions). Failure to complete course requirements will cause the incomplete work to be counted as a zero and factored in with the existing grade to calculate the final grade for the course.

### **Grade changes**

A grade may not be changed except when an error has been made in computing or recording. Such changes may be processed only up to the end of the following term.

In order to satisfactorily complete a course for which a grade of less than C- has been earned, the student must repeat the course. This includes attending lecture and/or laboratory sessions as required, completing the assigned work, and taking any required examinations. Both the original and repeat course grades are entered on the permanent transcript record, but only the second (repeat) course grade is used to compute the grade-point average (G.P.A.). A course may be repeated only once.

## Grade appeals

Every student has the right to receive a grade assigned upon a fair and unprejudiced evaluation based on a method that is neither arbitrary nor capricious. Furthermore, instructors have the right to assign a grade based on any method that is professionally acceptable, communicated to all students in the course syllabus, and applied equally.

Instructors have the responsibility to provide careful evaluation and timely assignment of appropriate grades. Course and project grading methods should be explained to students at the beginning of the term. Academic integrity assumes that the instructor's judgment of record is authoritative and that the final grades assigned are correct.

A grade appeal is confined to charges of unfair action toward an individual student and may not involve a challenge of an instructor's grading standard. A student has the right to expect thoughtful and clearly defined approaches to grading, but it must be recognized that varied standards and individual approaches to grading are valid. The grade appeal considers whether a grade was determined in a fair and appropriate manner; it does not attempt to grade or regrade individual assignments or projects. It is incumbent on the student to substantiate the claim that his or her final grade represents unfair treatment. Only the final grade in a course may be appealed. In the absence of compelling reasons—such as clerical error, prejudice, or arbitrariness—the grade assigned by the instructor of record is to be considered final.

In a grade appeal, only arbitrariness, prejudice, and/or error will be considered as legitimate grounds for an appeal.

- **Arbitrariness:** The grade awarded represents such a substantial departure from accepted academic norms as to demonstrate that the instructor did not actually exercise professional judgment.
- **Prejudice:** The grade awarded was motivated by ill will and is not indicative of the student's academic performance.
- **Error:** The instructor made a mistake in fact.

The grade appeal procedure applies only when a student initiates a grade appeal and not when the instructor decides to change a grade on his or her own initiative. This procedure does not cover instances where students have been assigned grades based on academic dishonesty or academic misconduct. Also excluded from this procedure are grade appeals alleging discrimination, harassment, or retaliation in violation of Loma Linda University's sexual harassment policy.

The grade appeal procedure strives to resolve, in a collegial manner, a disagreement between student and instructor concerning the assignment of a grade. The intent is to provide a mechanism for the informal discussion of differences of opinion and for the formal adjudication by a grade appeal panel only when necessary. In all instances, students who believe that an appropriate grade has not been assigned must first seek to resolve the matter informally with the instructor of record. If the matter cannot be resolved informally, the student must proceed with a grade appeal in the procedure outlined below. The grade appeal process must be started within ten working days after the end of the academic quarter in which the disputed grade is received.

## Student grade-appeal process

**Step 1.** A student who wishes to question a grade must discuss the matter first with the instructor within ten working days after the end of the academic quarter in which the disputed grade is received. In most cases, the discussion between the student and the instructor should suffice, and the matter will not need to be carried further. The student should be aware that the only valid basis for grade appeal beyond Step 1 is to establish that an instructor assigned a grade that was arbitrary, prejudiced, or in error.

Step 2. If the student's concerns remain unresolved after Step 1, the student may submit a written request to meet with the appropriate department chair within five working days of speaking with the instructor. In situations where the instructor of record is a department chair or associate dean, then the dean will serve as the appropriate department head in this step. The appropriate department chair will meet within five working days with the student; and, if the department chair believes that the complaint may have merit, s/he will meet with the instructor. After consultation with the department chair, the instructor may choose to let the grade remain or change it. The department head will then communicate the result to the student and instructor.

Step 3. If the matter remains unresolved after Step 2, the student should submit to the dean within five working days a written request that includes all supporting documents. The dean will appoint a grade appeal panel to review the request. The panel may require any or all individuals associated with the appeal to appear. The panel is charged with determining whether the grade was assigned in a fair and appropriate manner, or whether clear and convincing evidence of unfair treatment—such as arbitrariness, prejudice, and/or error—might justify changing the grade. The panel will make its decisions based on a majority vote. If the panel concludes that the grade was assigned in a fair and appropriate manner, it will report its conclusion in writing to the student and instructor, and the matter will be considered closed. If the panel determines that compelling reasons exist for changing the grade, it would request that the instructor make the change, providing the instructor with a written explanation of its reasons. Should the instructor decline, s/he must provide a written explanation for refusing. The panel, after considering the instructor's explanation and upon again concluding that it would be unjust to allow the original grade to stand, will then determine what grade is to be assigned. The new grade may be higher than, the same as, or lower than the original grade. Having made this determination, each panel member will sign the grade change form and transmit it to the Office of University Records. The instructor and the student will be advised of the new grade. Under no circumstances may the grade be changed except by the original faculty member or the panel. Should the panel conclude that the instructor's written explanation justifies the original grade, the panel will report this in writing to the student and the instructor; and the matter will be closed.

### **Class attendance**

Student attendance in classes is considered to be the cornerstone of professional behavior and is expected in all classes. Instructors may require attendance in class as a condition of passing a course or as part of the grade a student earns.

### **Chapel**

In keeping with the commitment to the mission of the University, all School of Pharmacy students are required to attend a weekly chapel service. The chapel service is a core component of the wholeness curriculum at Loma Linda University. Chapel services provide opportunities for members of the University community to benefit from programming that integrates faith and learning. By setting aside time each week for a chapel program, the University seeks to emphasize the value it places on spiritual development, corporate worship, and community. This also reaffirms the University's commitment to the ideals upon which it was founded. Regular attendance is required at the weekly chapel services, as well as the daily services during the quarterly Week of Devotion. Students are expected to fulfill this requirement as they would any other component of the curriculum.

## **Pharmacy forum**

Pharmacy forum is a scheduled time during which professors and students come together to discuss pertinent issues and address professional topics that enhance the student's academic and professional experience. This is considered part of the pharmacy curriculum, and each quarter students receive a Satisfactory or Unsatisfactory grade for forum. Attendance is required and is a component of the forum grade.

## **Dean's list and honor roll**

The Office of Academic Affairs compiles a list of students who have demonstrated their academic excellence by achieving an outstanding grade-point average each quarter. A student who earns a 3.30-3.69 grade-point average with no incomplete grades during a term is given honor roll standing. A student who earns a 3.70 or better grade-point average, with no incomplete grades, is given Dean's List standing.

## **Honors and awards**

The School of Pharmacy awards excellence in scholastic attainment and leadership abilities. Awards are available to students whose performance and attitudes reflect the mission and goals of Loma Linda University and the School of Pharmacy. Students demonstrating excellence in scholarship, professionalism, and leadership ability may be nominated for recognition. Selection of students for the following awards is a function of the Honors and Awards Committee with input from the faculty.

The PRESIDENT'S AWARD is given annually to a graduating student who has demonstrated excellence in scholarship and community service within the framework of commitment to the highest ideals of the University.

The DEAN'S AWARD is given annually to a graduating student who has demonstrated excellence in scholarship.

The WIL ALEXANDER WHOLE PERSON CARE AWARD is given annually to a graduating student who has demonstrated superior commitment to helping others.

DEAN'S SCHOLARSHIPS are given annually to the top three students academically in the first three years of the Doctor of Pharmacy program.

In addition, the School of Pharmacy receives funding annually from a variety of organizations dedicated to assisting the School in helping students meet the financial obligations for their education. These funds are distributed to students who have demonstrated a strong commitment to their studies as well as a commitment to the values of the institution.

## **Performance levels**

### **Good academic standing**

To remain in good academic standing, pharmacy students must maintain a minimum cumulative grade-point average of 2.30. Failure to maintain good academic standing will result in action by the Office of Academic Affairs. In addition to the cumulative G.P.A., a grade of at least a C- must be earned in any course for which credit is to be applied towards completion of the requirements of the Doctor of Pharmacy degree.

### **Academic probation**

Each student's academic status will be reviewed at the end of every quarter, including cumulative G.P.A. as reported by the Office of University Records. A student with a cumulative G.P.A. of less than

2.30 will be placed on academic probation and will receive a letter from the Office of Academic Affairs. This written notice of academic probation will also include a notice that failure to reach the required G.P.A. by the end of the next two successive academic terms will result in the student being dismissed from the school. Academic probation will also result when a student receives less than a C- in any advanced pharmacy practice experience (APPE) during the PY4 year.

Each student on academic probation is required to meet with his/her faculty advisor by the end of the second week of the probationary term to develop and agree to, in writing, an academic improvement plan (AIP). The AIP may include mandatory study/advising sessions, mandatory class attendance, and/or other stipulations aimed at encouraging and supporting student academic success. A copy of a student's AIP will be maintained in his/her advising folder, and a copy of the AIP will also be forwarded to the Office of Academic Affairs. The faculty advisor is expected to inform the Office of Academic Affairs of the student's compliance with this policy and his/her academic progress. Failure by the student to seek appropriate assistance from his/her faculty advisor will not be accepted as a valid reason to stop the imposition of the appropriate academic probationary or other status.

Academic probation status will remain in effect for two consecutive academic quarters. Upon completion of each academic quarter, a student on academic probation will receive in writing from the Office of Academic Affairs a notice of his/her current standing. It is expected that students on probation will make progress toward good academic standing at the conclusion of each academic quarter. At the conclusion of the second consecutive academic quarter, the student must have achieved good academic standing. Failure to do so will result in dismissal.

Academic probation will be lifted when the student's cumulative G.P.A. rises above 2.30 or when the student successfully completes the type of APPE course previously failed. There is no appeal process associated with academic probation.

### **Academic dismissal**

Since courses may not be attempted more than twice (i.e., a course may be repeated only once)—including APPEs—grades of D+, D, D-, F, and W are considered to be attempts to complete degree program courses. Failure to complete any course in the program within the limits of good academic standing will result in dismissal from the program.

A dismissed student will receive written notification from the dean of the School of Pharmacy. The notice will include procedures for appeal; and notice of loss of registration, financial aid, housing, etc. It is the student's responsibility to arrange with the Office of University Records for formal withdrawal within one week of receiving the written notification. Dismissed students are required to turn in any school or University ID badges and vacate University residence halls. The school will also notify the California State Board of Pharmacy for termination of the student's pharmacy intern license.

### **Readmission of dismissed students**

A dismissed student may reapply and be considered for readmission. To be considered for readmission, the student must petition (in writing) the Academic Standing and Professionalism Committee. Petitions are due in the dean's office by the designated date (following each term), as published and sent to each dismissed student. After review of the written appeal, the Academic Standing and Professionalism Committee may uphold the dismissal or may recommend the student for readmission with or without conditions/stipulations. The Admissions Committee reviews each case separately and reserves the right to determine the provisions/conditions for each individual situation.

A student who has been dismissed twice is not eligible for readmission to the same degree program for a period of twelve months, or until s/he demonstrates the ability to succeed through course work taken at

another institution. Following this twelve-month period, a student may apply for readmission by following the above procedures. The dismissal decisions made by the Academic Standing and Professionalism Committee may be appealed. All appeals must be in writing and submitted to the dean of the School of Pharmacy by the established/stated deadline. A student who questions whether the School of Pharmacy has followed prescribed process with regard to his/her grievance may request the Office of the President to conduct a review.

### **Withdrawal from the program**

It is the student's responsibility to begin the withdrawal process from a course or the curriculum in a timely manner. It is important for the student to seek counseling or guidance from his/her faculty advisor or other administrative persons regarding a situation that may negatively impact upon academic performance. Failure to seek appropriate assistance will not be accepted as a valid reason to stop the imposition of the appropriate academic penalties.

If a student finds it necessary to withdraw during the course of a quarter, the Office of Student Affairs must be notified in writing. Arrangements for formal withdrawal must then be made in the Office of University Records by completing and submitting a Withdrawal from the Program form. Courses dropped during the first two weeks of the term are not included in the student's permanent record, and tuition is refunded. Refer to the University's refund policy in the Financial Information section of the *Student Handbook* for information that applies after the first two weeks of the quarter. An exit interview with the School of Pharmacy administration is required.

### **Experiential education**

The School of Pharmacy participates in the California Board of Pharmacy's approved supervised experiential program. The school will certify 600 of the required 1,500 hours of supervised experience required to sit for the licensing examination. Successful completion of the School of Pharmacy's didactic and experiential programs, and passing scores on the North American Pharmacist Licensure Examination (NAPLEX) and a law examination or equivalent, are required in order to become a registered pharmacist (RPh) in the state(s) of choice.

The experiential program consists of a variety of introductory and advanced pharmacy practice experiences designed to provide the student with professional experience through the use of a structured and supervised program of study. Students participating in the experiential program will receive a Loma Linda University School of Pharmacy *Experiential Program Manual*. Guidelines and policies are listed in this manual and must be adhered to in order to successfully complete the program.

Didactic education is a systematic approach intended to convey instruction and information (classroom, laboratory, recitation, etc.). Experiential education is related to or derived from providing experiences in real-life professional settings. In pharmacy education, the experiential component is designed to provide in-depth exposure to and active participation in selected pharmacy practice settings. Pharmacy students are exposed to prescription processing, compounding, documenting services, obtaining drug histories, drug therapy monitoring, counseling, evaluating drug usage, drug distribution systems, and other relevant pharmacy practice activities.

Under the philosophy of pharmaceutical care, the School of Pharmacy offers introductory pharmacy practice experiences (IPPE) in the PYs 1-3 to enhance practice skills and prepare students to function as members of a health care team. The advanced pharmacy practice experiences (APPE) in the PY4 are designed to help students integrate and refine the skills learned in the first three years of pharmacy (didactic and experiential) course work.

The purpose of the experiential education program is to apply didactic knowledge to pharmacy practice. The ultimate goal of the experiential program is to produce well-rounded, competent, caring, and responsible pharmacists who can deliver exemplary pharmaceutical care, as well as communicate effectively with diverse patients and other health care professionals.

### **Experiential education requirements**

The majority of the student's time during experiential courses is spent on out-of-the-classroom activity under the direct supervision of a School of Pharmacy preceptor. When a student is off campus during an IPPE or APPE rotation, Loma Linda University's code of conduct and the guidelines found in the *School of Pharmacy Student Policies and Procedures Manual* are still in effect throughout the completion of this experience. If experiential site regulations and policies differ from University policies, the site policies supersede. In addition to the above-mentioned guidelines, the following items are to be followed by all professional pharmacy students assigned to experiential sites or rotations.

- Attendance is mandatory. Punctuality is expected, and excessive tardiness will not be tolerated.
- Students must maintain their University email account and are required to check the account at least daily to keep apprised of important information or announcements.
- All experiential educational assignments are made through the Division of Experiential Education and are the responsibility of the directors of experiential education. No student is allowed to change rotation sites.
- Students are not to function as an agent or employee of the site. They must identify themselves as pharmacy students from Loma Linda University School of Pharmacy. While participating in this graded experience, students shall not, under any circumstances, receive financial remuneration from the experiential site. Failure to adhere to this policy will result in suspension and removal from the rotation and receipt of a failing grade in the course.

All financial obligations associated with the student's pharmacy education are the responsibility of the student. These responsibilities include transportation, food, lodging, and any other incidental costs related to off-site assignments. Concurrent employment during the experiential experience does not exclude or excuse students from any responsibilities associated with course requirements. The student must possess a valid driver's license and is responsible for transportation to and from sites.

Loma Linda University School of Pharmacy students are required to dress and act professionally at all times. This expectation extends to experiential educational activities where the student is not physically on the campus but receives instruction and guidance through a School of Pharmacy preceptor.

The Division of Experiential Education requires all students to adhere to the School of Pharmacy dress code and to wear their Loma Linda University identification card and short white laboratory coat at all times while at the experiential site. The laboratory coat must be white, clean, and freshly pressed/ironed. Students who attend out of dress code will be considered absent by the preceptor and sent home to fulfill dress code requirements *prior to returning* to the practice site.

In addition to the general school requirements, other rules may apply for students who are off site. If the experiential site has special attire or dress code requirements, the more stringent of the dress code requirements prevails, whether that of Loma Linda University or of the off-site institution.

## Pharmacy practice experience

In order to complete the curriculum successfully, graduate from the School of Pharmacy, and become a licensed pharmacist, the student is required to complete a minimum of 1,500 hours of practice experience. The director of experiential education coordinates both introductory pharmacy practice experience (IPPE) and advanced pharmacy practice experience (APPE).

### Introductory pharmacy practice experience (IPPE)

The goals of the introductory pharmacy practice experience are to sharpen students' clinical skills through direct patient care activities in community, institutional, and ambulatory care settings; to introduce the student to different career opportunities in pharmacy; and to assist them in determining their career choices. Under the tutelage of a School of Pharmacy preceptor, who is also a licensed pharmacist, the student will be provided opportunities to apply didactic knowledge to patient care in community, institutional, and ambulatory care settings early on. These experiences will enhance communication, problem-solving, critical-thinking, and decision-making skills through direct patient care activities.

### Advanced pharmacy practice experience (APPE)

Students are required to complete a total of six advanced pharmacy practice experiences in specific clinical areas. Four experiences (each lasting six weeks) will be in required fields of hospital practice, ambulatory care, internal medicine, and clinical community practice. Two experiences will be in elective fields (see curriculum section).

### Prerequisites for advanced pharmacy practice experiences

In order to progress to the advanced pharmacy practice experiences, a student must meet the following requirements:

- **Assessment examination:** Students must pass the PY3 end-of-year comprehensive assessment examination.
- **PY4 standing:** Students must achieve PY4 standing as defined by the School of Pharmacy. The Office of Student and Professional Affairs will notify the director of experiential education when students successfully complete all PY3 work.
- **Immunizations:** Students must safeguard themselves and be sure that all University-required immunizations are up to date. Students are responsible for keeping the records of their own immunizations accessible. For the protection of patients and the students themselves, it is highly recommended that students receive the influenza vaccine in October during their PY4 year. Some sites may require this immunization.
- **HIPAA certificate:** All students are required to complete HIPAA training and obtain a certificate of completion annually.
- **Tuberculosis screening:** Students must be screened and cleared for tuberculosis (complete a one- or two-step PPD test, depending on the practice site requirement) during summer of PY4. A chest X-ray may also be required. Students shall follow specific instructions provided by the Division of Experiential Education. A record of tuberculosis screening clearance must be on file in the office of the director of experiential education.
- **Background check:** Facilities require a background check of all personnel, including students who are placed on site for experiential education. Some institutions may require the student to sign a confidentiality agreement or disclosure statement. Background checks are required for entry into

the School of Pharmacy. Periodic review and update may be required during the program. Additionally, an updated background check is required prior to starting APPE.

- **Random drug screening:** Random drug screening may be required for some practice settings. This screening may be above and beyond school-mandated screening.
- **Intern license:** Students must hold a valid California pharmacist intern license throughout the advanced pharmacy practice experiences.
- **CPR/First aid:** Students must hold valid certification in both CPR and first aid. Effective dates must be current through PY4.
- **Student health card:** Students must carry the Loma Linda University student health insurance card with them at all times.
- **CV:** Students must present a copy of their professional CV to the site preceptor at each APPE location.

## Licensing

### Pharmacy intern license

All School of Pharmacy students must have a current California pharmacist intern license. Students begin the application process prior to the start of PY1. During the first-year orientation, applications for this license are completed, including a \$75 payment by check to the California Board of Pharmacy. The Office of Student Affairs submits these applications to the California Board of Pharmacy. All students involved in introductory pharmacy practice experiences (IPPE) and advanced pharmacy practice experiences (APPE) must hold a current pharmacy intern license. Information about the pharmacy intern license can be found on the Web site <[pharmacy.ca.gov/forms/intern\\_app\\_pkt.pdf](http://pharmacy.ca.gov/forms/intern_app_pkt.pdf)>.

It is the student's responsibility to keep his/her pharmacy intern license current and valid. The Board of Pharmacy must be notified of any address, student status, or name change. A photocopy of the student's valid pharmacy intern license must be on file in the school's Division of Experiential Education.

### Pharmacy intern hours

The California State Board of Pharmacy requires each student to accrue 1,500 hours of acceptable intern experience. The School of Pharmacy's advanced pharmacy practice experiences (APPE) will fulfill 600 of these hours. The remaining 900 hours must consist of experience in a pharmacy under the immediate, direct, and personal supervision of a pharmacist. This experience must be predominantly related to preparing, processing, and dispensing prescription products; compounding prescriptions; keeping records; and making reports required by California and federal regulations.

## Graduation requirements

A candidate for the degree of Doctor of Pharmacy at Loma Linda University shall meet all of the following requirements:

- Satisfaction of all requirements for admission.
- Satisfactory completion of *all* requirements of the curriculum, including—
  - specified attendance at chapel and forum;
  - the total number of credit units;
  - all specified didactic and experiential course work; and
  - all applicable qualifying and comprehensive assessment examinations successfully passed.

- A cumulative grade-point average of 2.3 or higher for the total degree program.
- Evidence of personal character that is in line with the mission of Loma Linda University School of Pharmacy.
- Evidence of good professional behavior through organizational activities, outreach involvement, and personal conduct.
- Discharge of all financial obligations to the University and the school.
- Completion of an exit interview with the University Office of Student Finance, the Financial Aid Office, and School of Pharmacy administration.

A student failing to meet any of these requirements may not graduate until such time as all requirements are met.

Students may not participate in commencement exercises until all course work has been satisfactorily completed. Students with a maximum of one APPE to complete after the commencement date will be allowed to participate in commencement exercises. Receipt of the degree and certification of completion will occur only when all course work is completed satisfactorily and degree requirements are met.

## Financial Information

The Office of the Dean is the final authority on all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy in regard to reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs in regard to these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees on the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### GENERAL FINANCIAL PRACTICES

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Previous accounts with other schools or with this University must have been settled.

#### Deposits

Upon notification of acceptance, the applicant must deposit \$500 to hold a place in the class. This amount is deducted from the tuition and fees due at registration and is nonrefundable should an applicant decide not to register.

**Foreign student deposit:** Students who are not U.S. citizens or permanent residents entering Loma Linda University School of Pharmacy must deposit funds in the amount of the first full year of tuition. This deposit will be applied to the student's account for education costs during their last term of enrollment. A foreign student's deposit will be refunded if a student visa is not obtained.

### SCHEDULE OF CHARGES

The charges that follow are subject to change without notice.

#### Tuition

\$37,980	Annual block tuition
\$12,660	Per quarter

#### Fees

\$644	Per quarter, University enrollment fee: health care insurance, Drayson Center membership, student activities, and publications
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#### Miscellaneous

\$75	Application fee
\$500	Acceptance deposit: nonrefundable, applicable to first quarter's tuition
\$500	Per quarter, estimated books and supplies
\$25	Returned check processing fee
\$50	Late fee

#### Other charges

\$90	California Board of Pharmacy internship license (application, examination, interim practice permit); plus Live Scan fingerprinting fee (cost varies).
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**ON- AND OFF-CAMPUS STUDENT HOUSING**

Students may go to <[llu.edu/central/housing](http://llu.edu/central/housing)> for housing information and a housing application form.

**ADDITIONAL REQUIREMENTS**

For additional policies governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

## Pharmacy—SP

Pharm.D.

W. WILLIAM HUGHES, Ph.D., Dean

### FACULTY

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 Linda M. Williams  
 Sean Wilson  
 Siu-Fun Wong  
 Fong K. Yau

The curriculum at Loma Linda University School of Pharmacy is dynamic. This is due partly to the changing nature of the profession and partly to the newness of the program. The School reserves the right to change the curriculum after due deliberation of the Curriculum Committee and the Executive Committee. Students will be notified of all changes.

**First Year, Autumn Quarter**

Units

RELT 706	Adventist Beliefs and Life	2.0
RXPC 561	Pharmaceutical Care I	4.0
RXPS 511	Pharmaceutics I	3.0
RXPS 524	Physiology I	3.0
RXPS 581	Biochemistry I	3.0
RXRX 501	School of Pharmacy Forum	—
RXRX 507	Professional Development	—
RXSA 545	Public Health and Lifestyles	3.0
Totals		18.0

**Winter Quarter**

Units

RXEE 562	Pharmacist Guided Self-Care 1	3.0
RXEE 591	Introduction to Community Pharmacy Practice I	2.0
RXPS 512	Pharmaceutics II	4.0
RXPS 515	Pharmaceutics Laboratory I	0.5
RXPS 525	Physiology II	3.0
RXPS 582	Biochemistry II	3.0
RXRX 501	School of Pharmacy Forum	—
RXRX 507	Professional Development	—
RXSA 547	Pharmacy Law	3.0
Totals		18.5

<b>Spring Quarter</b>		Units
RELE 705	Ethics in Pharmacy Practice	3.0
RELT 740	World Religions and Human Health	3.0
RXEE 563	Pharmacist Guided Self-Care 2	3.0
RXEE 592	Introduction to Community Pharmacy Practice II	2.0
RXPS 513	Pharmaceutics III	3.0
RXPS 516	Pharmaceutics Laboratory II	0.5
RRRX 501	School of Pharmacy Forum	—
RRRX 507	Professional Development	—
RXTH 670	IPDM I: Principles of Pharmacology	2.0
Totals		16.5

<b>Second Year, Autumn Quarter</b>		Units
RXPS 610	Pharmacokinetics	4.0
RXPS 651	Principles of Medicinal Chemistry I	3.0
RRRX 601	School of Pharmacy Forum	—
RRRX 604	Professional Development	—
RXSA 640	Epidemiology and Biostatistics	3.0
RXSA 646	Principles of Management	3.0
RXTH 671	IPDM II: Fluids and Electrolytes	2.5
Totals		15.5

<b>Winter Quarter</b>		Units
RXDI 664	Drug Information and Literature Evaluation	3.0
RXPS 652	Principles of Medicinal Chemistry II	4.0
RRRX 601	School of Pharmacy Forum	—
RRRX 604	Professional Development	—
RXTH 683	IPDM IV: Endocrine	3.5
RXTH 684	IPDM III: Cardiovascular I	3.5
Totals		14.0

<b>Spring Quarter</b>		Units
RELR 709	Christian Perspectives on Death and Dying	2.0
RXPS 653	Principles of Medicinal Chemistry III	3.0
RRRX 601	School of Pharmacy Forum	—
RRRX 604	Professional Development	—
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3.0
RXTH 674	IPDM VI: Renal and Respiratory Diseases	3.5
RXTH 685	IPDM V: Cardiovascular II	3.5
Totals		15.0

<b>To be taken either Autumn, Winter, or Spring quarter of the second year</b>		Units
RXEE 690	Introduction to Hospital Pharmacy Practice	2.0
Totals		2.0

**Third Year, Autumn Quarter**

Units

RELE 706	Advanced Ethics in Pharmacy Practice	2.0
RXPC 761	Pharmaceutical Care Laboratory I	4.0
RXRX 701	School of Pharmacy Forum	—
RXRX 704	Professional Development	—
RXTH 770	IPDM VII: Infectious Diseases I	3.5
RXTH 773	IPDM VIII: Psychiatry	4.5
Totals		14.0

**Winter Quarter**

Units

RXPC 760	Clinical Pharmacokinetics	2.0
RXPC 762	Pharmaceutical Care Laboratory II	3.0
RXRX 701	School of Pharmacy Forum	—
RXRX 704	Professional Development	—
RXTH 771	IPDM X: Neurology	3.5
RXTH 772	IPDM IX: Infectious Diseases II	4.5
Totals		13.0

**Spring Quarter**

Units

RXPC 763	Pharmaceutical Care Laboratory III	4.0
RXRX 701	School of Pharmacy Forum	—
RXRX 704	Professional Development	—
RXSA 743	Health Systems, Reimbursement, and Pharmacoeconomics	3.0
RXTH 774	IPDM XII: Miscellaneous Conditions and GI Disorders	3.5
RXTH 775	IPDM XI: Oncology/Transplant	2.5
Totals		13.0

**To be taken either Autumn, Winter, or Spring quarter of the third year**

Units

RXEE 790	Introduction to Clinical Pharmacy Practice	2.0
Totals		2.0

**Fourth Year**

Six 6-unit rotations required (1—Summer, 2—Autumn, 2—Winter, 1—Spring)

Units

RXEE 806	Advanced Clinical Community Practice (6)	Choose two elective rotations from this list	12.0
RXEE 807	Academia and Research (6)		
RXEE 808	Clinical Outcomes and Pharmacy Practice Research (6)		
RXEE 809	Clinical Simulation (6)		
RXEE 810	Research/Psychiatry (6)		
RXEE 811	Anticoagulation (6)		
RXEE 812	Medication Therapy Management (6)		
RXEE 813	Mission Service (6)		
RXEE 814	Medication Safety (6)		
RXEE 860	Dermatology (6)		

RXEE 861	Gastroenterology/Hepatology (6)		
RXEE 862	Health Policy (6)		
RXEE 863	Investigational Drugs (6)		
RXEE 864	Ophthalmology (6)		
RXEE 865	State/National Pharmacy Associations (6)		
RXEE 868	Drug Information (6)		
RXEE 869	Academia (6)		
RXEE 871	Cardiology (6)		
RXEE 872	Research (6)		
RXEE 873	Long Term Care (6)		
RXEE 874	Infectious Disease (6)		
RXEE 875	Neurology (6)		
RXEE 876	Nuclear Pharmacy (6)		
RXEE 877	Nutrition (6)		
RXEE 878	Oncology (6)		
RXEE 879	Obstetrics/Gynecology (6)		
RXEE 880	Pharmacokinetics (6)		
RXEE 881	Pharmaceutical Industry (6)		
RXEE 882	Pain Management (6)		
RXEE 883	Managed Care (6)		
RXEE 884	Pediatric Transplant (6)		
RXEE 885	Pediatrics/Neonatology (6)		
RXEE 886	Home Health Care (6)		
RXEE 887	Geriatrics (6)		
RXEE 888	Compounding (6)		
RXEE 889	Specialty Independent (6)		
RXEE 890	Psychiatry (6)		
RXEE 891	Emergency Medicine and Trauma (6)		
RXEE 892	Pharmacoeconomics and Outcomes Research (6)		
RXEE 893	Pharmacy Systems/Technology (6)		
RXEE 894	Transplant (6)		
RXEE 895	Critical Care (6)		
RXEE 896	Poison Control and Toxicology (6)		
RXEE 897	Public Health Service (6)		
RXEE 898	Nephrology (6)		
RXEE 856	Medicine (6)	Required	24.0
RXEE 857	Hospital Practice (6)		
RXEE 858	Ambulatory Care (6)		
RXEE 859	Clinical Community (6)		
RXRX 890	Introduction to Advanced Pharmacy Practice Experiences (3)		
RXRX 899	Reconnections (3)		
		Totals	36.0
		<b>Overall Totals</b>	<b>177.5</b>

# School of Public Health

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## DOCTOR OF PUBLIC HEALTH

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Health Geoinformatics

Lifestyle Intervention

Maternal and Child Health

Tobacco Control Research

Methods

## Dean's Welcome

We are living in exciting and challenging times for public health. The increase in diseases directly related to lifestyle choices, the reappearance of infectious diseases that science believed were under control, the widening gap between those who have and those who don't and its impact on their life and health are all examples of public health issues that demand our attention. And yet, they are not necessarily the most important. Why do bad things happen to good people? At the end of the day, what does any of this really matter? Am I important, of value to God or to other human beings? These questions are at the core of our existence and the answer to them can make the difference in someone's life, health, and future.



This is the reason that Loma Linda University School of Public Health exists as one of the CEPH-accredited schools. We are a community that cares about public health issues. We value wholeness and the importance of healthy lifestyle decisions—offering the only M.P.H. degree program in lifestyle medicine and a thriving nutrition department. We are serious about creating and advancing knowledge as our faculty members and students engage in research that spans epidemiological studies and community-based participatory enterprises; and we care about people—not just as populations, but also as individuals—and about their access to comprehensive health care. We care about the environment we live in and the policies that are developed to empower people to make the right choices. We care about working with individuals and communities as we all strive to effectively connect what we know with how we live.

The School of Public Health is special because it is part of an educational and health care system that can be found in the whole world—from the most remote village to the most advanced metropolis; and our faculty members prepare our students to practice public health in such a world.

However, the reason we exist as a school goes beyond all that has been mentioned. We are here because we want to explore the other questions with you. When you leave this institution, our prayer is that you will deepen your relationship with a God who loves you, who values you as an individual, who has a mission for your life, and to whom you matter. We hope that you get a chance to meet Him in the classrooms, down the hallways, in devotional events and spiritual retreats, and especially in the faces of those we will serve together.

Welcome to the School of Public Health. As you browse through these pages, we encourage you to become acquainted with the many ways you can arrive at your professional destination—a degree in public health that will enable you to serve, contributing to healthy lifestyles in a global community from a faith-based perspective.

A handwritten signature in black ink, appearing to read 'Tricia Penniecook', written in a cursive style.

Tricia Penniecook, M.D., M.P.H.  
Dean, School of Public Health

## **Mission, Vision, Values, and Goals**

### **MISSION**

The mission of the School of Public Health is to bring hope, health, and healing to communities throughout the world through the discovery and dissemination of knowledge while integrating the Christian values of the Seventh-day Adventist Church.

### **VISION**

Preparing ourselves and others to maximize personal and community wellness through excellent faith-based public health education and practice.

### **VALUES**

Diversity—to humbly learn from all people while embracing and celebrating their healthy beliefs and practices.

Wholeness—to support the process of integrating spirituality with physical, social, emotional, intellectual, and character development.

Engagement—to be active contributors and participants in our profession as educators and learners, respectively.

### **GOALS**

1. Constantly improve the quality of instruction in support of exceptional educational value.
2. Develop reciprocal and sustainable community-academic partnerships that lead to research, practice, and teaching that are responsive to societal needs.
3. Enhance the school's visibility in support of efforts to maximize enrollment.
4. Enhance the school's visibility in public health issues.
5. Enhance the school's operating resources through increased external (nontuition) sources.
6. Strengthen infrastructure supporting excellence in grant writing.
7. Recruit and retain a student body that reflects the diversity of the population served.

# School Foundations

## HISTORY

The school's foundation was laid in 1948 with the organization of the School of Tropical and Preventive Medicine, the purpose of which was to provide a base for research and teaching. In 1964, plans were laid for faculty and facilities to meet the requirements of the Committee on Professional Education of the American Public Health Association (APHA). Three years later, the School of Nutrition and Dietetics (established in 1922) and the Division of Public Health and Tropical Medicine were accredited by APHA and organized under the name Loma Linda University School of Public Health. This name was changed to School of Health in October 1970 to reflect more clearly the school's emphasis on lifestyle. In response to changing societal perceptions and definitions of "public health," the original name, School of Public Health, was readopted in August 1987. The Center for Health Promotion, the Department of Preventive Medicine, and the Preventive Medicine Group were merged into the School of Public Health in 1990. The expanded resources realized by this merger stimulated further growth and development of the school to provide a dynamic learning and research environment for its students and faculty.

## ACCREDITATION

The school has maintained continuous accreditation since it was accredited at its inception in 1967 by the American Public Health Association. It is currently accredited by the Council on Education for Public Health, 800 Eye Street NW, Suite 202, Washington, DC 20001-3710. The school is also a member of the Association of Schools of Public Health.

## **General Regulations**

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III of this CATALOG provides the general setting for the programs of each school and outlines the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

### **UNIVERSITY EMAIL ACCOUNTS**

The University accepts its moral, ethical, and legal responsibility for informing and reminding students of deadlines, regulations, and processes by issuing an email account to every student and communicating with students by email. It is the students' responsibility to read and respond to their email messages from the University.

# Learning Environment

## TECHNOLOGY FACILITIES

Technology-mediated and fully online courses are part of the school's curricula. Students should be prepared to use email, electronic library resources, online survey tools, course management tools, and other Internet communication tools while engaged in the School of Public Health learning environment. Through the online M.P.H. and technology-mediated Dr.P.H. degree programs, the School of Public Health demonstrates its commitment to moving forward with a technology-supported and technology-facilitated learning environment.

Tutorials are available to assist members of this learning community in using the school's various tools.

## CAMPUS FACILITIES

Facilities for the School of Public Health—offices, lecture and seminar rooms, teaching and research laboratories, work and storage areas—are located mainly in and adjacent to Francis Nichol Hall. Additional offices and research facilities are located in Evans Hall, the Parkland Building, and the Centennial Complex.

## DEPARTMENTS AND CENTERS

The instructional, research, and service programs within the school are organized and administered by six academic departments and three centers.

### The departments

The departments of the School of Public Health are as follows: Environmental and Occupational Health, Epidemiology and Biostatistics, Global Health, Health Policy and Management, Health Promotion and Education, and Nutrition.

### Department of Environmental and Occupational Health

The protection of the human environment from natural and man-made hazardous conditions is a major issue of growing concern that affects the health and welfare of people throughout the world. Environmental and occupational health professionals strive to promote health and quality of life by preventing and reducing illness, disability, and death from interactions between people and their environment over their entire life span. The science and practice of environmental health currently covers many new responsibilities—such as responding to emergencies, educating and training various audiences, and developing new standards and guidelines; or helping formulate public policy. The emergence of new issues and threats—such as food security or natural, technological, humanitarian, and terrorism-related environmental emergencies—establishes the need for an educated and well-prepared environmental and occupational health workforce. As environmental health professionals must be able to anticipate, recognize, and respond to traditional as well as emerging challenges, they also need to stay current on all of the latest information and technology tools available.

Environmental health practitioners are diverse in background, education, and function. Therefore, the department stresses an interdisciplinary approach to instruction and continually seeks to train individuals with a broad range of backgrounds, value systems, and perceptions of the world. The Environmental and Occupational Health Program provides a California state-approved professional program that leads to the Master of Public Health (M.P.H) degree in environmental and occupational health. In addition, certain individuals are offered the opportunity to obtain an M.P.H degree that is not designed to meet the eligibility certification requirements. The Department of Environmental and

Occupational Health also makes available to students interdisciplinary options that integrate epidemiologic research skills or modern geospatial information technology tools into the standard M.P.H degree program. The department also partners with the U.S. Peace Corps to offer a dual degree, the M.P.H./Master's International Program (M.P.H./M.I.P).

### *Goals*

The Department of Environmental and Occupational Health endeavors to prepare distinguished environmental health professionals to serve local, national, and international communities; and to train graduates who will demonstrate the following standards of excellence:

- Conduct themselves in a professional and ethical manner.
- Commit to public health protection and environmental justice.
- Serve communities as qualified, successful environmental health practitioners.
- Be prepared to enter into advanced or doctoral degree programs.

### *Programs*

The Department offers the following curricula:

1. Master of Public Health
  - a. Environmental and occupational health specialist
  - b. Environmental epidemiology
2. Certificate
  - a. Health geoinformatics

### *Outcomes*

The competency-based curriculum is built upon themes of environmental quality, stewardship, and sustainability; and on a vocation for social justice. By the end of the program, graduates will be able to:

1. Understand the causes, mechanisms, and consequences of environmental and occupational hazards.
2. Assess environmental conditions that present actual or potential health hazards to employees and the general public; and recommend sustainable and cost-effective, practical mitigation techniques and monitoring strategies.
3. Manage environmental health programs and professionals.
4. Conduct applied policy and technical research that expands the existing knowledge base in the field of environmental and occupational health sciences, both in the United States and international communities.
5. Provide environmental and occupational health-related consultation to local and national governments, international agencies, nongovernmental organizations, industry, private associations, labor organizations, and academic institutions.
6. Advocate for environmental justice and equity on behalf of vulnerable and disadvantaged subgroups of the population

7. Meet the eligibility requirements to sit for the registered environmental health specialist (REHS) examination.

### ***Vision Statement***

Inspired by a high calling to environmental stewardship and justice, the vision of the Department of Environmental and Occupational Health is to prepare health professionals who, by helping to improve the environment, can also help ensure not only better health for individuals, but also healthier communities.

## **Department of Epidemiology and Biostatistics**

### ***Description***

Although the science of epidemiology began with the investigation of the infectious disease outbreaks, epidemiologists today consider the modern plagues of heart disease, cancer, stroke, and injuries to be a part of this relatively young discipline. Contemporary epidemiology builds upon the premise that disease or health is not randomly distributed within populations. Epidemiologists, therefore, apply a collection of investigative research methods that permeate all fields of public health in order to identify and isolate the underlying causes of disease and injury, as well as health. The emphasis placed upon the investigative process has inspired some to describe the epidemiologist as a medical detective.

The diversity of this investigative science is illustrated by a number of research accomplishments ranging from identification of control and preventive measures for AIDS and diabetes mellitus to etiologic processes important in the development of malignant neoplasms, cardiovascular diseases, and infectious diseases. Other accomplishments of epidemiology include discovery of social and biological mechanisms involved in the spread of measles, AIDS, and pertussis through human populations; and preventive measures for surgical wound and other hospital-acquired infections.

Contemporary epidemiologic inquiry ranges from investigation of the roles of prescription medications, nutrition, electromagnetic fields, and pesticides in human cancer; to identification of health benefits of cholesterol reduction, smoking cessation, and use of safety bindings on skis.

The efficacy and confirmed success of epidemiology guarantee an exciting future for those who meet the challenges of this advancing science.

### ***Goals***

The Department of Epidemiology and Biostatistics:

1. Trains students to become professionals in epidemiology and biostatistics.
2. Fosters a spirit of collaboration between students and faculty by including students in research projects and as teaching assistants.
3. Provides practical research experience—including presentation of data—through field practice in a public health department or other agency or on one of the research projects within the University.
4. Conducts high-quality research, collaborates on research projects within the school and the University, and develops research collaboration with other academic and research communities.
5. Provides consultation services regarding research design; and analyzes and interprets results to other groups within the University, the community, and outside agencies.

### *Programs*

The Department of Epidemiology and Biostatistics offers the following degrees:

- M.P.H. (biostatistics)
- M.P.H. (epidemiology, with concentrations in medical epidemiology, research epidemiology, environmental epidemiology, spatial epidemiology, health services research, nutritional epidemiology, and global epidemiology)
- M.P.H. (public health practice)
- M.S.P.H. (biostatistics)
- Dr.P.H. (epidemiology)
- Ph.D. (epidemiology)

The department also offers three certificate programs: biostatistics, epidemiology, and epidemiologic research methods.

### *Outcomes*

- Critically review the epidemiologic literature and identify strengths and weaknesses of design, analyses, and conclusions
- Participate in disease surveillance as practiced in state and county health departments
- Apply knowledge of disease mechanisms and information from the biological disciplines to the interpretation of statistical findings in biomedical research
- Collaborate with health professionals by providing technical expertise with regard to literature review, study design, data analysis, and interpretation and reporting of results

### *Vision statement*

The mission of the Department of Epidemiology and Biostatistics is to prepare professionals to serve local, national, and international communities as researchers and consultants qualified to provide an understanding of environmental, genetic, and social characteristics important in disease development and spread; as well as professionals qualified to select and apply appropriate statistical theories, strategies, and techniques to the solution of research problems.

## **Department of Global Health**

### *Description*

Recent advances in science, technology, and communications have created a rapidly shrinking planet—a veritable global, interconnected village—with unique opportunities and unparalleled challenges in health and development. Current global trends highlight increasingly ominous problems—escalating threats of conflict, violence and disasters, chronic and infectious disease (old and emerging), deteriorating maternal, perinatal, and child health indices, endemic poverty, political instability, social injustice and human rights violations, uncontrolled urbanization, environmental hazards and a fragile ecosystem, societal disintegration, and widespread substance abuse—all of which combine to amplify the stark inequities and shocking disparities in health and development that exist around the world.

On the other hand, remarkable progress is being made through multisectoral efforts directed toward preventing disease, disability, and death; promoting health, safety and wellbeing; improving education

and socioeconomic status, and ensuring improved standards of living. The availability of and access to simple, cost-effective, appropriate strategies is further reinforced by a heightened awareness of the underlying complex array of determinants, forces, processes, and systems (social, political, economic, epidemiological, religious, and cultural) that dynamically interact to impact health and development.

The Department of Global Health (GLBH) prepares committed professionals who are both technically competent and cross-culturally skilled in creating and facilitating sustainable health and development programs in diverse settings and populations. Utilizing an experiential, evidence-based model of learning, the department's program enables graduates to contribute towards a better quality of life for all people, and especially those who are vulnerable, underserved, marginalized, and disadvantaged. The department's extensive network of global and local resources affords a broad spectrum of options for students to learn and practice the "art and science" of this exciting discipline.

The department prepares career professionals who qualify for entry-level positions in nongovernmental organizations; faith-based and other voluntary agencies; community-based organizations; county, state, and national health departments; private foundations; public health practice organizations; and in the nonprofit relief and development sector. Graduates also find positions in government and transnational organizations such as the World Health Organization, UNICEF, the World Bank, Centers for Disease Control and Prevention, and national assistance organizations like the United States Agency for International Development. Further academic training is also an option for graduates interested in teaching and research. Graduates with field experience (including students who add the M.P.H. degree in global health to a previous clinical or academic degree) will qualify for managerial positions in program planning and evaluation, contracting, technical assistance, grant writing, and advocacy.

### ***Department goal***

The goal of the Department of Global Health is rooted in the Christian values of love for and service to humanity, and stewardship of the earth's resources. The department aims to educate competent, ethical, and compassionate individuals who engage communities—especially the poor and underserved—to help them achieve an optimal level of health and development.

### ***Programs***

The curricula of the Department of Global Health include the M.P.H. degree in global health, with specializations in global epidemiology and global maternal and child health, the Dr.P.H. degree in global health (currently closed for enrollment), the certificate in emergency preparedness and response, and the certificate in tobacco control research methods.

### ***Outcomes***

Utilizing an experiential approach, the competency-based curriculum is built around three themes: (1) developing and maintaining a sustainable healthy environment; (2) supporting and empowering communities, families, and individuals; and (3) advocating for social justice, human rights, and equity among vulnerable populations. Graduates are also expected to apply cross-cultural skills and demonstrate technical competence in assessing systems, needs, and resources; in planning, managing, and evaluating comprehensive, integrated health and development programs; and in facilitating and promoting multidisciplinary, intersectoral collaborations within and between countries and regions.

***Vision statement***

The vision of the Department of Global Health is to establish excellence in education, research, and service in global public health; and to facilitate partnerships that allow marginalized communities to achieve optimal health and development.

**Department of Health Policy and Management*****Description***

The Department of Health Policy and Management prepares students with new skills to be more effective leaders. Instruction includes problem-based scenarios, case studies, models, projects, laboratories, field work, and presentations. A network of alumni and health care professionals provides a broad spectrum of options for students to learn and apply the knowledge obtained.

***Department goal***

The goal of the Department of Health Policy and Management is to equip graduates with leadership skills and management competencies that will enable them to effectively function in a rapidly evolving health care environment. Graduates receive a broad interdisciplinary education that encourages critical thinking and the application of systems thinking to the solution of the current challenges confronting health care. This program will provide students with a stronger understanding of health policy that will prepare them to influence change in national and global environments.

***Programs***

The programs of the Department of Health Policy and Management include the M.B.A. degree in health care administration, the M.P.H. degree in health policy and leadership, and the Dr.P.H. degree in health policy and leadership.

***Outcomes***

The competency-based curriculum is designed to develop and strengthen the skills of health professionals who are able to think critically, apply systems thinking, and demonstrate leadership in health policy and administration.

***Vision statement***

The vision of the Department of Health Policy and Management is to train future health care professionals with competence in health policy, management, and leadership.

**Department of Health Promotion and Education*****Description***

The Department of Health Promotion and Education emphasizes educational, interpersonal, community, preventive, and legislative factors that promote positive health behaviors. Health promotion also emphasizes community and an in-depth understanding of today's health issues and prevention of negative health behaviors and outcomes. Course work may be pursued in the traditional on-campus classroom format or fully online.

Health promotion and education students receive excellent preparation for the certified health education specialist (CHES) examination. Loma Linda University School of Public Health is among the top ten schools of public health whose students take and pass the CHES examination.

Graduates may function as community health educators in a variety of settings, both public and private. They are academically prepared to conduct community assessments; design, implement, and evaluate health education interventions; organize health promotion efforts; be involved in research; and assist individuals and communities to better utilize techniques of health behavior change.

Students select course work from each of several practice and content areas to enhance the applied portion of the curriculum. Professional practice is addressed during the laboratory and field experience portions of the curriculum. Students may develop skills while working in community agencies and in medical care, school, and work/site settings.

### *Department goals*

The goals of the Department of Health Promotion and Education are to:

- Promote the academic preparation of public health professionals.
- Provide course work for students desiring credentials in selected areas.
- Provide health education consultation services in needs assessment, community organization program planning and implementation, health counseling, evaluation, and research to public and private health agencies—including the Seventh-day Adventist Church.
- Independently or in collaboration with other faculty, departments, and organizations develop and conduct research that addresses health education, health behavior, and disease prevention issues and needs.

### *Programs*

The Department of Health Promotion and Education offers the following curricula: the M.P.H. degree in health education (on campus and online), maternal/child health, and lifestyle medicine; the Dr.P.H. degree in health education and in preventive care; and two certificate programs: lifestyle intervention (currently closed) and maternal and child health. One combined degree program is offered by the department: the Dr.P.H. degree in preventive care and the Psy.D. degree in psychology.

### *Outcomes*

Graduates of the curricula in the Department of Health Promotion and Education will have the skills necessary to:

1. Assess individual and community needs and plan effective health education programs.
2. Collaborate with other professionals in using resources to educate the public about health.
3. Evaluate and appropriately apply public health research findings to the practice of health education.
4. Provide leadership or technical assistance for public health projects in selected settings.
5. Meet didactic and professional practice requirements for certification as health education specialists.

### *Department vision*

Helping students succeed

Promoting positive behaviors

Research par excellence

Outreach to communities

The Department of Health Promotion and Education seeks to:

- Ensure that all students come to a nurturing, learning environment; achieve excellence in their educational, lifestyle, and professional pursuits; and leave with a rich heritage upon which to build.
- Reflect and model the principles of health to one another and to the students.
- Reach out to communities globally for community connectedness.
- Use the resource of technology to provide education, including continuing education.
- Value fiscal integrity and accountability of programs.

## **Department of Nutrition**

### *Description*

The Department of Nutrition at Loma Linda University's School of Public Health, offers curricula leading to the Master of Public Health (M.P.H.) and the Doctor of Public Health (Dr.P.H.) degrees. The department also offers the Master of Science (M.S.) degree in nutrition through the Faculty of Graduate Studies in the areas of nutritional science and clinical nutrition. Students have the opportunity to concurrently complete a graduate degree and establish eligibility to sit for the registration examinations for registered dietitians (RDs).

The department prepares public health nutritionists who can combine knowledge of nutrition science with competencies in education, behavioral science, management, and public policy to enhance the nutrition status of individuals, groups, and populations. Public health nutritionists use the science of nutrition and related disciplines to identify and solve nutrition-related health problems.

The Department of Nutrition at Loma Linda University is distinguished by the variety of options students can pursue. Through a combination of academics, research, and service, they can tailor a university experience that fits their interests and furthers their professional goals. In addition to course work, the Department of Nutrition offers a wide spectrum of opportunities—from participation in research, including laboratory experience, to nutritional epidemiology. The department routinely conducts clinical trials and feeding studies that can provide project management, laboratory, and data analysis experiences for those students who are interested. Loma Linda University nutrition programs are "coordinated," meaning the classroom curriculum is enhanced with clinical applications and experiences in local medical facilities. Undergirding all educational experiences is a vegetarian approach to nutrition. The department organizes the International Congress on Vegetarian Nutrition every five years.

### *Department goals*

The Department of Nutrition will:

- Train competent public health nutritionists who will serve as leaders in their field.
- Contribute to the body of nutrition knowledge through active research, emphasizing issues related to vegetarian nutrition, plant-based diets, prevention of disease, and promotion of health.
- Serve as a resource for the Seventh-day Adventist Church and others, with special attention to vegetarian nutrition.
- Collaborate with local associations in various activities for improvement of the nutritional status of the community.

- Provide opportunity within a graduate program to meet the didactic and professional practice requirements for registration by the Commission on Dietetic Registration of the American Dietetic Association.

### *Programs*

- M.P.H. (public health nutrition)
- M.P.H. (public health nutrition and dietetics)
- M.P.H. (nutritional epidemiology)
- Master's International Peace Corps Program
- M.S. (nutrition)
- Dr.P.H. (nutrition)

### *Outcomes*

- Professionals trained in public health nutrition
- Scientific communications and publications
- Educational tools and resources for the vegetarian community
- Community partnerships established and maintained
- Acceptable pass rate on the registration examination for the RD

### *Vision statement*

The vision of the Department of Nutrition is to inspire leaders toward plant-based, health-promoting, sustainable diets for all.

### **The centers**

The School of Public Health includes three centers—Center for Health Promotion, Center for Health Research, and Computer Center—and the Health Geoinformatics Resource Laboratory.

#### **Center for Health Promotion**

The Center for Health Promotion (CHP) is a health promotion and maintenance facility within the Adventist Health System/Loma Linda. It offers a wide spectrum of programs dealing with weight management, executive health, stress management, smoking cessation, nutrition, exercise, and alcohol and drug dependency. Group sessions, individual counseling, and health assessment are some of the aspects of the programs conducted in the community or in a corporate setting. The CHP is a major training center for students.

#### **Center for Health Research**

The Center for Health Research (CHR) encourages involvement in research by identifying research opportunities and providing support in developing grant applications. It provides research and statistical services, monitors financial status of grants and research endowments, and provides focus for the research activities of the school by identifying research priorities.

The research efforts of the school are consistent with its overall philosophy: protection, promotion, and preservation of human health through the harmonious development of one's mental, physical, and spiritual resources. It is the school's policy to encourage pursuit of research activities that are especially relevant to its mission and that utilize the natural abilities, special interests, and professional expertise of

its faculty members. School of Public Health researchers concentrate on projects that examine the effects on health of various aspects of lifestyle—including personal and cultural habits, as well as issues of health disparities. Of special importance is research directed toward those aspects of disease prevention in which health may be related to individual choices of life habits and lifestyle. The school makes special efforts to encourage research projects that are most likely to enrich the instructional programs. In developing research projects, faculty members carefully consider how to encourage student involvement. The goal is to bring mutual benefit to the students' academic development and to the purposes of research. A wide variety of research methodologies are employed. These provide students with valuable experience through exposure to a broad spectrum of the techniques of scientific investigation. Substantive research findings are incorporated regularly into the teaching program.

**Computer Center**

The Computer Center maintains two computer laboratories (PC platform) for general and class-specific use. The laboratories, as well as all classroom and public areas of the school, provide wireless Internet access. The center assists students in utilizing a variety of software programs, including current office productivity applications and specialized software used in conjunction with course work in statistics, nutrition, and GIS. The center manages student email, wireless, and online service accounts.

**Health Geoinformatics Resource Laboratory**

The Health Geoinformatics Resource Laboratory, located in the Centennial Complex, provides students, faculty, and staff easy access to extensive geotechnology resources. The spacious facility is equipped with high-end computers and other peripherals—such as plotters, GPS devices, printers, a scanner, and more. The laboratory manages the ESRI GIS software site license and maintains remote sensing (satellite imagery), database management systems, and other state-of-the-art spatial, analytic, and visualization software packages. In addition, the laboratory maintains substantial spatial data—including demographic, population, satellite images, and aerial photographs. The laboratory also supports all the health geoinformatics educational and training needs, as well as various research and practice activities for new insights and innovative solutions to health problems. For more information, visit <[llugis.org](http://llugis.org)>.

## Application and Admissions

The programs admissions committees of the University assure that an applicant to any of the schools is qualified for the proposed curriculum and is capable of profiting from the educational experience offered by this University. The department of the program in which study is desired accomplishes this by examining evidence of scholastic competence, moral and ethical standards, and significant qualities of character and personality. The school's Admission Committee ratifies the department faculty's decision.

### COMPUTER LITERACY

Computer literacy is a prerequisite for some courses. Students are strongly encouraged to develop their computer skills and literacy prior to coming to the school.

### GRADUATE DEGREE PROGRAMS—M.B.A., M.P.H., M.S.P.H., M.S.

#### Admissions requirements

Since specific requirements vary from program to program, these should be determined from the area of interest.

#### Eligibility

To be eligible for admission to a master's degree curriculum, applicants must have at least a baccalaureate degree from an accredited institution, with a G.P.A. of 3.0 or above, and present scores of the Graduate Record Examination (GRE) or equivalent (taken within the last five years). A limited number of students whose background and experience show potential for success but whose G.P.A. is less than 3.0 are admitted on a provisional basis.

A minimum grade of B (3.0) is required for all college transfer courses.

#### Prerequisite courses

A grade of C or higher is required for all prerequisite courses. Prerequisites must be completed prior to matriculation.

#### Entrance tests

Scores from the Graduate Record Examination (GRE) or equivalent (including PRAXIS) are required with the application. Application forms for the GRE and information regarding examination times and places are furnished by the Educational Testing Service, 1600 K Street, Suite 4A Sacramento, CA 95814 (for the west), and Rosedale Road Princeton, NJ 08541 (for the east). Applicants for the M.B.A. degree program in health administration are required to submit scores from the Graduate Management Admission Test (GMAT) or equivalent, such as the GRE. Application forms for the GMAT and information regarding examination times and places are furnished by Educational Testing Service, 1600 K Street, Suite 4A Sacramento, CA 95814 (for the west), and Rosedale Road Princeton, NJ 08541 (for the east). The applicant may also contact a local community college for testing information or access it online at <ets.org>.

## DOCTOR OF PUBLIC HEALTH AND DOCTOR OF PHILOSOPHY

### **Eligibility**

To be eligible for admission to the Doctor of Public Health or Doctor of Philosophy degree programs, an applicant must demonstrate high academic performance both in baccalaureate and postbaccalaureate studies, and present scores for the Graduate Record Examination (GRE) or equivalent (taken within the last five years). For specific admissions requirements, refer to the Doctor of Public Health or Doctor of Philosophy degree programs described later in this section.

A minimum grade of B (3.0) is required for all University transfer courses.

### **Prerequisites**

A grade of C or higher is required for all prerequisite courses. Prerequisites must be completed prior to matriculation.

## Academic Policies and General Regulations

Students are responsible for informing themselves of and satisfactorily complying with the policies and meeting the regulations pertinent to registration, matriculation, and graduation.

### ADVANCED STANDING

Graduate students with previous course work in areas of public health may apply for limited units of advanced standing. If approved by the program director or department chair and the associate dean for academic affairs of the school, degree requirements—exclusive of elective units—are reduced. Courses taken during the past five years are considered in an evaluation of the student's qualification for advanced standing. Competency in courses taken more than five years previously may be considered if the content has been used professionally on a regular basis. No advanced standing is granted for life experience that is not in conjunction with previous course work. Advanced standing is not granted for religion courses.

### RELIGION COURSE REQUIREMENT

Registration and completion of graduate-level religion coursework is mandatory for completion of degree requirements. The religion requirement is designed to provide a spiritual dimension to the professional training of public health students, to provide students with an opportunity to further develop their skills in dealing with life's challenges, and to provide opportunity for personal spiritual growth. Transfer of course units from other universities and institutions is not allowed; nor is a waiver option available, regardless of educational background. Traditional letter grading is required.

Selection of religion courses to fulfill requirements for the various degrees should be made in consultation with the advisor, using the course schedule published online at <llu.edu/central/ssweb>. Master's degree students are required to complete a 3-unit, 500-level religion course per degree sought; and doctoral students are required to complete three 500-level religion courses in each of the religion content areas: ethical, relational, and theological studies. Only courses with REL\_ code prefixes may be used to satisfy the religion course requirement. The religion requirement may not be waived by registering for a religion course at a university other than Loma Linda University.

### STUDENT CLASSIFICATION

Students enrolled in courses prior to receiving official acceptance into the School of Public Health are classified as "nondegree" students by the University. Students may retain this status only by permission of the director of admissions and academic records for a maximum of 12 units of credit before official acceptance into the school.

### SHARED UNITS

The maximum number of units that may be shared between a doctoral and a master's degree program within the University is 18 units. The maximum number of units that may be shared between two master's degree programs within the University is 18 units. The maximum number of units that may be shared between two doctoral programs within the University is 36 units. The maximum number of units that may be shared between a certificate and a master's or doctoral degree program is 9 units. Shared units between programs may not be automatically granted.

## CONVOCATION ATTENDANCE

Attendance at weekly University and quarterly school convocations is required. Unexcused absences are reported to the dean. Persistent failure to attend may jeopardize a student's regular standing.

## COURSE ATTENDANCE

Only duly registered students may attend classes. Students are expected to attend all required contact elements in a course. Absences in excess of 15 percent may be sufficient cause for a failing or unsatisfactory grade to be recorded.

## TIME LIMIT

The time lapse from first enrollment in courses applied to a master's degree curriculum to the conferring of the degree may not exceed five years. For a doctoral degree, the maximum time allowed for advancement to candidacy is five years, and seven years to completion of the degree program. Students who show evidence of appropriate academic progress may be granted up to two one-year extensions for master's and three one-year extensions for doctoral degrees. These extensions are not automatic but must be initiated by student request and be approved by the major department and the associate dean for academic affairs. Exceeding the time limit requirements may have financial aid implications.

## ACADEMIC PROBATION

Students whose cumulative G.P.A. at the end of any quarter is less than 3.0 for graduate students are placed on academic probation, and the number of units for subsequent registrations is restricted to a maximum of 12 graduate units per quarter. Students with two quarters of unsatisfactory performance jeopardize their standing in a degree or certificate program.

## RESIDENCY REQUIREMENTS

Residency requirements may be met by a student taking, through the School of Public Health, the minimum number of units specified for the appropriate degree.

The minimum didactic unit residency requirement for a single master's degree is 45 units (plus 11 units of transfer credit, or 56 units total) and for a single doctoral degree is 60 units (plus dissertation units).

## GRADUATION REQUIREMENTS

A candidate for a degree shall have met the following conditions:

Completed all requirements for admission.

Satisfactorily completed all requirements of the curriculum, including specified attendance; number of credit units; specific course and field instruction; applicable qualifying and comprehensive examinations and culminating activities; and have a cumulative grade-point average of 3.0 for graduate students, computed separately for the total degree program and for courses in the major area.

Completed a field practicum.

Completed the culminating activity, which shall consist of a combination of the following, depending on the academic program:

- a written comprehensive examination (prior to the field experience),
- professional portfolio (upon completion of the field experience), and
- an online exit survey and exit interview with the department chair (at the conclusion of the program).

Submitted a graduation petition two-to-four quarters before graduation, as specified by the degree program.

Given evidence of responsiveness to the established aims of the University and of the school.

Discharged financial obligations to the University and completed the exit interview with the Office of Student Finance.

The candidate who has completed the requirements at the end of the Spring Quarter is encouraged to be present at the conferring of degrees. Students desiring to participate in commencement ceremonies must do so at the spring (June) exercise immediately following completion of their assigned curricula.

The University reserves the right to prohibit participation in commencement exercises by a candidate who has not satisfactorily complied with all requirements.

## **GRIEVANCE POLICY**

Grievances related to sexual harassment, racial harassment, or discrimination against the disabled shall be pursued in accordance with University policies specifically relating to these items. Grievances related to academic matters or other issues covered by specific school policies shall be made pursuant to the policies of the school in which the student is enrolled. A student who questions whether the process provided by the school has followed its policy in regard to his/her grievance may request the Office of the Provost to conduct a review of the process used by the school in responding to his/her academic grievance. For more detailed information, please see the University *Student Handbook* for School of Public Health grievance policy and procedures.

## **PROGRAMS AND DEGREES**

It is the responsibility of students to know and fulfill all academic and graduation requirements and to make every reasonable effort to obtain adequate academic advisement. Frequent advisor contact helps to ensure that students have current academic information and are making adequate progress toward educational goals.

## **DEGREES OFFERED**

The School of Public Health offers four master's degrees—Master of Business Administration (M.B.A.), Master of Public Health (M.P.H.), Master of Science in Public Health (M.S.P.H.), and Master of Science (M.S.); and two doctoral degrees—Doctor of Public Health (Dr.P.H.) and Doctor of Philosophy (Ph.D.).

## **CONTINUING EDUCATION AND EXTENSION PROGRAMS**

The school offers nondegree short courses and workshops at various locations in the United States and overseas to meet the continuing education and extension program needs of School of Public Health alumni, other health professionals, and lay persons in the church and community. In addition, most degree courses are approved for continuing education credit.

## **MASTER'S DEGREE PROGRAMS**

Master of Public Health (M.P.H.), Master of Business Administration (M.B.A.), and Master of Science in Public Health (M.S.P.H.) degree programs are designed for those with appropriate backgrounds who are seeking to acquire graduate-level competencies in public health, business administration, or health administration.

## Master of Public Health

The program leading to the Master of Public Health (M.P.H.) degree is designed to provide broad preparation in the fundamentals of public health, while at the same time offering opportunity for some specialization in areas of interest.

The degree is offered with major concentrations in the areas of biostatistics, environmental and occupational health, epidemiology, health policy and management, health education, global health, maternal and child health, and nutrition.

### Public health core requirements

All graduate degree students in the School of Public Health are expected to develop an understanding of the areas of knowledge basic to public health. This is accomplished by including the following required courses, or their designated equivalents, in each degree program:

ENVH 509	Principles of Environmental Health	3.0
EPDM 509	Principles of Epidemiology I	3.0
HADM 509	Principles of Health Policy and Management	3.0
HPRO 509	Principles of Health Behavior	3.0
PHCJ 605*	Overview of Public Health	1.0
STAT 509/ 521	General Statistics/Biostatistics I	4.0
RELE 534	Ethical Issues in Public Health	3.0
HPRO 536	Program Planning and Evaluation	2.0
NUTR 509/ 510	Public Health Nutrition and Biology/ Advanced Public Health Nutrition	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0
PHCJ 675**	Integrated Public Health Capstone	2.0

\* Taken in the first quarter

\*\*Must be taken in the last quarter, after all other required public health core requirements are met.

Students are expected to identify a specific area of concentration or major. They may opt to add additional course work leading to a second area of emphasis.

### Culminating activity

The school requires each graduate to complete a synthesizing activity that demonstrates basic competencies in the five core areas of public health. These areas include biological, physical, and chemical factors that affect the health of a community; concepts and methods of relevant social and behavioral sciences; distribution of diseases or conditions in populations, and factors that influence this distribution; collection, storage, retrieval, analysis, and interpretation of health data; and planning, policy analysis, and administration of health programs.

### Field practicum

In accordance with Loma Linda University's mission—"To make man whole"—the School of Public Health provides students with rich experiences, as well as training opportunities that include all dimensions of health: physical, mental, spiritual, intellectual, and environmental. Part of this training occurs during the practice experience—which may be referred to as field practicum, applied research, or

internship, depending on the department. It can be performed during one or more quarters and generally consists of 400 hours. The practice experience at the School of Public Health is an opportunity for students to apply the knowledge they learn in the classroom, enhance their understanding of public health, and contribute to the health of the community in which they are engaged. The experience allows students to demonstrate their ability to synthesize and integrate prior learning into real-life, public health settings.

## **Peace Corps Master's International Program / Master of Public Health**

### **Peace Corps volunteers/International**

The Peace Corps was established in 1961 to provide U.S. citizens an opportunity to serve their country in the cause of peace by living and working in developing countries. Over the years as the needs of host countries have evolved, the Peace Corps has continued striving to attract individuals whose education, experience, and cross-cultural sensitivity can address global needs as they arise; and who can facilitate sustainable, community-centered development. After identifying a number of areas in which there was a shortage of personnel with specialized expertise—including the area of public health—the Peace Corps established the Master's International Program in 1987. This program is designed not only to meet the increasing demand from Peace Corps host countries for volunteers with higher levels of education and technical expertise, but also to provide volunteers the opportunity to incorporate Peace Corps service into graduate education pursuits.

Loma Linda University is one of over eighty universities currently participating in the Master's International Program. It is one of only thirteen universities that offer this prestigious program in conjunction with the Master of Public Health degree, which includes one of the following emphases: environmental health, health promotion and education, global health, maternal-child health, health policy and management, and nutrition.

Prospective students must be accepted both by Loma Linda University School of Public Health into the Master of Public Health degree program, and by the Peace Corps into the Master's International Program.

To join the Peace Corps, the applicant must be a U.S. citizen, at least 18 years of age, and in good physical health.

For information regarding additional eligibility criteria and the excellent benefits package (including language and cultural training, living and housing expenses in the field, medical and dental coverage, deferment of student loan repayment, transportation allowance to and from one's service assignment, vacation time and allowances, financial readjustment and allowance, and employment assistance postservice), contact the Peace Corps at 800/424-8580, ext.1843; or Office of University Programs at <peacecorps.gov>. Students can also contact the school's Peace Corps liaison at <sphpcinfo@llu.edu>.

After acceptance into the program, the student completes the course work on the Loma Linda campus.

When the academic course work has been completed, the student enters a three-month intensive language, technical, and cross-cultural training period in the assigned host country with Peace Corps. Upon completion of the training period, the student is then a full-fledged volunteer and begins the twenty-four month service period.

While on assignment, MIP/M.P.H. degree program students receive an internship or a field-practicum tuition scholarship.

Upon satisfactory completion of the Peace Corps assignment and the culminating activity report, the student is awarded the M.P.H. degree.

**Peace Corps fellows/USA (community program)**

Peace Corps fellows receive scholarships and full credit for Peace Corps service and are eligible for work-study and medical benefits. Fellows will help coordinate community-based learning activities in the neighborhoods of San Bernardino, California. (Internship requires access to an automobile.) Specific responsibilities include assisting faculty in organizing projects and in helping to mentor students.

**Master of Business Administration**

The program leading to the Master of Business Administration (M.B.A.) degree is designed to develop the management and administrative skills of those involved in the public and private health care industries.

The Master of Business Administration (M.B.A.) degree provides a broad understanding of health care management and hands-on experience in applying learned principles. The M.B.A. degree is designed for those whose professional objective is a career in health care management. The residency period provides experience in a health care organization. Graduates are prepared for careers at upper administrative levels in health care organizations—including hospitals, public agencies, health care networks, group practices, long-term care, and managed care.

**Master of Science in Public Health**

The Master of Science in Public Health degree is designed to provide in-depth specialization in one area of public health, while at the same time assuring an orientation to community health and a breadth of understanding of the core areas by a required minimum of core public health courses.

The degree is offered in the area of biostatistics. Specific information about the areas of specialization is found in the Biostatistics Program in this CATALOG.

**Master of Science**

The Master of Science degree in nutrition is offered to meet the specific needs of those who desire advanced training in nutritional sciences. The Master of Science degree in nutrition has the following objectives:

1. To provide a basic science approach to understanding advanced areas in human nutrition.
2. To enhance research skills by developing or applying advanced laboratory techniques in human nutrition research.

More information about this area of specialization is found in the Nutrition Program in this CATALOG.

**Public health core requirements**

All graduate students in the School of Public Health are expected to develop an understanding of the areas of knowledge basic to public health.

**Culminating activity**

The School of Public Health requires each graduate to complete a synthesizing activity that demonstrates basic competencies in the five core areas of public health.

## RESIDENCIES FOR PHYSICIANS

Residency training in the specialties of general preventive medicine and public health and in occupational medicine, as well as a combined residency in family and preventive medicine, are offered by the School of Public Health for qualified physicians. Both the residency training and the combined residency programs are accredited by the Accreditation Council for Graduate Medical Education (ACGME) and prepare residents for certification by the American Board of Preventive Medicine (ABPM). Both specialties require the successful completion of an accredited M.P.H. degree. Because Loma Linda University Medical Center offers an annual tuition benefit to all employees, approximately 40 quarter hours of the required 56-60 hours to complete an M.P.H. degree will be at a nominal cost.

Applicants who have completed an accredited internship year but not an M.P.H. degree need to apply for the two-year integrated academic and practicum program; while those who have completed an accredited internship year and an M.P.H. degree need to inquire regarding application for the practicum year only.

Those interested in applying to either of these training programs should contact the residency office in Nichol Hall, Room 1516 by either calling 909/558-4918 or emailing <ifoster@llu.edu>.

### Preventive medicine residency

The three-year program consists of an internship year followed by two years of integrated academic and practicum experiences. Three internship positions are offered through the National Residency Matching Program (NRMP) each year.

The program combines the academic and practicum experience over two years. During this time, residents will complete their M.P.H. degree and rotate at the community training sites. Residents are encouraged to major in epidemiology, health administration, or health care practice, but are not required to do so. Practice sites include the Center for Health Promotion, the Jerry L. Pettis VA Medical Center, Patton State Hospital, Kaiser Permanente Medical Center in Fontana, San Bernardino County Department of Public Health, and the Inland Empire Health Plan. A wide variety of intervention programs to reduce health risks and promote healthful living practices are integrated into the second- and third-year rotations; and an international health emphasis is available for interested residents, including involvement with international projects in developing countries.

Under the guidance of the residency and faculty members at the School of Public Health, each resident conducts a research project on a topic of choice during the senior year.

### Family and preventive medicine residency

The Family and Preventive Medicine Residency Program combines curricular elements of a three-year family medicine residency and a three-year preventive medicine residency into an efficient training program of four years. During the first year, residents complete a family medicine internship but also set aside time to begin course work towards their Master of Public Health (M.P.H.) degree. The second year remains family medicine-centered but also includes a preventive medicine rotation and further M.P.H. degree course work. During the third and fourth years, there is an equal mix of family and preventive medicine rotations and M.P.H. degree course work, as well as elective time.

Residents may select one of two tracks: (a) global health or (b) lifestyle medicine. In each track, residents are exposed to new models of clinical care and also spend extra time emphasizing natural, nonpharmaceutical approaches to health and healing.

Elective time during the third and fourth years can be used to pursue one of the specific tracks summarized above or for additional learning in other areas of interest and value to the resident.

### **Occupational medicine residency**

Physicians who have completed an internship (PGY-1) year are eligible to apply for the two-year occupational medicine program, which involves an integrated academic and practicum phase. Most residents select an M.P.H. degree major in environmental health. If an accepted applicant has already completed an accredited degree with a major emphasis in an area other than environmental health, s/he will be required to take the following courses during the training: ENVH 589 Environmental Risk Assessment, ENVH 581 Principles of Industrial Hygiene, and ENVH 587 Environmental Toxicology.

The program emphasizes the clinical and applied aspects of occupational and environmental medicine. It focuses on the health of individuals and groups in relationship to work, hazards in the workplace, and environmental issues. The University takes special interest in the assessment of individual health hazards and the identification and promotion of practices that help to reduce risk and prevent or postpone disease and injury.

Under the guidance of the residency and faculty members of the School of Public Health, each resident completes a research project on a topic of choice during the senior year.

### **Addiction medicine fellowship**

The fellowship program provides addiction medicine experience and opportunities, and utilizes a wide range of evaluation and treatment settings. Fellows will be involved with treatment and education groups, lectures, and teaching of internal medicine residents, family practice residents, preventive medicine residents, and medical students.

Applicants must have successfully completed an accredited residency training program in any medical specialty and have a valid medical license in the state of California.

Fellows rotate at the following sites: Loma Linda University Behavioral Medicine Center, Betty Ford Center, and Kaiser-Fontana Chemical Dependency Recovery Program.

The start date for a one-year fellowship is July 1 of each year, though this is negotiable.

## **DISTANCE LEARNING PROGRAMS**

The School of Public Health offers master's degree programs in various majors online and at off-campus sites to meet the needs of qualified individuals who seek to develop graduate-level competencies in public health but who for a variety of reasons choose not to be full-time, on-campus students.

The School of Public Health has considerable experience offering distance learning programs at the master's degree level. For more than thirty years, the School of Public Health has adapted its program delivery style to meet the needs of busy professionals. Currently the school offers the online M.P.H. degree in two areas: public health practice and health education. The Dr.P.H. degree in health education is also offered in a technology-mediated format. These programs cater to students in the U.S. and internationally. The school has offered off-campus M.P.H. degree programs in Russia, Chile, and Peru; and an M.B.A. degree program in Guam and Hawaii.

The off-campus programs require the school's faculty to travel to the education site and teach courses in the condensed format. School of Public Health research shows that this form of instruction is just as effective as the less condensed method, especially with experienced professionals who are eager to learn and excel at self-directed learning.

### **General degree requirements**

All applicants to the Distance Learning Programs must meet the general admissions requirements found in Section II of this CATALOG.

## Distance Learning Financial Information

### Financial policies

Tuition for the online M.P.H. degree programs courses is the same as the on-campus tuition rate. Tuition must be paid in full at the time of registration.

### Refund policy for condensed courses

Tuition refund for courses dropped is according to the following schedule:

- First day of class, or fraction thereof—100 percent of tuition refunded;
- Second day of class, or fraction thereof—75 percent of tuition refunded;
- Third day of class, or fraction thereof—50 percent of tuition refunded;
- After the on-site class session is complete—no tuition is refunded.

### Financial clearance

The student is expected to maintain a clear financial status at all times. Financial clearance must be obtained:

- before registering for any class;
- before receiving a diploma; or
- before requesting a transcript, statement of completion, or other certification to be issued to any person, organization, or professional board.

### Loans

Inquiry about loans should be made to the University Office of Financial Aid. Only students who are accepted into a degree program or federal financial aid-approved certificate program are eligible to apply. For loan purposes, online students registered for 4 units per quarter are considered to be enrolled half time.

### Checks

Checks should be made payable to Loma Linda University and should show the student's name and social security or LLU ID student number to ensure that the correct account is credited.

## ONLINE MASTER OF PUBLIC HEALTH

The Online Master of Public Health Program is offered with majors in public health practice and in health education. Each is a three-year, online program with online orientation, community, and courses. Students begin their program in any of the four quarters of the academic year.

The program closes with a culminating activity, which includes a community practicum report, preparation of a portfolio, and an exit interview.

### Course load

A full-time graduate course load consists of 8 units, and a half-time graduate course load is 4 units. Students in the distance learning program who need to qualify for financial aid must take a minimum of 4 units per quarter to establish and maintain eligibility.

**Proctors**

Some courses require a proctored examination. Each student is required to have on file a signed proctor contract with the name of a person who will serve as his/her permanent proctor. A proctored examination is automatically sent to this person. The proctor may not be a relative or someone living in the same house as the student. The registrar of a local college or university, or a librarian is considered an appropriate proctor.

**Residence requirement**

There is no residence requirement for the online M.P.H. degree program. Students complete this program online.

**CERTIFICATE PROGRAMS**

The School of Public Health offers certificates in various programs to meet the needs of qualified individuals seeking to develop competencies in specialties in public health. Instruction for the certificate program is primarily provided by regular School of Public Health faculty members on campus during regular quarter terms. Students are responsible for following regular registration procedures during regularly scheduled time periods. A minimum of 27 units is required for a certificate and no more than 9 units may be shared with a degree program.

**General certificate information****Course work**

Course sessions are conducted during regular term sessions. Certificate courses offered are regular School of Public Health courses that carry the same credit units as courses applicable toward degree programs, and may be applied to degree requirements. Certificate courses are taught on a quarter-term system, although selected courses may be offered by special arrangements.

**Religion course requirement**

Registration and completion of a 3-unit, graduate-level, religion course is mandatory for completion of each certificate program. Religion courses must have an REL\_ prefix and be offered through Loma Linda University. The purpose of the religion requirement is to provide a spiritual dimension to the professional training of public health students, to provide students with an opportunity to further develop their skills in dealing with life's challenges, and to provide opportunity for personal spiritual growth. Course units will not be transferred from other universities or institutions; nor is waiver of this requirement an option, regardless of educational background. Traditional letter grading is required.

**General certificate requirements**

All applicants to the certificate programs must meet the general admissions requirements found in Section II of this CATALOG. Course work is graduate level; therefore, students must demonstrate eligibility for application to a graduate-level program.

**Course format**

In general, courses are taught in the same format as regularly scheduled on-campus courses. However, in addition, Web-based courses and/or intensive format courses may be utilized. These courses are

tailored to the adult learner, with clear application and examples from the public health professional world. These courses represent the same course requirements and credit units as those applicable to degree programs.

**Grade-point average**

A grade-point average (G.P.A.) of 3.0 (B) must be maintained.

**Financial clearance**

The student is expected to maintain a clear financial status at all times. Financial clearance must be obtained prior to the following:

- registering for any class;
- receiving a certificate; or
- requesting a transcript, statement of completion, or other certification to be issued to any person, organization, or professional board.

**Certificate programs**

The School of Public Health offers eight certificate programs and information on certification as a fitness instructor for the American College of Sports Medicine.

- Certificate in Basic Biostatistics
- Certificate in Basic Epidemiology
- Certificate in Epidemiological Research Methods
- Certificate in Health Geoinformatics
- Certificate in Emergency Preparedness and Response
- Certificate in Maternal and Child Health
- Certificate in Tobacco Control Research Methods
- Certificate in Lifestyle Intervention (currently closed for enrollment)

**Certificates in biostatistics and epidemiology**

Three certificate programs are offered through the Department of Epidemiology and Biostatistics. These programs offer specific skills in the biostatistics and epidemiology areas to professionals and others who desire to add these skills to their practices in public health but who do not necessarily wish to earn degrees.

The purpose of the certificate program in epidemiological research methods is to enable the holder to be more effective in applying for and designing research studies and surveys and doing basic descriptive analyses of collected data.

**Health geoinformatics**

The certificate in health geoinformatics is offered through the Department of Environmental and Occupational Health. The purpose of this certificate is to prepare participants to apply geospatial information science and technologies to public health practice, research, and learning. These skills are highly desired today as an integral part of health informatics competencies that are required of health professionals, as outlined in the 2002 Institute of Medicine (IOM) reports.

Upon completion of this program, students should be able to:

- State the basic principles of geospatial information science as they relate to health research and practice.
- Use state-of-the-art geographic information system (GIS) software applications and techniques for accessing and capturing spatially defined health information; and build a related, useful geospatial database.
- Use effective geospatial data displays while producing and publishing customized maps and other visual displays of health data.
- Employ GIS-based methods and techniques of spatial analysis that support health research and decision making in public health practice and policy.
- Competently apply geospatial technology and methods in at least one key area of health geoinformatics, such as disease mapping, tracking, and assessment of environmental hazards and exposure; health planning and policy; community health; health education and communication; analysis of access to health services; or health care geographics.
- Manage health GIS projects in government, academia, and community settings.

### **Emergency preparedness and response**

The certificate in emergency preparedness and response will provide students with knowledge and skills to effectively plan, implement, and evaluate domestic and international public health emergency response and recovery efforts.

Upon completion of this certificate program, participants will be able to:

- Take leadership and management roles in disaster preparedness and response.
- Design a preparedness and response plan.
- Create and execute tabletop exercises and drills.
- Evaluate and assess community and institutional capacity for emergency preparedness and response.
- Address the major public health issues that arise during emergencies.

### **Maternal and child health**

The certificate in maternal and child health is offered through the Department of Health Promotion and Education. The purpose of this regular certificate program is to familiarize participants with the complex issues associated with planning, implementing, and evaluating maternal and child health programs.

Upon completion of this certificate program, participants will be able to:

- Describe key public health issues in the field of maternal and child health.
- Utilize principles of behavior change in the promotion of maternal and child health.
- Plan, implement, and evaluate public health programs addressing multifaceted, integrated programs in maternal and child health based upon current operational models.
- Write competitive proposals for grants and contracts in the field of maternal and child health.

### **Tobacco control research methods**

Tobacco consumption continues to be a major public health challenge both globally and in the U.S.A. According to the World Health Organization, an estimated 4.2 million deaths are attributable to tobacco use annually. In the U.S.A., more than 400,000 individuals (30 percent of cancer mortality) die from tobacco-related causes every year.

Although a variety of strategies are being used to address the tobacco problem, there is a dearth of academic-based programs to educate health professionals who will function as effective practitioners and researchers in tobacco use prevention and treatment. The purpose of this interdepartmental, collaborative program is to train participants in tobacco research that effectively integrates theory and field-based experience.

Upon completion of this certificate program, participants should be able to:

- Design a survey with population-based variables pertinent to tobacco policy that measures prevalence of tobacco use, knowledge and attitudes about tobacco use, and health behaviors associated with tobacco use.
- Conduct qualitative studies with population-based variables pertinent to tobacco policy that assess tobacco use, knowledge and attitudes about tobacco use, and health behaviors associated with tobacco use.
- Design research programs to establish a national and regional baseline and subsequent compliance with conditions set forth by the Framework Convention on Tobacco Control Treaty (WHO) and NPOWER initiative (WHO).
- Interpret the findings from qualitative and quantitative research on tobacco use for the purpose of planning tobacco prevention and cessation programs.
- Write focused grant proposals for tobacco control research.
- Prepare reports of original research in tobacco control research.
- Be familiar with the authoritative sources of national and global tobacco control data on the Internet and in the published literature (scientific, policy, governmental).

## **DOCTORAL DEGREE PROGRAMS**

### **Doctor of Public Health**

The Doctor of Public Health (Dr.P.H.) degree is designed to provide comprehensive academic and research training in the field of public health. Students may enroll on a full or part-time basis; however, they must advance to candidacy within five years of entering the program. Majors are available in: epidemiology, health education, global health (currently closed to new admissions), nutrition, and preventive care. A combined degrees program is available with psychology. Information on requirements for a specific program may be found in Section III of this CATALOG.

The doctoral programs offer training for careers in which advanced analytical and conceptual capabilities are required (e.g., teaching, research, consultation, and top-level administration). Students' research and dissertations are key components in the development of critical thinking related to public health and their major fields.

A minimum of two years is generally required to complete course work if full time; however, the number of units required depends on the specific major chosen. Time to completion of dissertation is variable. Program plans are described under individual majors.

Students whose academic backgrounds include substantial graduate study in public health and/or the major field may be granted advanced standing. The number of units of course work required to complete the program may be reduced accordingly but is not to be fewer than 60 units plus dissertation units at Loma Linda University.

### **School goals**

Loma Linda University School of Public Health, a Seventh-day Adventist Christian institution, seeks to further the healing and teaching ministry of Jesus Christ "to make man whole" by:

- Educating ethical and proficient public health professionals and scholars through instruction, example, and the pursuit of truth.
- Expanding and providing advanced knowledge through research in nutrition, epidemiology, and education and preventive care; and applying this knowledge to health and disease in the context of public health.
- Providing advanced skills and competencies for leaders in public health teaching and practice.

### **Learner outcomes**

Upon completion of the Doctor of Public Health degree program, students will be able to:

- Apply ethical principles to the field of public health.
- Demonstrate a commitment to lifelong learning to support the pursuit of truth.
- Demonstrate a core set of research skills.
- Use data and theory to identify public health problems.
- Formulate appropriate research questions.
- Choose appropriate research designs.
- Develop data collection instruments.
- Collect, enter, and manage data.
- Analyze and interpret data.
- Communicate, both orally and in written form, results to the scientific and lay community.
- Write program and grant proposals and compete for external funding.
- Demonstrate competencies in teaching, public health practice, and strategic planning.

### **Admissions requirements**

Following are the admission requirements for the Doctor of Public Health degree program:

- A strong background and high academic performance in previous education.
- Master's degree in the major field or its equivalent; or a doctoral or professional degree in a health-related field.
- Minimum cumulative G.P.A. of 3.2 in graduate study.
- Submission of GRE scores or equivalent (taken within the past five years).
- Statement of professional aspirations and goals.
- Experience beyond a master's degree in a health-related field, preferably that of the major, required by some programs.
- Recommendations indicating the applicant's academic performance and leadership potential.
- Interview with the doctoral committee.

Applications are considered year round.

**Comprehensive and qualifying examinations**

Students are required to demonstrate ability and readiness to proceed with doctoral study and research by successfully passing appropriate comprehensive and/or qualifying examinations. The specific format and timing are dependent on the major field of study. Organization of the material, professional presentation, and reference to authorities in the field and the literature are expected.

**Advancement to candidacy**

Advancement to candidacy is granted by the associate dean for academic affairs. Thereafter, a dissertation committee is formally appointed upon recommendation of the associate dean, provided students have:

- Shown evidence of superior scholarship and ability.
- Fulfilled all course requirements.
- Satisfactorily passed the appropriate examinations.
- Received approval of the individual's dissertation committee for the research and dissertation proposal.

**Time limit**

The time lapse from first enrollment in the Dr.P.H. degree program to advancement to candidacy is five years, and seven years to completion of the degree program.

**Research and dissertation**

The dissertation is a scholarly statement of the results of original research. It should advance knowledge in the major field. It must be an independent investigation and include analysis and interpretation of data and discussion of findings. It should be skillfully written and of such scholarship and scientific value as to demonstrate a mastery of research methodology. Students are encouraged to use the publishable paper format (required in some majors) rather than the traditional form. The dissertation is defended orally before the doctoral research committee and presented publicly before invited faculty, peers, and the academic and health community. Additional information is detailed in the school's *Dr.P.H. Handbook*.

**Teaching and research assistantships**

A limited number of research and teaching assistantships are available. Students on assistantships make a time commitment for experience and may need to limit their academic load in order to participate in these activities.

**Postdoctoral fellowships**

One-year fellowships may be available in various programs. They are tailored to the applicant's interest (in accordance with training opportunities), expressed needs, and funding. Details can be obtained from the dean.

**Doctor of Philosophy**

The Doctor of Philosophy (Ph.D.) degree is designed to provide comprehensive research and academic training. Students may enroll on a full- or part-time basis; however, they must advance to candidacy within five years of entering the program. The Ph.D. degree is currently offered in epidemiology.

The Ph.D. degree offers training for top-level jobs in research and academia. The program is specifically targeted to doctoral level health professionals who want to move into a research and academic career. However, those with a master's degree in a relevant field and with documented research experience are also eligible for this program. Students' research and dissertation are key components in the development of critical thinking.

Course work is generally completed in two years, if full time. Time to completion of dissertation is variable. The specific program plans are described under the epidemiology department.

Students whose academic backgrounds include substantial graduate study in a cognate field may be granted advanced standing. The number of units of course work required to complete the program may be reduced accordingly but is not to be fewer than 60 units plus dissertation units at Loma Linda University.

### *School goals*

Loma Linda University School of Public Health, a Seventh-day Adventist Christian institution, seeks to further the healing and teaching ministry of Jesus Christ "to make man whole" by:

- Educating ethical and proficient scholars through instruction, example, and the pursuit of truth;
- Expanding and providing advanced knowledge through research in various fields related to human health and disease.
- Providing advanced skills and competencies for professionals who plan to pursue a research career.

### *Learner outcomes*

Upon completion of the Doctor of Philosophy degree in epidemiology, students will be able to:

- Identify areas requiring biomedical or epidemiologic research and design, and conduct appropriate study to address the question(s).
- Write grant proposals to obtain funding for research.
- Select and execute appropriate and valid analyses of data using available statistical software.
- Write, interpret, and publish results of conducted research; and communicate orally.
- Develop and teach classes at the graduate level within their area of expertise.

### *Admissions requirements*

Following are the admission requirements for the Doctor of Philosophy degree program in epidemiology:

- A strong background and high academic performance in previous education.
- Doctoral level health professional degree or master's degree in relevant field, with documented research experience.
- Students without a doctoral level health professional degree, completion of several courses in biological sciences (see section Epidemiology—PH Doctor of Philosophy prerequisites).
- GRE scores above the 50th percentile in all three sections, with an average of at least the 50th percentile on the quantitative and analytic sections combined.
- International students, comprehensive evaluation of transcript by an approved foreign credentialing agency for equivalence of a doctoral level health professional degree or a master's

degree in a relevant field; also, a TOEFL score of 213 (computer generated, with an essay score of 5.0) if English is the applicant's second language.

- Minimum cumulative G.P.A. of 3.2 in graduate study.
- Statement of professional aspirations and goals.
- Recommendations indicating the applicant's academic performance and research potential.
- Interview with the doctoral committee.

Applications are considered all year round.

### *Comprehensive and qualifying examinations*

Students are required to demonstrate ability and readiness to proceed with doctoral study and research by successfully passing the comprehensive examination. The examination includes writing a grant proposal on a specific topic, doing independent statistical analyses on a provided dataset, oral examination, and oral presentation of the grant proposal. Organization of the material, professional presentation, and reference to authorities in the field and the literature are expected.

### *Advancement to candidacy*

Advancement to candidacy is granted by the associate dean for academic affairs upon recommendation by the Department of Epidemiology and Biostatistics. Thereafter, a dissertation committee is formally appointed upon recommendation of the associate dean, provided students have:

- Shown evidence of superior scholarship and ability.
- Fulfilled all course requirements.
- Satisfactorily passed the appropriate examinations.
- Received approval of the dissertation committee for the research and dissertation proposal.

### *Time limit*

The time lapse from first enrollment in the Ph.D. degree program to advancement to candidacy is five years, and seven years to completion of the degree program.

### *Research and dissertation*

The dissertation is a scholarly statement of the results of original research. It should advance knowledge in the major field. It must be an independent investigation and include analysis and interpretation of data and discussion of findings. It should be skillfully written and of such scholarship and scientific value as to demonstrate a mastery of research methodology. Students are required to use the publishable paper format rather than the traditional form. Before their dissertation defense, students must have published one paper and submitted two more papers and responded to reviewers' comments on both. The dissertation is defended orally before the doctoral research committee and presented publicly before invited faculty, peers, and the academic and health community. Additional information is detailed in the Faculty of Graduate Studies' "Dissertation and Thesis Format Guide."

### *Teaching and research assistantships*

As part of their training, Ph.D. degree students must be involved as teaching assistants and laboratory assistants in introductory- and advanced-level courses, as well as give at least one lecture in one of the

EPDM/STAT courses. A limited number of research and teaching assistantships are available. Students working as assistants make a time commitment for experience and may need to limit their academic load in order to participate in these activities.

### *Postdoctoral fellowships*

One-year fellowships may be available. They are tailored to the applicant's interest (in accordance with training opportunities), expressed needs, and funding. Details can be obtained from the dean.

## **INDIVIDUAL DOCTORAL DEGREE PROGRAMS**

For School of Public Health doctoral degree program details, see individuals programs in Section III:

- Epidemiology, Doctor of Public Health (Dr.P.H.) and Doctor of Philosophy (Ph.D.)
- Global Health, Doctor of Public Health (Dr.P.H.)—closed to enrollment
- Health Education, Doctor of Public Health (Dr.P.H.)—on-campus and technology mediated
- Nutrition, Doctor of Public Health (Dr.P.H.)
- Preventive Care, Doctor of Public Health (Dr.P.H.)
- Health Policy and Leadership, Doctor of Public Health (Dr.P.H.)

## **COMBINED DEGREES PROGRAM**

The School of Public Health, in conjunction with the School of Science and Technology, offers a combined degrees program in preventive care (Dr.P.H.) *with* clinical psychology (Psy.D.).

## **Financial Information**

The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy in regard to reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs in regard to these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees on the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Previous accounts with other schools or with this University must be settled prior to registration.

### **TRAINEESHIPS**

United States Public Health Service traineeships provide grant money in support of public health training to citizens of the United States or to persons having in their possession a visa granting permanent residence in the United States. Allocation is made by the school to those who demonstrate financial need and who undertake specified programs of study. Further availability is contingent upon congressional funding. Applications must be submitted for consideration by June 15. Applications are available from the School of Public Health Office of Financial Administration.

### **ASSISTANTSHIPS**

A limited number of teaching and research assistantships are available through the academic departments and individual researchers. It is understood that the student will perform such duties as may be required by the one to whom the student is responsible, but such duties are not to exceed the equivalent of half-time employment. Students will be considered after they demonstrate knowledge and proficiency in the area in which they would work.

### **APPLICATION FOR FINANCIAL AID**

Before a fellowship, traineeship, or assistantship is awarded, the student must have secured regular admission to the school. The student's academic record, financial need, and potential productivity are among the factors considered in the awarding of financial aid. Preference is given to complete applications received by May 15. Early application is advised.

### **LOANS**

Loan funds may be available to School of Public Health students who show need as determined by a federal formula. Loans are restricted to citizens of the United States and eligible noncitizens. Certain funds are interest free while a student is enrolled at least half time. Inquiries about loans should be made to the Office of Financial Aid.

## SCHEDULE OF CHARGES

Effective Summer Quarter 2011 (subject to change by trustee action):

### Tuition

#### Master's and doctoral degrees

\$722	Per unit: credit (on and off campus)
\$361	Per unit: audit (on and off campus)

#### Special tuition charges

\$300	Field practicum and internship (100 hours)
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#### Special fee

\$654	Special fee
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#### Special charges

\$25	Application (nonrefundable)
\$100	Acceptance deposit for bachelor's degree (nonrefundable)
\$100	Acceptance deposit for master's degree students (nonrefundable)
\$250	Acceptance deposit for doctoral degree students (nonrefundable)
\$50	Late payment fee
\$20	Returned check fee
\$50	Late registration fee
\$25	Examination, other than regularly scheduled
\$50	Equivalency examination

#### Miscellaneous expenses

cost	Health care items not covered by insurance
cost	Breakage, damage, loss of University equipment

## REFUND POLICY

Tuition refunds are calculated on a prorated basis for up to 60 percent of the quarter, with no refund after that point. This calculation is based on the day a withdrawal from a course or program is processed by University Records. Students who drop a course from a block program of courses receive no refund.

If a student drops a course after completing 10 percent of a class, the student will receive a 90 percent refund. Because refunds are based on a percentage of the class completed, the days on which these percentage refunds will change are determined by the length of the term in which the course is scheduled.

## AWARDS AND HONORS

Students demonstrating superior scholarship, professionalism, and promise of future contribution to the field of public health may be nominated for recognition. Faculty members and staff are also eligible for certain awards.

The BECKY BUSHMAN AWARD, established by Mary and Bliss Bushman, is given to individuals who best demonstrate healthy lifestyles, academic achievement, and contributions to society.

The CALLICOTT-REGISTER AWARD is given as a tuition assistance award to qualified nutrition students.

The PRESIDENT'S AWARD is given annually to a student who has demonstrated superior or excellent scholarship, actively participated in the affairs of the student and church communities, actively participated in general community service, and shown evidence of commitment to the highest ideals of the University.

The CHARLIE LIU AWARD is given by the student association to an outstanding student, faculty, or staff member who reflects the life of Christ through a caring spirit, a listening heart, and a commitment to peace.

The DEAN'S AWARD is given annually to a student who has demonstrated superior or excellent scholarship, actively participated in the affairs of the student and church communities, actively participated in general community service, and shown evidence of commitment to the highest ideals of the School of Public Health.

Nomination is made annually for membership in DELTA OMEGA, the national honor society for public health. Nominees must be from the top 25 percent of their class and demonstrate promise of significant contribution to the field of public health.

The GLEN BLIX AWARD is given annually to the graduating doctoral student in preventive care who best exemplifies excellence and leadership in preventive care.

The HALVERSON AWARD is presented to a graduating student who exemplifies excellence and promise of leadership in health administration.

The HULDA CROOKS AWARD is the Loma Linda University School of Public Health's premier student award acknowledging whole person excellence. The purpose of this endowment is to provide Loma Linda University School of Public Health funds for student awards for excellence, student-initiated research, and public health practice grants. The grants are designed to encourage Loma Linda University School of Public Health students to become involved in the practical application of their educational experience through research and public health practice. To receive a grant, students are required to submit proposals that will be competitively judged by the Awards and Traineeship Committee. Grant application will be considered once each academic school year, with up to two awards given each year.

Each year the School of Public Health presents cash awards of \$2000 to two students in honor of Hulda Crooks. In addition, there are \$1000-\$3000 research and public health practice grants available to currently registered School of Public Health students.

The JEANNE WEISSMAN RESEARCH AWARD is granted annually during the Spring Quarter to a Doctor of Public Health degree student who has maintained a G.P.A. of 3.2 or above and who has demonstrated financial need.

The NATIONAL DEAN'S LIST is comprised of students in the top 25 percent of their class who have carried a full academic load during a quarter with a grade-point average of at least 3.5 and no Incomplete notation on their report.

The P. WILLIAM DYSINGER EXCELLENCE IN TEACHING AWARD is given annually by the student association to a faculty member who exemplifies excellence in teaching, Christian commitment, and support for cultural diversity.

The RUTH WHITE AWARD is given to an outstanding student at commencement each year who exemplifies a spirit of cooperation and leadership, helpfulness in scholastic efforts, and sensitivity to students from diverse cultures.

The SELMA ANDREWS SCHOLARSHIP provides funding for international health majors to attend Global Health Council.

The WILLARD AND IRENE HUMPAL AWARD recognizes students who have gone the extra mile to give service to their church, their school, and their community; who are enthusiastic learners; and who have demonstrated financial need.

*Department-specific scholarships and awards may be viewed on the SPH departmental Web site.*

### **ADDITIONAL REQUIREMENTS**

For additional policies governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

## **Biostatistics—PH**

M.S.P.H., M.P.H.

W. LAWRENCE BEESON, Interim Chair

### **FACULTY**

David E. Abbey

Khaled Bahjri

W. Lawrence Beeson

Mark Ghamsary

Jayakaran S. Job

Keiji Oda

Floyd F. Petersen

David J. Shavlik

Pramil N. Singh

Loretta Wilber

Grenith J. Zimmerman

### **BIOSTATISTICS—M.S.P.H.**

MARK M. GHAMSARY, Program Director

The Master of Science in Public Health (M.S.P.H.) degree Biostatistics Program is a two-year curriculum that emphasizes statistical methods, data analysis and computing, and epidemiology. It is intended to train persons for collaborative work with scientists in nearly every area related to public health and medicine and to prepare them for a Ph.D. degree program in statistics, epidemiology, or biostatistics. A thesis is required. Students work with faculty as research associates during their training.

### **Learner outcomes**

Upon completion of the M.S.P.H. degree curriculum in biostatistics, the graduate should be able to:

1. Apply statistical theory and methods to the solution of applied statistical problems.
2. Design and implement a research study, including formulating research questions, appropriate study designs, sample size, sampling scheme, data collection methods, and analyses.
3. Critically review literature relevant to statistical methods and interpretation of statistical findings, and identify strengths and weaknesses of design.
4. Serve as statistical consultant and collaborator with health professionals on research projects, communicate the results of analyses, and write the statistical methods and results sections of a research paper.
5. Select appropriate statistical methods to analyze data and establish and manage databases using current computer software (e.g., SAS, R, SPLUS, and SPSS).

### **Program educational effectiveness indicators**

- Midterm and comprehensive final examinations
- Thesis

- Presentation and defense of thesis
- Course evaluation forms

### **Prerequisite**

- Calculus (one course)
- Linear algebra (one quarter)

### **Research and forums**

Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

### **Culminating activity**

The culminating activity includes a research thesis, with a written publishable paper and oral presentation; professional portfolio; and an exit interview with the department chair (at the conclusion of the program).

### **BIostatISTICS—M.P.H.**

MARK M. GHAMSARY, Program Director

The M.P.H. degree curriculum in biostatistics includes courses in biostatistics, computer programming, and epidemiology. A research project is required, but not a thesis.

This degree curriculum is intended to prepare graduates of a career in public health, including the collection, management, and interpretation of health-related data.

### **Learner outcomes**

Upon completion of the M.P.H. degree curriculum in biostatistics, the graduate should be able to:

1. Apply statistical methods to applied statistical problems.
2. Assist in design and implementation of research studies, including formulating research questions, appropriate study designs, sample size, sampling scheme, data collection methods, and analyses.
3. Critically review literature relevant to statistical methods and interpretation of statistical findings, and identify strengths and weaknesses of design.
4. Serve as statistical consultant to health professionals on research projects, communicate the results of analyses, and write the statistical methods and results sections of a research paper.
5. Select appropriate statistical methods to analyze data and establish and manage databases using current computer software (e.g., SAS, R, SPLUS, and SPSS).

### **Program educational effectiveness indicators**

- Midterm and comprehensive final examinations
- Research
- Presentation
- Course evaluation forms

## Prerequisite

- Calculus (one course)

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Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

## Culminating activity

The culminating activity includes a research project, with a written publishable paper and oral presentation; professional portfolio; and an exit interview with the department chair (at the conclusion of the program).

Public health core		MPH	MSPH	Basic
				Cert
ENVH 509	Principles of Environmental Health	3.0	3.0	
EPDM 509	Principles of Epidemiology I	3.0	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0	2.0	
HADM 509	Principles of Health Policy and Management	3.0	3.0	
HPRO 509	Principles of Health Behavior	3.0	3.0	
HPRO 536	Program Planning and Evaluation	2.0	2.0	
NUTR 509	Public Health Nutrition and Biology	3.0	3.0	
PHCJ 605	Overview of Public Health	1.0	1.0	
PHCJ 675	Integrated Public Health Capstone	2.0	2.0	
RELE 534	Ethical Issues in Public Health	3.0	3.0	3.0
STAT 521	Biostatistics I	4.0	4.0	4.0
Totals		29.0	29.0	10.0

Major		MPH	MSPH	Basic
				Cert
EPDM 515	Clinical Trials	3.0	3.0	
STAT 515	Grant- and Contract-Proposal Writing			3.0
STAT 522	Biostatistics II	4.0	4.0	4.0
STAT 523	Biostatistics III	4.0	4.0	
STAT 525	Applied Multivariate Analysis	3.0	3.0	
STAT 535	Introduction to Modern Nonparametric Statistics	3.0	3.0	3.0
STAT 538	Probability and Statistical Theory I		3.0	
STAT 539	Probability and Statistical Theory II		3.0	
STAT 545	Survival Analysis	3.0	3.0	
STAT 548	Analytical Applications of SAS	2.0	2.0	
STAT 557	Research Data Management	3.0	3.0	3.0
STAT 564	Survey and Advanced Research Methods	3.0	3.0	
STAT 569	Advanced Data Analysis	3.0	3.0	
STAT 594	Statistical Consulting	2.0	2.0	
STAT 694B	Research II	1.0		

STAT 548	Analytical Applications of SAS (2.0)	Choose one course	—	—	2.0
STAT 549	Analytical Applications of SPSS (2.0)				
Totals			34.0	39.0	15.0

<b>Research</b>			<b>MPH</b>	<b>MSPH</b>	<b>Basic Cert</b>
STAT 694A	Research I				1.0
STAT 694B	Research II				1.0
Totals			—	—	2.0

<b>Field experience</b>			<b>MPH</b>	<b>MSPH</b>	<b>Basic Cert</b>
Practicum units are in addition to the minimum graduate units required for the degree.					
STAT 798	Field Practicum	120 clock hours required for each unit of credit	1.0	2.0	
Totals			—	—	—

<b>Thesis</b>			<b>MPH</b>	<b>MSPH</b>	<b>Basic Cert</b>
STAT 695	Thesis			6.0	
Totals			—	6.0	—
<b>Overall Totals</b>			<b>63.0</b>	<b>74.0</b>	<b>27.0</b>

## Environmental and Occupational Health—PH

M.P.H.

SAMUEL SORET, Chair

### FACULTY

Hallmeyer Arnd

Mohan Balagopalan

Yonan Benjamin

Jesse Bliss

Jayanth Devasudaran

Ann L. H. Dew

Angela B. Dyjack

David T. Dyjack

Eric K. Frykman

Donna R. Gurule

Andrew Haglund

William C. Hoffman

David Holt

Daniel Jimenez

George E. Johnston

Marilyn S. Kraft

Robert I. Krieger

Harold (Hal) J. Marlow, Jr.

Kevin Mickey

Makram Murad al-Shaikh

Yojo Murata

Guck T. Ooi

Sun H. Paik

Cynthia A. Paulo

Corwin Porter

Joon W. Rhee

Kristen Riegel

Obed Rutebuka

Rhonda Spencer-Hwang

Mark Stewart

Steve Uhlman

Padma P. Uppala

Seth A. Wiafe

Dave A. Williams

## CONCENTRATIONS AND PROGRAMS

1. Environmental and Occupational Health
2. Health Geoinformatics
3. Environmental Epidemiology

### ENVIRONMENTAL AND OCCUPATIONAL HEALTH—M.P.H.

SAMUEL SORET, Program Director

The Department of Environmental and Occupational Health builds upon students' academic foundation in the sciences to prepare them to meet the growing employment market for environmental health specialists, industrial hygienists, geographic information system specialists, and other professions that examine human-environment interactions.

The M.P.H. degree in environmental and occupational health is designed for individuals with professional practitioner career objectives in the area of environmental and occupational health. Students who complete this curriculum will acquire the professional and scientific skills to perform as environmental quality control professionals in local, state, or federal government health departments/agencies; and in private business/industry. The program has been approved by the State of California Environmental Health Specialist Registration Committee, 601 North 7th Street, MS 396, P.O. Box 942732, Sacramento, CA 94234-7320. Satisfactory completion of this curriculum meets, in part, the eligibility requirements to sit for the registered environmental healthspecialist (REHS) examination administered by the California Department of Public Health. Satisfactory performance on the examination qualifies individuals for practice as registered environmental health specialists in California and, by reciprocity, in the forty-nine remaining states.

Admission into the M.P.H degree curriculum is considered for individuals who can provide verification of at least two years of applicable environmental health experience (with preference given to applicants who are registered environmental health specialists); or for students without previous professional experience but with a solid science background.

#### Learner outcomes

Upon completion of the degree, the graduate should be able to:

1. Describe the health effects of major environmental and occupational agents.
2. Apply the principles of risk assessment to determine the impact of environmental and occupational hazards on human health.
3. Recommend appropriate policy and interventions, such as engineering controls, behavior change, or material substitution necessary for reducing human exposures to environmental and occupational hazards.
4. Interpret federal and state regulations and participate in the development of policies that will influence overall environmental and occupational health outcomes.
5. Communicate effectively the synergistic relationship between environmental and public health issues to a variety of audiences.
6. Conduct sampling programs and interpret environmental analytical data.
7. Demonstrate basic familiarity with geospatial information systems technologies and methods in support of environmental health practice.

## Indicators of educational effectiveness

Performance-based outcomes are obtained through course written and oral examinations, papers, oral presentations, a department comprehensive examination, a culminating activity, and a field internship. In addition, students must take an integrated capstone public health course. Concentration-specific performance indicators are listed below under each concentration. Qualified candidates also take the California registered environmental health specialist (REHS) examination.

## Prerequisite

The following prerequisite courses must be completed prior to enrolling in the registered environmental health specialist programs in environmental health:

- Biological science with laboratory (one year)
- General chemistry with laboratory (one year)
- General physics with laboratory (one year)
- Calculus or college algebra (one course)

## Corequisite

- General microbiology with laboratory (one course)
- Organic chemistry with laboratory (minimum of two-quarter sequence)
- These courses must be taken during the first two quarters of the program, in addition to units required for the degree

Public health core		MPH		
		MPH	with GIS	
NUTR 509	Public Health Nutrition and Biology (3.0)	Choose one course	3.0	3.0
NUTR 510	Advanced Public Health Nutrition (3.0)			
ENVH 586	Environmental Health Administration	3.0	3.0	
EPDM 509	Principles of Epidemiology I	3.0	3.0	
GLBH 524	Cultural Competence and Health Disparities	2.0	2.0	
HPRO 509	Principles of Health Behavior	3.0	3.0	
HPRO 536	Program Planning and Evaluation	2.0	2.0	
PHCJ 605	Overview of Public Health	1.0	1.0	
PHCJ 675	Integrated Public Health Capstone	2.0	2.0	
RELE 534	Ethical Issues in Public Health	3.0	3.0	
STAT 509	General Statistics	4.0	4.0	
		Totals	26.0	26.0

<b>Major</b>			<b>MPH with GIS</b>	
ENVH 515	Food Quality Assurance	Not required for experienced Environmental Health Professionals	3.0	3.0
ENVH 567	Hazardous Materials and Solid-waste Management		3.0	3.0
ENVH 568	Water Quality Assurance		3.0	3.0
ENVH 569	Environmental Sampling and Analysis	Not required for experienced Environmental Health Professionals	4.0	4.0
ENVH 581	Principles of Industrial Hygiene		3.0	3.0
ENVH 587	Environmental Toxicology		3.0	3.0
ENVH 589	Environmental Risk Assessment		3.0	3.0
ENVH 605	Seminar in Environmental and Occupational Health		1.0	1.0
ENVH 566	Outdoor Air Quality and Human Health (3.0)	Choose one course	3.0	3.0
ENVH 575	Indoor Air Quality (3.0)			
Totals			19.0-26.0	19.0-26.0

<b>Geoinformatics</b>			<b>MPH with GIS</b>	
ENVH 521	Cartography and Map Design			2.0
ENVH 522	Principles of Geographic Information Systems and Science			3.0
ENVH 524	GIS Software Applications and Methods		3.0	3.0
ENVH 526	Seminar in Geographic Information Systems			1.0
ENVH 535	Integration of Geospatial Data in GIS			2.0
ENVH 536	Spatial Analytic Techniques and GIS			3.0
ENVH 539	GIS Applications in Environmental Health		2.0	2.0
Totals			5.0	16.0

<b>Electives</b>			<b>MPH with GIS</b>	
Choose in consultation with advisor				
____	Elective	Experienced Environmental Health professionals required to take 9 units, all other students required to take 2 units	2.0-9.0	
Totals			2.0-9.0	—

<b>Field experience</b>			<b>MPH with GIS</b>	
Practicum units are in addition to the minimum graduate units required for the degree.				
ENVH 798B	Field Practicum		12.0	12.0
Totals			—	—
<b>Overall Totals</b>			<b>59.0</b>	<b>61.0-68.0</b>

### Field practicum

Each student is required to complete a total of 400 hours.

Field practicum hours for M.P.H. degree students can be completed through the Peace Corps Master's International Program/Master of Public Health degree.

### **Culminating activity**

A formal, oral presentation and a written paper on a topic of current environmental health importance are required as a culminating activity. Student presentations and paper are evaluated on professionalism, scientific merit, and thoroughness. The culminating activity shall include a comprehensive examination (prior to the field experience), field experience (upon completion of essential major course work), professional portfolio (upon completion of the field experience), full written report of project (not later than one month after successful oral presentation), and an exit interview with the department chair (at the conclusion of the program).

Students who do not meet standards of performance in the culminating activity are subject to remedial course work to address deficiencies in preparation.

### **Comprehensive examination**

Students must satisfactorily complete a departmental comprehensive examination prior to graduation. The examination will allow students to demonstrate their ability to integrate and apply skills and knowledge expected of master's-level environmental health practitioners.

### **Concentrations**

Students choosing a concentration must complete all academic requirements specified above, including course work, field practicum, culminating activity, and comprehensive examination.

## **ENVIRONMENTAL HEALTH AND GEOINFORMATICS**

Seth Wiafe, Program Director

A concentration in environmental health and geoinformatics can be pursued by individuals who desire to integrate training in modern geotechnologies and related methods into their environmental health studies. Geospatial Information Systems (GIS) skills are highly desired today as an integral part of the informatics competencies that are required of public health professionals as outlined in the 2002 Institute of Medicine Report and in the CDC's National Agenda for Public Health Informatics. Acquiring dual skills in public health and geoinformatics enhances the preparation of environmental health professionals by expanding their decision-making and problem-solving ability. The department is a national leader in health geoinformatics, and it possesses a world-class GIS laboratory where students can access state-of-the-art geotechnological tools and a multitude of geospatial databases. Students are encouraged to take advantage of the Health Geoinformatics Summer Institute offered from June to September to conveniently complete some or all required GIS courses in an intensive format.

### **Prerequisite**

Students must have completed the program prerequisite courses prior to enrolling, as listed under the Environmental and Occupational Health Program. Demonstration of computer proficiency, although without previous experience with GIS technology, is required. Advanced placement can be considered for students with previous GIS experience or training.

Each student must work on a field experience in which geospatial technology and methods are applied to a problem or issue in environmental health.

## **ENVIRONMENTAL EPIDEMIOLOGY**

This concentration, administered jointly by the Environmental and Occupational Health and the Epidemiology departments, is designed for persons with special interest in studying how environmental

factors affect health and disease. Students in this specialization gain the epidemiologic skills necessary to conduct research, as well as to meet the eligibility requirements to sit for the registered environmental health specialist examination.

For more information, please refer to the Epidemiology Department concentration section.

**Individuals who may benefit**

The department builds upon students' existing foundation in the sciences to prepare them to meet the growing employment market for environmental health specialists, industrial hygienists, environmental epidemiologists, geoinformatics specialists, and other professions that examine human environment interactions. In varying degrees of depth, courses and laboratories provide training in the anticipation, recognition, evaluation, and control of health hazards in places of employment and communities. Graduates of this program are prepared to secure rewarding careers in government, industry, and the private sector.

# Epidemiology—PH

M.P.H., Dr.P.H., Ph.D.

W. LAWRENCE BEESON, Interim Chair

## FACULTY

W. Lawrence Beeson

Terrence L. Butler

John P. Carney

Jacqueline Chan

Gary E. Fraser

Jayakaran S. Job

Fatemeh Kiani

Raymond Knutsen

Synnove M. F. Knutsen

Vichuda Matthews

John W. Morgan

Tricia Penniecook

Warren R. Peters

Thomas J. Prendergast, Jr.

Joan Sabaté

Pramil N. Singh

Donna Thorpe

Loretta J. Wilber

## EPIDEMIOLOGY—M.P.H.

W. LAWRENCE BEESON, Program Director

The program leading to an M.P.H. degree in epidemiology provides theoretical and practical training applicable to a variety of public health problems. Seven concentrations (each with a different focus) are offered by the program. Each concentration is designed to meet a particular professional need.

### Learner outcomes

Upon completion of this program, the graduate should be able to:

1. Collaborate with or serve as a research consultant to health professionals.
2. Conduct high-quality epidemiologic research, including appropriate design, data collection, statistical analyses, and interpretation and reporting of results.
3. Be familiar with disease surveillance as practiced in state, county, and national health agencies/ departments.
4. Critically review the health literature and identify strengths and weaknesses of design, analyses, and conclusions.

## Program educational effectiveness indicators

- Culmination activity: oral examination, oral presentation of applied research using PowerPoint, and written report of applied research
- Term papers
- Final examinations
- Course evaluation forms

## Prerequisite

- Calculus (one course)
- Behavioral science (one course)
- Additional prerequisites specific to chosen concentration

## Concentrations

### Environmental Epidemiology

This concentration, administered jointly by the Environmental and Occupational Health and the Epidemiology departments, is designed for persons with special interest in studying how environmental factors affect health and disease. Students in this specialization gain the epidemiologic skills necessary to conduct research, as well as to meet the eligibility requirements to sit for the registered environmental health specialist examination.

### *Concentration-specific prerequisites in addition to degree prerequisites*

- Biological science with laboratory (one year; preferred courses include histology, pathology, physiology, etc.)
- General chemistry with laboratory (one year)
- Organic chemistry with laboratory (two-quarter sequence minimum)
- General microbiology with laboratory (one course)
- Physics (one year)

### *Corequisite*

- Biochemistry

### *EPDM/STAT forums*

Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

### *Culminating activity*

In order to obtain a degree, the student is required to successfully complete the culminating activity as required by the Department of Epidemiology and Biostatistics and the Department of Environmental and Occupational Health.

The culminating activity consists of research, including a written report and oral presentation; professional portfolio (upon completion of the research); and an exit interview with the department chairs (at the conclusion of the program).

### **Health Services Research**

This concentration is administered jointly by the Department of Health Policy and Management and the Department of Epidemiology and Biostatistics. It is designed for persons interested in areas that include assessment of health care organization and maintenance. Students gain the skills needed for health services administration and epidemiologic research in the health organization setting.

#### *Concentration-specific prerequisites in addition to degree prerequisites*

- Two courses in biological science (preferred courses include anatomy, physiology, pathology, microbiology, etc.

#### *Corequisite*

- Upper division accounting or HADM 507 Principles of Financial Accounting

#### *Professional membership*

Students are required to secure and maintain membership in an approved professional society, such as the American College of Healthcare Executives.

#### *Health administration colloquia*

Participation in a minimum of ten noncredit colloquia is required. This is designed to acquaint students with various aspects of the health care industry.

#### *EPDM/STAT forums*

Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

#### *Culminating activity*

In order to obtain a degree, the student is required to successfully complete the culminating activity as required by the Department of Epidemiology and Biostatistics and the Department of Health Administration.

The culminating activity consists of research, including a written report and oral presentation; professional portfolio (upon completion of the research); and an exit interview with the department chairs (at the conclusion of the program).

### **Medical Epidemiology**

This concentration is designed for persons with a health professions background who wish to conduct or participate in research related to their health profession. An adequate background in biological science is assumed, with courses concentrating on epidemiology and statistics. One variant within this specialization provides a greater emphasis on research and may allow students to complete a moderate-size project with publication potential.

***Concentration-specific prerequisite in addition to prerequisites required for the degree***

License to practice a health profession in the United States or the country of usual residence

***EPDM/STAT forums***

Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

***Culminating activity***

The culminating activity consists of research, including a written report and oral presentation; professional portfolio (upon completion of the research); and an exit interview with the department chair (at the conclusion of the program).

**Nutritional Epidemiology**

This concentration is administered jointly by the Department of Nutrition and the Department of Epidemiology and Biostatistics, and allows the student to study the etiologic role of nutrition in major public health problems. The graduate will be prepared to design, implement, and evaluate population and intervention studies dealing with the relation of nutrition to health, aging, and chronic and infectious disease. This program is for the individual who is interested in quantitative methods and desires to apply them to nutritional research.

***Concentration-specific prerequisites in addition to prerequisites required for the degree***

- Chemistry through organic (at least 5 quarter units of organic)
- Microbiology with laboratory (one course)
- Anatomy and physiology (one course or course sequence)

***Corequisite***

- NUTR 504 Nutritional Metabolism (advanced biochemistry) (5)

***Research and forums***

Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

***Culminating activity***

In order to obtain a degree, the student is required to successfully complete the culminating activity as required by the Department of Epidemiology and Biostatistics and the Department of Nutrition.

The culminating activity consists of research, including a written report and oral presentation; professional portfolio (upon completion of the research); and an exit interview with the department chairs at the conclusion of the program.

**Research Epidemiology**

This concentration is designed for persons interested in a career studying the relationship of risk factors to a variety of disease outcomes (e.g., the effect of nutrients, inactivity, stress, high blood pressure, environmental exposure, obesity, or immunologic characteristics on heart disease, cancer, osteoporosis, longevity, infectious diseases, reproductive outcome, etc.).

***Concentration-specific prerequisites in addition to prerequisites required for the degree***

At least four of the following courses:

- Anatomy and physiology
- Cancer biology
- Cell biology
- Embryology
- General biology
- Genetics
- Histology\*
- Human anatomy\*
- Human physiology\*
- Immunology
- Microbiology\*
- Molecular biology
- Pathology\*
- Vertebrate anatomy
- Zoology

\*Preferred

***Corequisite***

- Biochemistry (one course)

**Spatial Epidemiology**

This concentration is managed by the Department of Environmental and Occupational Health—the academic home of the school's geoinformatics curricula—and the Department of Epidemiology and Biostatistics, and is designed for students who wish to incorporate innovative spatial analytic techniques in their epidemiological practices and research. The specialization prepares students to apply GIS and other spatial technologies (such as remote GPS and remote sensing) to epidemiology, research, and public health. Acquiring dual skills in epidemiology and GIS enhances the preparation of public health professionals by increasing their decision-making methods and problem-solving ability.

***Degree requirements*****Research and forums**

Students are required to attend a minimum of twenty forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

**Culminating activity**

In order to obtain a degree, the student is required to successfully complete the culminating activity as required by the Department of Epidemiology and Biostatistics. The culminating activity consists of research, including a written report and oral presentation; professional portfolio (upon completion of the research); and an exit interview with the department chairs (at the conclusion of the program).

		Health					
Public health core		Environ Epid	Serv Research	Spatial Epid	Medical Epid	Nutri Epid	Research Epid
ENVH 509	Principles of Environmental Health	3.0	3.0	3.0	3.0	3.0	3.0
ENVH 586	Environmental Health Administration	3.0					
EPDM 509	Principles of Epidemiology I	3.0	3.0	3.0	3.0	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0	2.0	2.0	2.0	2.0	2.0
HADM 509	Principles of Health Policy and Management		3.0	3.0	3.0	3.0	3.0
HPRO 509	Principles of Health Behavior	3.0	3.0	3.0	3.0	3.0	3.0
HPRO 536	Program Planning and Evaluation	2.0	2.0	2.0	2.0	2.0	2.0
NUTR 509	Public Health Nutrition and Biology	3.0	3.0	3.0	3.0	3.0	3.0
PHCJ 605	Overview of Public Health	1.0	1.0	1.0	1.0	1.0	1.0
PHCJ 675	Integrated Public Health Capstone	2.0	2.0	2.0	2.0	2.0	2.0
RELE 534	Ethical Issues in Public Health	3.0	3.0	3.0	3.0	3.0	3.0
STAT 521	Biostatistics I	4.0	4.0	4.0	4.0	4.0	4.0
Totals		29.0	29.0	29.0	29.0	29.0	29.0

		Health					
Major		Environ Epid	Serv Research	Spatial Epid	Medical Epid	Nutri Epid	Research Epid
ENVH 515	Food Quality Assurance	3.0					
ENVH 566	Outdoor Air Quality and Human Health	3.0					
ENVH 567	Hazardous Materials and Solid-waste Management	3.0					
ENVH 568	Water Quality Assurance	3.0					
ENVH 569	Environmental Sampling and Analysis	4.0					
ENVH 587	Environmental Toxicology	3.0					
ENVH 589	Environmental Risk Assessment	3.0					
ENVH 605	Seminar in Environmental and Occupational Health	1.0					
EPDM 510	Principles of Epidemiology II	3.0	3.0	3.0	3.0	3.0	3.0
EPDM 512	Multivariate Modeling in Epidemiology	3.0	1.0	3.0	3.0	3.0	3.0
EPDM 515	Clinical Trials		3.0		3.0	3.0	
EPDM 544	Epidemiology of Infectious Disease	3.0					
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement		3.0				
EPDM 566	Epidemiology of Cardiovascular Disease		3.0				
EPDM 588	Environmental and Occupational Epidemiology	3.0					
EPDM 635A	Epidemiological Studies of Seventh-day Adventists A				1.0		
HADM 528	Organizational Behavior in Health Care		3.0				
HADM 534	Healthcare Law		3.0				
HADM 542	Managerial Accounting for Health Care Organizations		3.0				

HADM 559	Health Care Marketing		3.0					
HADM 564	Health Care Finance		3.0					
HADM 601	Health Systems-Operations Management		3.0					
HADM 604	Health Systems Strategic Planning		3.0					
NUTR 510	Advanced Public Health Nutrition						3.0	
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids						4.0	
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals						4.0	
NUTR 527	Assessment of Nutritional Status						3.0	
NUTR 543	Concepts in Nutritional Epidemiology						3.0	
NUTR 605	Seminar in Nutrition						1.0	
STAT 515	Grant- and Contract-Proposal Writing						3.0	3.0
STAT 522	Biostatistics II		4.0	4.0	4.0	4.0	4.0	4.0
STAT 548	Analytical Applications of SAS		2.0	2.0	2.0	2.0	2.0	2.0
STAT 557	Research Data Management				3.0			3.0
STAT 564	Survey and Advanced Research Methods		3.0	3.0	3.0	3.0	3.0	3.0
EPDM 565	Epidemiology of Cancer (3.0)	Choose one course	3.0	—	3.0	3.0	—	3.0
EPDM 566	Epidemiology of Cardiovascular Disease (3.0)							
EPDM 515	Clinical Trials (3.0)	Choose one course	—	—	3.0	—	—	3.0
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3.0)							
STAT 557	Research Data Management (3.0)	Choose one course	3.0	3.0	3.0	3.0	3.0	3.0
STAT 569	Advanced Data Analysis (3.0)							
EPDM 565	Epidemiology of Cancer (3.0)	Choose one course in consultation with advisor	—	—	—	—	3.0	—
EPDM 566	Epidemiology of Cardiovascular Disease (3.0)							
EPDM 567	Epidemiology of Aging (3.0)							
NUTR 534	Maternal and Child Nutrition (3.0)	Choose one course in consultation with advisor	—	—	—	—	2.0-3.0	—
NUTR 536	Nutrition and Aging (2.0)							
Totals			50.0	46.0	27.0	25.0	47.0-48.0	30.0

		Health					
		Environ	Serv	Spatial	Medical	Nutri	Research
Geoinformatics		Epid	Research	Epid	Epid	Epid	Epid
ENVH 522	Principles of Geographic Information Systems and Science			3.0			
ENVH 524	GIS Software Applications and Methods			3.0			
ENVH 526	Seminar in Geographic Information Systems			1.0			
ENVH 535	Integration of Geospatial Data in GIS			2.0			
ENVH 536	Spatial Analytic Techniques and GIS			3.0			
ENVH 546	Introduction to Spatial Epidemiology			2.0			
Totals		—	—	14.0	—	—	—

			Health					
			Environ	Serv	Spatial	Medical	Nutri	Research
General electives			Epid	Research	Epid	Epid	Epid	Epid
Choose in consultation with advisor								
ENVH 521	Cartography and Map Design (2.0)	Choose one course	2.0-3.0	2.0-3.0	2.0-3.0	2.0-3.0	2.0-3.0	2.0-3.0
ENVH 527	Geospatial Technologies for Emergency Preparedness and Management (3.0)							
ENVH 537	Health Care Geographics (2.0)							
ENVH 539	GIS Applications in Environmental Health (2.0)							
ENVH 547	GIS for Public Health Practice (2.0)							
ENVH 549	Remote Sensing Applications in the Health Services (3.0)							
EPDM 515	Clinical Trials (3.0)							
EPDM 544	Epidemiology of Infectious Disease (3.0)							
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3.0)							

EPDM 567	Epidemiology of Aging (3.0)						
EPDM 588	Environmental and Occupational Epidemiology (3.0)						
STAT 515	Grant- and Contract-Proposal Writing (3.0)						
EPDM 5__	Epidemiology Elective				3.0-4.0		
EPDM 635B	Epidemiological Studies of Seventh-day Adventists B				1.0		
EPDM 5__	Epidemiology Elective						8.0
Totals		6.0-7.0	6.0-7.0	6.0-7.0	6.0-7.0	6.0-7.0	14.0-15.0

### Health

Research project		Health					
		Environ Epid	Serv Research	Spatial Epid	Medical Epid	Nutri Epid	Research Epid
EPDM 699B	Applied Research II	1.0	1.0	1.0			
EPDM 699A	Applied Research	1.0	1.0	1.0	1.0	1.0	1.0
EPDM 699B	Applied Research II					1.0	1.0
Totals		2.0	2.0	2.0	1.0	2.0	2.0

### Field experience

Practicum units are in addition to the minimum graduate units required for the degree.

		Health					
		Environ Epid	Serv Research	Spatial Epid	Medical Epid	Nutri Epid	Research Epid
ENVH 798A	Field Practicum	2.0		2.0			
EPDM 798	Field Practicum 120 clock hours per unit of credit				1.0		2.0
HADM 798A	Health Administration Field Practicum		12.0				
NUTR 798B	Field Practicum					2.0	
Totals		—	—	—	—	—	—
<b>Overall Totals</b>		<b>87.0-88.0</b>	<b>83.0-84.0</b>	<b>78.0-79.0</b>	<b>61.0-62.0</b>	<b>84.0-86.0</b>	<b>75.0-76.0</b>

## EPIDEMIOLOGY—DR.P.H.

W. LAWRENCE BEESON, Program Director

The aim of this program is to prepare Doctor of Public Health degree graduates for career options that include epidemiologic research, teaching, and public health practice. The curriculum is planned on an individual basis. Details depend upon the student's interest and academic needs, the program requirements, and the nature of the proposed research program. Where appropriate to the career interest, the student is expected to gain relevant teaching experience as part of the training. The program ordinarily consists of twelve quarters. At least five of these quarters must be devoted to a research project. Students are responsible for gaining the commitment of an appropriate faculty member to serve as their research mentor.

### **Learning objectives**

Students completing the doctoral program in epidemiology are expected to have attained skills and knowledge in addition to that required for the M.P.H. degree program. These additional learning objectives are enumerated below.

Upon completion of the Dr.P.H. degree, the graduate will be able to independently:

1. Demonstrate knowledge of disease etiology, progression, and prevention as relevant to public health.
2. Identify public health issues and design relevant research proposals using National Institutes of Health (NIH) guidelines.
3. Communicate study results orally and in peer-reviewed publications.
4. Analyze population data, including the evaluation of confounding and interaction.

### **Program educational effectiveness indicators**

- Dissertation
- Comprehensive examination
- Dr.P.H. seminar
- Student assistance

### **Prerequisite**

- Organic chemistry
- Calculus (one course)
- Behavioral science
- Microbiology

### **Corequisite**

- Biochemistry

### **Additional requirements**

All Dr.P.H. degree students are required to register for 1 unit of EPDM 605 Seminar in Epidemiology every Autumn Quarter in which they are students in the epidemiology program. Registration implies attendance and participation in seminar projects during Fall, Winter, and Spring quarters.

### **Forums**

Doctoral students are required to attend a minimum of ten Department of Epidemiology and Biostatistics forums and/or Adventist Health Study forums during each year of their program.

## **EPIDEMIOLOGY—PH.D.**

S. F. KNUTSEN, Program Director

The aim of this program is to prepare doctoral level health professionals or master's degree level nonhealth professionals for a career in research and academia. The curriculum is planned on an individual basis. Details depend upon the student's interest and academic needs, the program requirements, and the nature of the proposed research program. The student is expected to publish one paper and submit two others as part of his/her training. In addition to participating as a teaching assistant and a laboratory assistant, the student will also deliver lectures in courses. The program ordinarily consists of twelve quarters. At least five of these quarters must be devoted to a research project. The student is responsible for gaining the commitment of an appropriate faculty member to serve as his/her research mentor.

### **Learning objectives**

Students completing the Ph.D. degree program in epidemiology are expected to have attained the skills and knowledge necessary to pursue independent academic and research careers. Thus, the graduate of this program will be able to independently:

1. Identify areas requiring biomedical or epidemiologic research and design and conduct appropriate study to address the question.
2. Write grant proposals to obtain funding for research.
3. Select and execute appropriate and valid analyses of data using available statistical software.
4. Write, interpret, and publish results of research conducted; and communicate orally.
5. Develop lectures and teach at the graduate level in his/her area of expertise.

### **Program educational effectiveness indicators**

- Published papers
- Exit survey and interview
- Course evaluations

### **Prerequisite**

Doctoral level health professional degree

or

Master's degree in related field, with documented research experience (such as published or submitted paper) and the following courses: anatomy, physiology, pathology, histology, and microbiology.

### **Corequisite**

(advanced standing from previous M.P.H. degrees will be considered )

- EPDM 509 (or equivalent)
- STAT 521 (or equivalent)
- STAT 548 (or equivalent)
- Biochemistry

### Additional requirements

All Ph.D. degree students are required to register for 1 unit of EPDM 605 Seminar in Epidemiology (1) every Autumn Quarter in which they are students in the epidemiology program. Registration implies attendance and participation in seminar projects during the Autumn, Winter, and Spring quarters.

In order to graduate, the Ph.D. degree candidate must have published one paper in a peer-reviewed journal and submitted two other papers.

### Forums

Doctoral students are required to attend a minimum of ten Department of Epidemiology and Biostatistics forums and/or Adventist Health Study forums during each year of their program.

### Teaching assistant/Laboratory assistant

Ph.D. degree students are required to participate as both teaching assistants and laboratory assistants in both introductory courses and advanced methodological courses. Further, they are expected to obtain experience in lecturing by delivering at least one class lecture during their course.

### Corequisites

May be taken during first two quarters of program, in addition to units required for degree; advanced standing from previous M.P.H. degrees considered

		DrPH	PhD
ENVH 509	Principles of Environmental Health	3.0	
EPDM 509	Principles of Epidemiology I	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0	
HADM 509	Principles of Health Policy and Management	3.0	
HPRO 509	Principles of Health Behavior	3.0	
HPRO 536	Program Planning and Evaluation	2.0	
NUTR 509	Public Health Nutrition and Biology	3.0	
PHCJ 605	Overview of Public Health	1.0	
STAT 521	Biostatistics I		4.0
STAT 548	Analytical Applications of SAS		2.0
Totals		—	—

### Epidemiologic methods

		DrPH	PhD
EPDM 510	Principles of Epidemiology II	3.0	3.0
EPDM 512	Multivariate Modeling in Epidemiology	3.0	3.0
EPDM 515	Clinical Trials	3.0	3.0
STAT 515	Grant- and Contract-Proposal Writing	3.0	3.0
STAT 521	Biostatistics I	4.0	
STAT 522	Biostatistics II	4.0	4.0
STAT 548	Analytical Applications of SAS	2.0	
STAT 557	Research Data Management		3.0
STAT 564	Survey and Advanced Research Methods	3.0	3.0
STAT 569	Advanced Data Analysis	3.0	

EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3.0)	Choose 10 units	10.0	—
EPDM 568	International Epidemiology (2.0)			
HPRO 543	Writing for Health Professionals (2.0)			
NUTR 543	Concepts in Nutritional Epidemiology (3.0)			
STAT 523	Biostatistics III (4.0)			
STAT 525	Applied Multivariate Analysis (3.0)			
STAT 535	Introduction to Modern Nonparametric Statistics (3.0)			
STAT 538	Probability and Statistical Theory I (3.0)			
STAT 539	Probability and Statistical Theory II (3.0)			
STAT 545	Survival Analysis (3.0)			
STAT 557	Research Data Management (3.0)			
Totals			38.0	22.0

**Descriptive epidemiology****DrPH****PhD**

EPDM 534	Epidemiology of Maternal-Child Health (3.0)	Choose 9 units	12.0	9.0
EPDM 544	Epidemiology of Infectious Disease (3.0)			
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3.0)			
EPDM 565	Epidemiology of Cancer (3.0)			
EPDM 566	Epidemiology of Cardiovascular Disease (3.0)			
EPDM 567	Epidemiology of Aging (3.0)			
EPDM 588	Environmental and Occupational Epidemiology (3.0)			
EPDM 625	Special Topics in Epidemiology (1.0-3.0)			
EPDM 635A	Epidemiological Studies of Seventh-day Adventists A (1.0)			
EPDM 635B	Epidemiological Studies of Seventh-day Adventists B (1.0)			
STAT 625	Special Topics in Biostatistics (1.0-3.0)			
Totals				

**Biomedical sciences****DrPH****PhD**

HPRO 501	Human Anatomy and Physiology I	6.0	
HPRO 502	Human Anatomy and Physiology II	6.0	
HPRO 503	Human Anatomy and Physiology III	4.0	
HPRO 531	Pathology of Human Systems I	3.0	
HPRO 532	Pathology of Human Systems II	3.0	
NUTR 509	Public Health Nutrition and Biology	3.0	
Totals		25.0	—

**Administration and leadership**

			<b>DrPH</b>	<b>PhD</b>
HADM 510	Health Policy Analysis and Synthesis (3.0)	Choose 6 units	6.0	—
HADM 514	Health Care Economic Policy (3.0)			
HADM 528	Organizational Behavior in Health Care (3.0)			
HADM 542	Managerial Accounting for Health Care Organizations (3.0)			
HADM 604	Health Systems Strategic Planning (3.0)			
Totals			6.0	—

**Religion**

			<b>DrPH</b>	<b>PhD</b>
RELE 5__	Graduate-level Ethics		3.0	
RELR 5__	Graduate-level Relational		3.0	3.0
RELT 5__	Graduate-level Theological		3.0	
RELE 525	Ethics for Scientists (3.0)	Choose one course	—	—
RELE 534	Ethical Issues in Public Health (3.0)			
RELT 615	Seminar in Philosophy of Religion (3.0)	Choose one course	—	—
RELT 617	Seminar in Religion and the Sciences (3.0)			
Totals			9.0	3.0

**Other required courses**

			<b>DrPH</b>	<b>PhD</b>
EPDM 605	Seminar in Epidemiology (1.0)	1 unit per year in program, minimum of 3 units		3.0
PHCJ 605	Overview of Public Health			1.0
Totals			—	4.0

**Cognates**

Three courses in any one public health discipline (ENVH, GIS, GLBH, HADM, HPRO, NUTR, STAT).

May also choose three courses from another LLU school in consultation with advisor.

			<b>DrPH</b>	<b>PhD</b>
___ __	Elective			9.0
Totals			—	—

**Electives**

			<b>DrPH</b>	<b>PhD</b>
___ __	Elective	May be chosen from another institution, in consultation with advisor	8.0	
Totals			8.0	—

**Research and dissertation**

			<b>DrPH</b>	<b>PhD</b>
EPDM 685	Preliminary Research Experience		2.0	2.0
EPDM 694	Research (1.0-14.0)		5.0	11.0
EPDM 698	Dissertation (1.0-14.0)		12.0	12.0
Totals			19.0	25.0

Other		DrPH	PhD
EPDM 605	Seminar in Epidemiology	3.0	
Totals		3.0	—
<b>Overall Totals</b>		<b>120.0</b>	<b>78.0</b>

### Other requirements

The student must attend a minimum of twenty department forums per year in the program.

Both the Dr.P.H. and the Ph.D. degrees require that the student work with a faculty member to publish one paper (or have published a paper on his/her own before acceptance) in addition to the research requirements for the degree. This requirement could be part of the preliminary research experience.

The Dr.P.H. degree requires two papers submitted to a peer-reviewed journal, and the student must respond to reviewers' comments on one of them. The student is first author on both papers.

The Ph.D. degree requires three papers submitted to a peer-reviewed journal—one of which must be published (or accepted for publication), and the student must have responded to reviewers' comments on the other two papers. The student is first author on all three papers.

## Global Health—PH

M.P.H., Dr.P.H.

JAYAKARAN S. JOB, Chair

### FACULTY

Juan Carlos Belliard

Jesse Bliss

David T. Dyjack

Donald Gaede

Thelma Gamboa-Maldonado

Bradley Jamison

Eddy Jara

Nellie León

Ronald H. Mataya

Susanne B. Montgomery

Ehren Ngo

Sharon Rushing

Ryan Sinclair

Pramil N. Singh

Ann Stromberg

Seth Wiafe

### GLOBAL HEALTH—M.P.H.

NELLIE LEÓN and EDDY JARA, Program Directors

#### Program description

The Department of Global Health (GLBH) prepares committed professionals who are both technically competent and cross-culturally skilled in creating and facilitating sustainable health and development programs in diverse settings and populations. Utilizing an experiential, evidence-based model of learning, this program enables graduates to contribute to a better quality of life for all people—especially those who are vulnerable, underserved, marginalized, and disadvantaged. The department's extensive network of global and local resources affords a broad spectrum of options for students to learn and practice the "art and science" of this exciting discipline.

The M.P.H. degree in global health prepares career professionals who qualify for entry-level positions in nongovernmental organizations; faith-based and other voluntary agencies; community-based organizations; county, state, and national health departments; private foundations; public health practice organizations; and in the nonprofit, relief-and-development sector. Graduates also find positions in government and transnational organizations, such as the World Health Organization, UNICEF, the World Bank, Centers for Disease Control and Prevention; and in national assistance organizations like the United States Agency for International Development. Further academic training is also an option for graduates interested in teaching and research. Graduates with field experience (including students who add the global health M.P.H. degree to a previous clinical or academic degree) will qualify for managerial positions in program planning and evaluation, contracting, technical assistance, grant writing, and advocacy.

## Learner outcomes

Utilizing an experiential approach, the competency-based curriculum is built around three themes:

1. Developing and maintaining a sustainable healthy environment;
2. Supporting and empowering communities, families, and individuals; and
3. Advocating for vulnerable populations.

By the end of the program, graduates are expected to demonstrate competency in:

1. Assessing capacity, systems, services, needs, and resources.
2. Developing comprehensive, integrated interventions.
3. Planning, implementing, maintaining, and evaluating community-based programs.
4. Promoting collaborations among sectors, disciplines, countries, and regions.
5. Advocating for social justice, equity, and access to health and other services that contribute to individual and community well-being.
6. Contributing to operational and/or translational research.

## Educational effectiveness

Educational effectiveness will be determined through reading assignments and reports, research papers, oral presentations, group work on proposals, community engagement projects and research, laboratory exercises, case studies, tests, quizzes, field practicum, and exit interview.

## Corequisite

- Anatomy and physiology
- Microbiology

(May be taken concurrently during the first two quarters of the program, in addition to units required for the degree)

## Units required

The total minimum units required is 56 (including culminating experience), in addition to the field practicum units (variable).

## Global Epidemiology specialization

PRAMIL N. SINGH, Director

### Program description

In schools of public health, a traditional domain of the M.P.H. degree in epidemiology has been the training in population-based survey research. Three recent trends in population health are noteworthy: 1) the emergence of multinational survey research teams working in the environments of academia (i.e., Fogarty/NIH model of universities in high-income and low-income regions collaborating), nongovernmental organizations, and policy institutes; 2) the emergence of a chronic disease epidemic in developing regions in which public health in such nations as India and China is facing the challenge of obesity co-existing with malnutrition; and 3) the need for valid survey data from large samples for immediate use in program planning and health policy relative to exposure and disease. In light of these

global trends, the global epidemiology M.P.H. degree student will complete the same formal training in epidemiologic research methods as other epidemiology majors—but will integrate this training with the global health knowledge base, specific global health skills (qualitative research methods, alternative sampling strategies, alternative survey design approaches, and spatial data analysis), and global health worldview. The training will enable graduates to plan, design, and implement surveys of hard-to-access, vulnerable populations in global and community-based settings. After the first year of intensive course work on the core knowledge and skills of global health and epidemiology, the global epidemiology major will be engaged in a summer of integrated community development, research, and field practicum activities in community and/or global settings.

This specialization is designed to educate global health professionals who will be capable of:

1. Planning, designing, and implementing epidemiologic studies that serve research and program planning needs in global and community settings.
2. Planning, designing, and implementing a "mixed methods" (quantitative and qualitative components) study that serves research and program planning needs in global and community settings.
3. Analyzing and interpreting data from a wide range of methodologies (quantitative, qualitative, GIS) to serve research, program planning, and health policy initiatives in global and community settings.
4. Incorporating the knowledge base (i.e., primary health care, health disparities, millennium development goals, culture/behavior-social context of health, child health and survival, public health systems and government micro-enterprise/poverty alleviation/social economics, complex health emergencies and preparedness, nutrition and food security, health education, injury/violence prevention and control), skills, and world view of global health training into their planning, design, and implementation of epidemiologic studies.
5. Writing grant proposals to fund global epidemiology and global health research and programs.

### **Educational effectiveness**

Educational effectiveness will be determined through reading assignments and reports, research papers, oral presentations, group work on proposals, community engagement projects and research, laboratory exercises, case studies, tests, quizzes, field practicum, and exit interview.

### **Corequisite**

- Microbiology
- Anatomy and physiology
- College calculus

(May be taken concurrently during the first two quarters of the program, in addition to units required for the degree)

### **Units**

Total minimum required units 74 units (including Field Practicum).

**Individuals who may benefit from this program**

The program is best suited to students who meet the admissions requirements of epidemiology and global health departments and are specifically interested in conducting epidemiologic studies in global and community settings. In addition, this specialization will be appropriate for students from diverse cultural backgrounds, with a keen interest in working in careers that serve the research and program planning needs of their global communities.

**Research and field practicum**

The global epidemiology specialization has designated international sites where faculty have active projects (funded by grants, by collaboration with NGO). These sites have been chosen as research and field practicum sites for the global epidemiology majors due to the availability of data and in-country supervision of activities. During the first two quarters of enrollment, students should meet with the program director to obtain approval for the site and topic of their EPDM 699 and GLBH 699 course work. A practical option is to choose to complete the on-site activities of GLBH 545, EPDM 699, and GLBH 699 at the same site or at sites within the same region.

**Research (EPDM 699 and GLBH 699)**

This comprehensive, research-based project typically requires at least six weeks of continuous engagement in a global community setting. The on-site research objectives will be met by students completing an epidemiology research project in the global community setting under the mentorship of faculty from global health and epidemiology.

**Field practicum**

Students will complete a field practicum in a global community setting that partners them with an organization outside the University (governmental, nongovernmental, community-based partnership, humanitarian assistance). This experience will provide students an opportunity to actively participate in and observe the organization's practice of global epidemiology. Since the field activities of GLBH 545 and EPDM 699/GLBH 699 often include collaboration with external organizations (i.e., NGO, government ministries) a practical option is for a student to remain onsite after these activities and work on a field practicum.

**Global Maternal and Child Health specialization**

RONALD H. MATAYA, Director

**Description**

In its comprehensive definition, the term maternal and child health (MCH), a major subfield of public health, encompasses women, infants, children of all ages, adolescents, and families (Association of Teachers in Maternal and Child Health 2001). Therefore, the goal of MCH programs is to improve the health of women, children, adolescents, and families. Against the backdrop of the Healthy People 2010 document, which highlights the importance of their health, this goal emerges out of a clear recognition that women and children are the most vulnerable, least powerful and often neglected members of societies around the world; that women and children form a major segment of the population, particularly in developing countries; that the health of mothers and children is closely interrelated; that a significant part of MCH morbidity, disability, and mortality stems from preventable causes; and that women, infants, children of all ages, adolescents, and families deserve special services in order to assure their future health and development and that of the communities in which they live.

Building on its strong foundation of knowledge, skills, and worldview of community health and development, the Global Health Department will incorporate the recommended competencies throughout the two-year MCH curriculum. The program will utilize family and community-centered interdisciplinary approaches with special emphases on cultural competency and empowerment. Graduates of this program will be able to effectively apply their MCH skills and knowledge both in the developed and developing world context.

This concentration is designed to educate global public health professionals who will be capable of:

1. Planning, implementing, monitoring, and evaluating maternal and child health programs nationally and globally.
2. Understanding, promoting, developing, and applying national and international health policies and programs that impact maternal and child health issues.
3. Advocating for public health policies and programs to improve maternal and child health.
4. Writing grant proposals to fund maternal and child health programs locally and internationally.
5. Preparing behavioral change communications materials in maternal and child health.
6. Conducting research on maternal and child health.

### **Educational effectiveness**

Educational effectiveness will be determined through reading assignments and reports, research papers, oral presentations, group work on proposals, community engagement projects and research, laboratory exercises, case studies, tests, quizzes, field practicum, and exit interview.

### **Corequisite**

- Anatomy and physiology
- Microbiology

(May be taken concurrently during the first two quarters of the program, in addition to units required for the degree)

### **Units**

Total minimum required units—74 units (including culminating experience) plus field practicum units (variable).

### **Individuals who may benefit from the program**

The program is best suited for students who have had two or more years of public health practice and have specific interest in maternal and child health. In addition, this specialization will be appropriate for global health students from diverse cultural backgrounds who have a keen interest in working within their communities to improve the health of mothers and children.

Public health core		Global	Global	Matrnl
		Health	Epid	Child Health
ENVH 509	Principles of Environmental Health	3.0	3.0	3.0
EPDM 509	Principles of Epidemiology I	3.0	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0	2.0	2.0
HADM 509	Principles of Health Policy and Management	3.0	3.0	3.0
HPRO 509	Principles of Health Behavior	3.0	3.0	3.0
NUTR 509	Public Health Nutrition and Biology	3.0	3.0	3.0
PHCJ 605	Overview of Public Health	1.0	1.0	1.0
PHCJ 675	Integrated Public Health Capstone	2.0	2.0	2.0
RELE 534	Ethical Issues in Public Health	3.0	3.0	3.0
STAT 509	General Statistics			4.0
STAT 521	Biostatistics I		4.0	
STAT 509	General Statistics (4.0)	Choose one course	4.0	—
STAT 521	Biostatistics I (4.0)			
Totals		27.0	27.0	27.0

Major		Global	Global	Matrnl
		Health	Epid	Child Health
EPDM 510	Principles of Epidemiology II		3.0	
EPDM 512	Multivariate Modeling in Epidemiology (1.0-3.0)		1.0	
		1 unit required; additional 2 units may be taken as electives		
EPDM 534	Epidemiology of Maternal-Child Health			3.0
EPDM 568	International Epidemiology		2.0	
EPDM 699A	Applied Research		1.0	
EPDM 699B	Applied Research II		1.0	
GLBH 516	HIV/AIDS: Implications for Public Health			3.0
GLBH 545	Integrated Community Development	4.0	4.0	4.0
		This field-based course involves international travel and fulfillment of required pre-requisites. A separate laboratory fee must be paid at the time of registration into this course (subject to change, if needed).		
GLBH 550	Women in Development			3.0
GLBH 564	Fundamentals of Community Health and Development I	2.0	2.0	2.0
GLBH 565	Interventions in Community Health and Development I	3.0	3.0	3.0
GLBH 566	Fundamentals of Community Health and Development II	2.0	2.0	2.0
GLBH 567	Interventions in Community Health and Development II	3.0	3.0	3.0
GLBH 568	Fundamentals of Community Health and Development III	2.0	2.0	2.0
GLBH 569	Interventions in Community Health and Development III	3.0	3.0	3.0
GLBH 584	Special Topics in Global Health			1.0
GLBH 605	Seminar in Global Health	1.0	1.0	1.0

GLBH 699	Applied Research in Global Health		2.0	
HPRO 523	Maternal/Child Health: Policy and Programs			3.0
HPRO 567	Reproductive Health			3.0
HPRO 589	Qualitative Research Methods			3.0
HPRO 614	Seminar in Maternal and Child Health Practice			2.0
NUTR 534	Maternal and Child Nutrition			3.0
STAT 515	Grant- and Contract-Proposal Writing	3.0	3.0	3.0
STAT 522	Biostatistics II		4.0	
STAT 548	Analytical Applications of SAS		2.0	
Totals		23.0	39.0	47.0

<b>Electives in descriptive epidemiology</b>			<b>Global Health</b>	<b>Global Epid</b>	<b>Matrnl Child Health</b>
EPDM 534	Epidemiology of Maternal-Child Health (3.0)	Choose one course	—	3.0	—
EPDM 544	Epidemiology of Infectious Disease (3.0)				
EPDM 565	Epidemiology of Cancer (3.0)				
EPDM 566	Epidemiology of Cardiovascular Disease (3.0)				
EPDM 588	Environmental and Occupational Epidemiology (3.0)				
GLBH 544	Epidemiology of Infectious Disease (3.0)				
GLBH 561	Epidemiology of Tobacco Use and Control I (3.0)				
GLBH 562	Epidemiology of Tobacco Use and Control II (3.0)				
NUTR 543	Concepts in Nutritional Epidemiology (3.0)				
Totals			—	3.0	—

<b>Electives in global epidemiology</b>			<b>Global Health</b>	<b>Global Epid</b>	<b>Matrnl Child Health</b>
ENVH 522	Principles of Geographic Information Systems and Science (3.0)	Choose 5 units	—	5.0	—
ENVH 524	GIS Software Applications and Methods (3.0)				
EPDM 512	Multivariate Modeling in Epidemiology (1.0) <i>1 unit required; additional 2 units may be taken as electives.</i>				
HPRO 589	Qualitative Research Methods (3.0)				
Totals			—	5.0	—

Electives in global health			Global	Global	Matrnl	
			Health	Epid	Child Health	
GLBH 514	Ethnographic Methods in Public Health (3.0)	Choose a minimum of 6 units	6.0	—	—	
GLBH 516	HIV/AIDS: Implications for Public Health (3.0)					
GLBH 517	Dynamics of Culture and Health (3.0)					
GLBH 519	Principles of Disaster Management I (3.0)					
GLBH 520	Principles of Disaster Management II (3.0)					
GLBH 521	Principles of Disaster Management III (3.0)					
GLBH 544	Epidemiology of Infectious Disease (3.0)					
GLBH 547	Refugee and Displaced Population Health (3.0)					
GLBH 548	Violence and Terrorism Issues (3.0)					
GLBH 550	Women in Development (3.0)					
GLBH 555	Technology in Emergency Management (3.0)					
GLBH 556	Community Data Analysis for Sustainable Development (3.0)					
GLBH 557	Epidemiology of Disasters (3.0)					
GLBH 558	Public Health Issues in Emergencies (3.0)					
GLBH 559	Psychosocial Models and Interventions (3.0)					
GLBH 560	Economic, Legal, and Policy Issues in Disasters (3.0)					
GLBH 561	Epidemiology of Tobacco Use and Control I (3.0)					
GLBH 562	Epidemiology of Tobacco Use and Control II (3.0)					
Totals			6.0	—	—	

<b>Practicum</b>			<b>Global</b>	<b>Global</b>	<b>Matrnl</b>
Practicum units are in addition to the minimum graduate units required for the degree			<b>Health</b>	<b>Epid</b>	<b>Child</b>
					<b>Health</b>
GLBH 699	Applied Research in Global Health (2.0-4.0)	Choose one option	—	—	—
GLBH 796	Internship (12.0)				
GLBH 797	MIP Residency in Global Health (12.0)				
GLBH 798	Culminating Activity/Field Practicum (12.0)				
Totals			—	—	—
<b>Overall Totals</b>			<b>56.0</b>	<b>74.0</b>	<b>74.0</b>

### Culminating experience

The following requirements comprise the culminating experience for the M.P.H. degree in global health:

1. Field practicum report

All students complete a written report of their approved field practicum, using a standardized format (as provided in the department's student handbook). The format includes a description of the program setting/agency; a review of literature of the public health issue addressed; and specific objectives, methods, results, and discussion (plus references and appendices). A section is devoted to the student's critical evaluation of the field experience. Documentation also includes a reference from the student's field supervisor/mentor. The final document is reviewed and approved by the student's faculty advisor and a second designated reader before being accepted by the department as fulfilling the requirement. Additionally, the global epidemiology concentration requires an oral presentation of research findings at either the GLBH or EPDM seminar.

2. Portfolio

The professional portfolio enables students to prepare and collect evidence of content knowledge, skills, and worldview used to support learning activities. It also serves as evidence presented to potential employers of the skills and capacities that students have developed while in the program.

3. Exit interview

This interview covers a range of questions from the University, school, and department perspectives aimed at learning about the students' academic experience and at ascertaining students' future directions.

4. Two courses are also considered part of the culminating experience: PHCJ 675 Integrated Public Health Capstone and GLBH 545 Integrated Community Development.

### GLOBAL HEALTH—DR.P.H.

Currently closed for enrollment.

# Health Care Administration—PH

M.B.A.

## TEACHING FACULTY

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S. Eric Anderson

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Dora Barilla

Lynna S. Belin

Jere Chrispens

Eileen Fry-Bowers

Meng-Jin Johnathan Goh

David L. Holt

Brad A. Jamison

Renate Krause

Dave Lawrence

Susan Onuma

David S. Penner

Steve Serrao

Shirley Simmons

Jonathan Zirkle

## FACULTY

Jane E. Adams

Dwight Barrett

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Renee L. Hills

Paul A. Hisada

Troy A. Holmes  
Michael H. Jackson  
David J. Kinsey  
Gregory Kono  
Donald Kurth  
James Kyle  
Karl J. McCleary  
Rafael Molina  
Patricia Murdoch  
LeRoy Nattress  
Donald G. Pursley  
Akankshi Sharma-Arora  
Paul Simms  
Teri S. Tamayose  
David Tejada-de-Rivero  
C. Torben Thomsen  
Abel Torres  
Brian Weed

## **HEALTH CARE ADMINISTRATION—M.B.A.**

STEVE SERRAO, Program Director

### **Description**

The School of Public Health offers a Master of Business Administration (M.B.A.) in health care administration degree. Health professionals who are currently employed and have at least five years professional work experience in health care administration are eligible to waive up to 9 units, as specified, of the M.B.A. program.

The Master of Business Administration (M.B.A.) degree provides students with a broad understanding of health care management in line with appropriate and relevant industry-leading competencies in addition to practical experience in applying the principles learned. Graduates are prepared for administrative careers in health service organizations—including medical centers, health plans, physician group practices and dental practices, and long-term and managed care settings, among others. This degree program provides students with knowledge, skills, and practice necessary to further their administrative career in the health care sector.

### **Learner outcomes**

Upon completion of this degree, the student should be able to:

1. Apply health care knowledge in economic analysis and policy.
2. Understand organizational structure and governance in addition to equitable and effective human resource policies.
3. Apply health care finance and managerial accounting in health care.
4. Incorporate market research towards strategic planning in health care.
5. Employ a wide array of quality improvement processes and tools in health care operations management.
6. Understand technology that supports the practice, research, and decision making in health care.

## **Educational effectiveness**

Educational effectiveness will be determined by research, papers, class presentations, debates, tests, field practicum project/paper, and exit interview.

## **Field practicum**

The Management Associate Practicum (MAP) provides practical training for M.B.A. degree students. It affords students an experiential learning opportunity to develop critical career skills. After a student is accepted into the M.B.A. degree program, the program and placement directors consult with the student to determine the most suitable organization for the MAP placement. Suitability is determined by the student's skill sets and interests, and the organization's resources and requirements.

The completion of the Management Associate Practicum series (cumulative total of 1200 hours) is required for the M.B.A. degree and will be integrated with course work throughout the student's program.

The placement director will work closely with both students and their mentors in monitoring student progress. Students will present their MAP experience to the department faculty and students in a final paper and oral presentation.

The MAP experience is not required for those students currently employed and have five years of health care administration experience.

## **Culminating experience**

*Comprehensive examinations.* The M.B.A. degree student is required to successfully complete the oral and written comprehensive examinations at the end of the program. This will include the successful completion of the M.B.A. degree portfolio. Comprehensive examinations will be facilitated in HADM 691 (2) and HADM 692 (2) Integrated Management Capstone or HADM 690 (4) for MBA professionals.

*Final presentation and report.* The M.B.A. degree student is required to produce a final report at the end of the MAP experience and to present the findings at a formal presentation arranged as part of the HADM 712 MAP III course.

## **Other program requirements**

*Professional membership.* During their first quarter, students are required to secure and maintain membership in the American College of Healthcare Executives (ACHE), for the duration of the M.B.A. degree program.

*Colloquia.* Participation in ten hours of noncredit colloquia designed to acquaint students with various aspects of the health care industry is required of all students.

*Exit interview and/or survey.* Students are required to either fill out an exit survey and/or attend an exit interview with the M.B.A. degree program director at the conclusion of the program.

## **Individuals who may benefit from the program**

Individuals preparing for administrative careers in health service organizations— including hospitals, health plans, physician group practices, dental practices, and long-term and managed care settings, among others.

## Admission requirements

- Bachelor's degree from an accredited college or university
- Minimum cumulative G.P.A. of 3.0
- Acceptable scores on GRE or GMAT

The M.B.A. degree for professionals requires prospective students to be currently employed and have at least five years of work experience in health care administration.

Public health core		On Campus	Off Campus
EPDM 505	Principles of Epidemiology MBA	3.0	
EPDM 509	Principles of Epidemiology I		3.0
HADM 509	Principles of Health Policy and Management		3.0
STAT 505	Statistics in Health Administration	3.0	3.0
Totals		6.0	9.0

Major		On Campus	Off Campus
HADM 506	Principles of Health Care Finance	3.0	3.0
HADM 507	Principles of Financial Accounting in Health Care	3.0	3.0
HADM 514	Health Care Economic Policy	3.0	3.0
HADM 517	Business Communication	3.0	
	Not required for currently employed students with five years of work experience in health care administration.		
HADM 519	Data Analysis and Management	3.0	
	Not required for currently employed students with five years of work experience in health care administration.		
HADM 528	Organizational Behavior in Health Care	3.0	
HADM 529	Health Care Negotiations and Conflict Resolution	3.0	3.0
HADM 534	Healthcare Law	3.0	3.0
HADM 542	Managerial Accounting for Health Care Organizations	3.0	3.0
HADM 555	Health Care Delivery Systems	4.0	
	Not required for currently employed students with five years of work experience in health care administration.		
HADM 559	Health Care Marketing	3.0	3.0
HADM 564	Health Care Finance	3.0	3.0
HADM 574	Managing Human Resources in Health Care Organizations	3.0	3.0
HADM 575	Management Information Systems in Health Care	3.0	3.0
	May substitute HADM 581 Leadership 1: Vision and Understanding.		
HADM 580	Foundations of Leadership		3.0

HADM 581	Orientation for Leadership I: Vision and Understanding	Required for currently employed students with five years of work experience in health care administration in place of HADM 575	4.0	
HADM 601	Health Systems-Operations Management		3.0	3.0
HADM 604	Health Systems Strategic Planning		3.0	3.0
HADM 605	Health Care Quality Management		3.0	3.0
HADM 690	Health Care Management Capstone	May substitute with HADM 691 & 692	4.0	4.0
STAT 515	Grant- and Contract-Proposal Writing			3.0
Totals			47.0-56.0	—

**On      Off**  
**Campus   Campus**

<b>Religion</b>			
RELE 534	Ethical Issues in Public Health		3.0
RELE 535	Ethical Issues in Health Care Management	3.0	
Totals		3.0	3.0

**Practicum**

Practicum units are in addition to the minimum graduate units required for the degree. Not required for students with five years of work experience in health care administration.

**On      Off**  
**Campus   Campus**

HADM 695	Health Administration Field Practicum			3.0
HADM 710	Management Associate Practicum 1		12.0	
HADM 711	Management Associate Practicum 2		12.0	
HADM 712	Management Associate Practicum 3		12.0	
Totals			—	3.0
<b>Overall Totals</b>			<b>56.0-65.0</b>	<b>15.0</b>

## Health Education—PH

M.P.H. (traditional, online), Dr.P.H. (traditional, technology mediated)

NAOMI MODESTE, Department Chair

### FACULTY

Lisa Beardsley

Hildemar Dos Santos

Linda G. Halstead

Daniel Handysides

R. Patricia Herring

Gary L. Hopkins

Joyce W. Hopp—emeritus

Jerry W. Lee

Helen P. Hopp Marshak

Naomi N. Modeste

Susanne B. Montgomery

Christine M. Neish

Serena Tonstad

The Master of Public Health (M.P.H.) degree programs are built around a 58-unit curriculum. The number of required courses is based on the core public health and health education competencies, selected major area of emphasis, and elective course work. The number of required units, culminating activity requirement, and length of field practicum are specified upon acceptance. The student develops an appropriate curriculum in consultation with his/her faculty advisor.

### HEALTH EDUCATION—M.P.H.

NAOMI MODESTE, Program Director

#### Program formats

Course work for the health education program may be pursued in the following formats:

- a traditional, on-campus program
- an online program

The health education major focuses on educational, interpersonal, community, and legislative factors that promote positive health behaviors. The curriculum emphasizes interventions based on scientific data and established behavioral and learning theories that promote public health through the processes of education and community organization.

Students who complete the 58-unit curriculum (additional 1 unit in online learning for online students) may function as community health educators in a variety of settings, both public and private. They are academically prepared to conduct community assessments; design, implement, and evaluate health education interventions; organize health promotion efforts; and assist individuals and communities to better utilize techniques of health behavior change.

Students select course work from each of several practice and content areas to enhance the applied portion of the curriculum. Professional practice is addressed during the laboratory and field experience portions of the curriculum. Students may develop skills while working in community agencies and in medical care, school, and work/site settings.

Graduates are eligible to sit for the credentialing examination in health education—certified health education specialist (CHES) or MCHES, offered by the National Commission for Health Education Credentialing, Inc., 944 Macon Boulevard, Suite 310, Allentown, PA 18103.

### **Learner outcomes**

Graduates of the program with a major in health education will have the skills necessary to:

- Design, develop, implement, market, and evaluate health promotion and education programs utilizing principles from human learning motivation, communication, organizational behavior, and health behavior changes.
- Collaborate with other professionals in using resources to educate the public about health.
- Evaluate and appropriately apply public health research findings to the practice of health education.
- Provide leadership or technical assistance for public health projects in selected settings.
- Meet didactic and professional practice requirements for certification as health education specialists.

### **Educational effectiveness indicators**

- Comprehensive examination
- Field practicum report
- Professional portfolio
- Capstone project
- Exit interview/Survey

### **Prerequisite**

- Demonstrate college-level conceptualization and writing skills
- Graduate Record Examination (GRE) scores
- Bachelor's degree with a G.P.A. of 3.0 or better
- Professional license in a medical or health-related discipline, or a minimum of two years of public health experience (preferred for online format)
- Anatomy and physiology or Physiology (one course or course sequence)
- Behavioral science (two courses, one of which is an introductory psychology course)

### **Corequisite**

PHCJ 501 Introduction to Online Learning (1 unit) [online program format only]

### **Web site information**

For more information, please see our Web site at <llu.edu/public-health/online>.

Public health core			On	
			Campus	Online
NUTR 509	Public Health Nutrition and Biology (3.0)	Choose one course	3.0	3.0
NUTR 510	Advanced Public Health Nutrition (3.0)			
ENVH 509	Principles of Environmental Health		3.0	3.0
EPDM 509	Principles of Epidemiology I		3.0	3.0
GLBH 524	Cultural Competence and Health Disparities		2.0	2.0
HADM 509	Principles of Health Policy and Management		3.0	3.0
HPRO 509	Principles of Health Behavior		3.0	3.0
PHCJ 605	Overview of Public Health	To be taken the first quarter of program	1.0	1.0
PHCJ 675	Integrated Public Health Capstone	To be taken in the final quarter of program	2.0	2.0
RELE 534	Ethical Issues in Public Health		3.0	3.0
STAT 509	General Statistics			4.0
STAT 509	General Statistics (4.0)	Choose one course	4.0	—
STAT 521	Biostatistics I (4.0)			
Totals			27.0	27.0

Major			On	
			Campus	Online
HPRO 524	Adolescent Health		3.0	3.0
HPRO 530	Fundamentals of Research in Health Behavior and Health Education		3.0	3.0
HPRO 535	Health Education Administration and Leadership		3.0	3.0
HPRO 537A	Community Programs Laboratory--A		1.0	
HPRO 537B	Community Programs Laboratory--B		2.0	
HPRO 537C	Community Programs Laboratory--C		1.0	
HPRO 538	Health Education Program Development and Evaluation	Taken concurrently with HPRO 537B	3.0	3.0
HPRO 539	Policy and Issues in Health Education		3.0	3.0
HPRO 553	Addiction Theory and Program Development		3.0	3.0
HPRO 589	Qualitative Research Methods	Taken concurrently with HPRO 537A	3.0	3.0
HPRO 696	Directed Study/Special Project			4.0
Totals			25.0	25.0

Selected electives		On		
		Campus	Online	
___ ___	Elective		6.0	
HPRO ___	Health Education (3.0) <i>As are available and recommended by advisor or program coordinator</i>	Choose from this list	6.0	—
HPRO 526	Lifestyle Diseases and Risk Reduction (3.0)			
HPRO 527	Obesity and Disordered Eating (3.0)			
HPRO 550	Women in Development (3.0)			
HPRO 567	Reproductive Health (3.0)			
HPRO 573	Exercise Physiology I (3.0)			
Totals			6.0	6.0

Field experience		On		
		Campus	Online	
Practicum units are in addition to the minimum graduate units required for the degree.				
HPRO 797	MIP Residency in Health Education		12.0	
HPRO 798D	Field Practicum 400 hours		12.0	
HPRO 797	MIP Residency in Health Education (12.0) <i>See International Peace Corps Program in this Catalog for further details.</i>	Choose one course	—	—
HPRO 798D	Field Practicum (12.0) 400 hours			
Totals			—	—
<b>Overall Totals</b>			<b>58.0</b>	<b>58.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the curriculum.

### Field practicum

Each student is required to complete a total of 400 hours and no less than 240 hours of practicum.

### Culminating activity

Students are required to demonstrate the ability to integrate the specified areas of public health—administration, epidemiology, statistics, environmental health, and health behavior—during their culminating activity experiences. The culminating activity includes a written comprehensive examination, field experience (upon completion of all required courses); professional portfolio to be submitted; and exit interview with the department chair (at the conclusion of the program).

Students who do not meet minimum standards of performance in the culminating activity are subject to remedial course work to address deficiencies in preparation.

## **HEALTH EDUCATION—DR.P.H.**

NAOMI MODESTE, Program Director

The Department of Health Promotion and Education offers the Doctor of Public Health (Dr.P.H.) degree with majors in health education and in preventive care. Emphasis is placed on teaching, research, leadership, and evaluative skills; and wellness lifestyle management intervention programs, development, implementation, and evaluation, respectively.

The Dr.P.H. degree health education major is offered in two formats: on campus and technology-mediated. The technology-mediated program is scheduled to begin in 2012, *pending WASC approval*.

See the Preventive Care Program in the School of Public Health section for a description of the Dr.P.H. degree requirements for the program.

### **Health education major**

The Dr.P.H. degree in health education is designed for individuals who desire to add depth to their health education specialization and develop research and leadership capabilities. The emphasis in health education offers advanced knowledge and competencies in the health education process and includes planning and evaluation of health behavior change. The program emphasizes the practice of healthful lifestyle behaviors and community health education.

The technology-mediated format is targeted towards working professionals. The curriculum consists of synchronous learning, online courses, blended courses, and on campus courses. Specific hardware and software requirements for the program are needed.

### **Learner outcomes**

Upon completion of the Dr.P.H. degree program in health education, the graduate should be able to:

- Conduct health education research and evaluation utilizing basic statistical concepts.
- Generate health-related educational training/curricular materials and conduct professional seminars and training programs.
- Promote and assist in the development of grant-writing proposals and applications for community-based health education research.
- Creatively apply theoretical concepts and models to educational program design in the development of health education interventions.
- Demonstrate educational leadership skills, policy development, and strategic planning for organizations and agencies.
- Write and submit manuscripts to professional journals for publication.

### **Educational effectiveness indicators**

- Comprehensive examination
- Defense (qualifying examination)
- Dissertation proposal
- Advancement to candidacy
- Dissertation defense
- Publishable research paper
- Professional portfolio review
- Exit interview/Survey

## Prerequisite

(to be taken before acceptance into the program)

- Anatomy and physiology
- Social science (two courses, which may include psychology, sociology, or cultural anthropology)
- Quantitative proficiency
- Graduate Record Examination (GRE) scores or equivalent
- Master's or doctoral degree in appropriate field with a minimum G.P.A. of 3.2
- Post-master's degree work experience, preferred

## Corequisites

May be taken during first two quarters of program, in addition to units required for degree; advanced standing from previous M.P.H. degrees considered

		Units
ENVH 509	Principles of Environmental Health	3.0
EPDM 509	Principles of Epidemiology I	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0
HADM 509	Principles of Health Policy and Management	3.0
HPRO 509	Principles of Health Behavior	3.0
HPRO 695	Community Practicum	1.0
NUTR 509	Public Health Nutrition and Biology or NUTR 510	3.0
PHCJ 605	Overview of Public Health	1.0
STAT 509	General Statistics	4.0
Totals		—

## Major

		Units
HPRO ___	Health Education	12.0
HPRO 538	Health Education Program Development and Evaluation	3.0
HPRO 543	Writing for Health Professionals	3.0
HPRO 588	Health Behavior Theory and Research	4.0
HPRO 608	Advanced Seminar in Health Education (2.0)	6.0
Totals		28.0

## Administration and leadership

		Units
___ ___	Elective Courses chosen in consultation with advisor	9.0
HPRO 535	Health Education Administration and Leadership	3.0
Totals		12.0

## Public health

		Units
EPDM 5__	Epidemiology Elective (3) <i>Advanced epidemiology course, chosen in consultation with advisor</i>	3.0
HPRO 589	Qualitative Research Methods (3)	
Totals		3.0

<b>Cognates</b>			Units
___ __	Elective	Courses chosen in consultation with advisor; Usually from a different department or school	9.0
Totals			9.0

<b>Religion</b>			Units
RELE 5__	Graduate-level Ethics		3.0
RELR 5__	Graduate-level Relational		3.0
RELT 5__	Graduate-level Theological		3.0
Totals			9.0

<b>Research and evaluation</b>			Units
HPRO 534A	Research Methods		2.0
HPRO 534B	Research Methods		2.0
HPRO 544	Health Education Evaluation and Measurement		3.0
HPRO 685	Preliminary Research Experience		2.0
HPRO 694	Research		6.0
PHCJ 604	Research Seminar	Taken after HPRO 534A & B	2.0
STAT 514	Intermediate Statistics for Health-Science Data	Taken after STAT 549	3.0
STAT 549	Analytical Applications of SPSS	Taken after STAT 509	2.0
STAT 568	Data Analysis	Taken after STAT 514	3.0
Totals			25.0

<b>Dissertation</b>			Units
HPRO 698	Dissertation (1.0-14.0)		12.0
Totals			12.0
<b>Overall Totals</b>			<b>98.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree program.

# Health Policy and Leadership—PH

M.P.H., Dr.P.H.

S. ERIC ANDERSON, Health Policy and Management Department Chair

## HEALTH POLICY AND LEADERSHIP—M.P.H.

### Description

The Master of Public Health (M.P.H.) in health policy and leadership degree prepares participants to develop a new mind set and develop effective leadership strategies to maximize success. The program is designed to enhance the skills and abilities of individuals interested in leadership and to strengthen their knowledge and understanding of health policy needed to effectively anticipate challenges and impact change.

### Learner outcomes

Upon completion of this degree, the graduate should be able to:

1. Describe the policy process for improving the health status of populations.
2. Produce health policy communications to appropriate stakeholders.
3. Demonstrate leadership in health policy and advocacy for public health issues.
4. Identify issues that influence access to care, including health services to special populations.
5. Apply systems thinking to current challenges in the health system.
6. Apply the principles of strategic planning to make recommendations for organizational and community health initiatives.
7. Understand the principles of finance and economics.

### Educational effectiveness

- Course work
- Individual advisement
- Field experience
- Professional portfolio
- Exit interview

#### Public health core

Units

ENVH 509	Principles of Environmental Health	3.0
EPDM 509	Principles of Epidemiology I	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0
HADM 509	Principles of Health Policy and Management	3.0
HPRO 509	Principles of Health Behavior	3.0
HPRO 536	Program Planning and Evaluation	2.0
NUTR 509	Public Health Nutrition and Biology	3.0
PHCJ 605	Overview of Public Health	1.0
PHCJ 675	Integrated Public Health Capstone	2.0

STAT 509	General Statistics (4)	Choose one course	4.0
STAT 521	Biostatistics I (4)		
Totals			26.0

Major			Units
HADM 501	Health Policy and Leadership Seminar		1.0
HADM 510	Health Policy Analysis and Synthesis		3.0
HADM 529	Health Care Negotiations and Conflict Resolution		3.0
HADM 532	Public Health Law		3.0
HADM 536	Health Policy Communications		3.0
HADM 545	Government Policy and Health Disparities		3.0
HADM 580	Foundations of Leadership		3.0
HADM 514	Health Care Economic Policy (3)	Choose one course	3.0
HADM 516	International Economic Policy (3)		
Totals			22.0

Religion			Units
RELE 534	Ethical Issues in Public Health		3.0
Totals			3.0

Electives			Units
HADM 506	Principles of Health Care Finance (3)	Choose one course	3.0
HADM 555	Health Care Delivery Systems (4)		
HADM 604	Health Systems Strategic Planning (3)		
Totals			3.0

Practicum			Units
HADM 797	Health Policy and Leadership Field Practicum		3.0
Totals			3.0
<b>Overall Totals</b>			<b>57.0</b>

## Other requirements

- *Professional membership.* During their first quarter, students are required to secure and maintain membership in an approved professional society, such as the American College of Healthcare Executives (ACHE).
- *Health administration colloquia (10).* Participation in a minimum of ten noncredit colloquia designed to acquaint students with various aspects of the health care industry is required. Attendance at these colloquia will be in addition to attendance at ten public health seminars.

## Culminating experience

The culminating activity includes a research paper or professional project, field experience upon completion of essential major course work, professional portfolio upon completion of the field experience, and an exit interview with the M.P.H. program director at the conclusion of the program.

## **Research**

Participants will have the opportunity to be involved in research and policy projects at various levels. They may be part of an ongoing research or policy project at the University or in the community. Faculty maintains a research agenda and invites participants to join them in ongoing projects. It is anticipated that the research conducted by the program participants would coincide with the research interests of one or more faculty.

## **Individuals who may benefit from the program**

Participants will be drawn primarily from public health; but they also will be drawn from health care, higher education, community-based organizations, and those working in public policy. This program is specifically designed for individuals interested in multidisciplinary approaches to problem solving and creating a healthier future.

## **HEALTH POLICY AND LEADERSHIP—DR.P.H.**

DAVID S. PENNER, Program Director

## **General description**

The current, rapidly changing leadership arena demands a diversity of leadership talents to respond to the varied challenges posed by the global community. Moreover, creative approaches are needed to meet these challenges. The Doctor of Public Health degree in health policy and management at Loma Linda University is a unique and wonderful opportunity to serve at the very heart of leadership development.

The primary focus of this program is to enhance the skills and abilities of those in positions of leadership; to add to the body of knowledge about leadership through observation, reflection, and research; and to bring together leaders who desire to learn, mentor, and model good leadership. This program, in part, meets the great need for leaders of integrity and understanding in both research and practice.

Leadership talents cannot be taught, but they can be developed and strengthened. The design of the program is to help individuals discover their talents and strengths, imagine how they can be developed, and then devise plans to increase and extend their skills and knowledge around those unique strengths.

## **Description of the curriculum components**

### **Orientation**

Prior to admission to the doctoral program, each participant completes the orientation for leadership (12 units). Composed of three courses, this orientation includes time for assessing individual leadership strengths and academic potential, understanding personal leadership styles and skills, exploring areas of future leadership development, and preparing academic plans. Admission to the orientation is limited to thirty per cohort. Admission to the degree is limited to nine-to-twelve individuals per cohort. Admission to the orientation for leadership is not admission to the doctoral degree program.

### **Academic plan**

During the orientation for leadership, each participant creates an individualized academic plan. This plan outlines the specific details for the participant's degree program. It includes elements such as a statement of goals, a record of past experience, the result of various leadership tests and assessments, a personal statement of vision of achievement by the end of the program (and beyond), and a specific plan of how the participant will demonstrate the eight areas of leadership competency. For each of the areas of

competency, the participant indicates how that particular competency is to be achieved—listing specific courses, strategic experiences, directed research, past experience, and/or other evidence to be presented as part of his/her portfolio. A request is also submitted at this time for academic advisors and research supervisors. The completed academic plan is presented as part of the application for admission to the doctoral program and must be approved by the program faculty before the participant is admitted to the doctoral program. Changes in the academic plan may be made during the program with approval of the program faculty.

### **Portfolio**

Achievement of competency is found in the evidence contained in the portfolio, not in attendance records or simply the completion of required course work. Based on the academic plan approved at the time of admission to the doctoral program, the participant assembles the portfolio throughout the program. The completed portfolio is presented at the end of the program as evidence that all areas of competency have been met and the requirements of the program satisfied.

### **Academic courses**

Depending on specific needs outlined in the academic plan, participants choose from a variety of courses and mentored activities. Courses are available in traditional classroom settings, online, or through directed study and mentored activities.

### **Research project**

Throughout their program of study, participants are involved in research at various levels. They may be part of an ongoing research project at the University or elsewhere. The doctoral dissertation is an integrated part of the degree.

### **Support**

Given the nature of the program and the discipline, interaction with many other persons is paramount. Leadership cannot be studied in isolation; collaboration is encouraged and modeled throughout the program. Since support and advisement is so critical, special emphasis is placed on academic support. Three examples follow.

*Faculty advisors and professional mentors.* All participants have a primary academic advisor assigned from the core health policy and leadership faculty. In addition, participants may choose additional mentor(s) from beyond the department or University. These mentors provide support and encouragement, as well as depth and expertise.

*Learning and study support groups.* There are at least two specifically designed study groups. One group of fellow participants (three to five) serves as a creative force and idea exchange. The group meets on a regular basis to keep members of the group focused on completing the degree. Another group, created by each participant and formed of individuals primarily outside the program (five to eight) creates an extended learning environment and helps to create/provide opportunities in which the participants can improve and demonstrate their leadership skills. These learning groups include mentors, work colleagues, professional associates, and friends. Although not technically part of the health policy and leadership faculty, these groups nonetheless become extensions of the ethos and mission of the program.

*Yearly conferences.* As professionals, all participants attend an annual health policy and leadership conference until the completion of their programs and may continue to do so afterward. These open conferences provide students opportunities to discuss current health policy and leadership issues, present

scholarly papers, consult with academic advisors, report on their progress in the program, and meet with fellow participants for collaborative and networking activities. The first three conferences are taken for academic credit.

### **Learning outcomes**

In addition to the eight University learning outcomes, the Health Policy and Leadership Program has chosen five additional learning outcomes.

1. *Leadership*: Participants understand a broad range of leadership issues and participate in future-oriented planning and change processes.
2. *Health policy*: Participants understand that health policy is a multidisciplinary field of inquiry and practice concerned with the delivery, quality, and costs of health and health care for individuals and populations.
3. *Ethics*: Participants demonstrate ethical choices, values, and professional practices implicit in their discipline and personal ethics.
4. *Reflection*: Participants model reflective leadership.
5. *Scholarship*: Participants develop skills in reading, evaluating, conducting, and reporting research.

### **Areas of leadership competency and underlying themes**

In order to more clearly define the range of meaning and expectations for this program, eight areas of leadership competency and two underlying themes have been identified and elaborated. These form the framework in which the academic plan is developed and the portfolio evaluated.

1. *Policy development and strategy*: Participants understand the framework for policy development and explain how strategy is essential to achieving outcomes.
2. *Systems thinking*: Participants explore the dynamic interactions among human and social systems and seek to improve the interrelated and interdependent relationships among individuals, groups, organizations, and communities.
3. *Community building*: Participants, in Peter Block's words, "create hospitable space, invite collective attention to what is important and make the group's intelligence visible to itself."
4. *Understanding diversity*: Participants utilize leadership skills in bringing together a variety of persons, including those who are different from themselves (age, gender, religion, work ethics, mind styles, etc.) in a way that strengthens organizations/communities.
5. *Leading change*: In creating a supportive environment for the change, participants encourage creativity and innovation and help bring about both individual and organizational change.
6. *Effective communication*: Participants accept responsibility for and respond to finding appropriate avenues to communicate with a variety of audiences.
7. *Conflict resolution*: Participants, through careful deliberation, good listening and understanding, interest-based negotiation, and mutually beneficial collaboration, practice the fragile process of addressing conflict.
8. *Management and governance*: Participants observe, participate in, evaluate the various styles of management and governance, and explore management strategies and governance structures for the future.

## **Integrated themes**

Woven throughout the eight areas of competency, two themes elevate the developmental process and increase the value of the discussion within each area. While the areas of leadership competency are broadly found in many similar programs, the emphasis on ethics and scholarship makes this program particularly valuable to those seeking to model leadership characterized by integrity and understanding.

1. *Ethics—Virtue and obligation*: Participants demonstrate ethical choices, values, and professional practices implicit in their discipline and personal ethics.
2. *Scholarship—Research and reflection*: Participants practice reflective leadership and develop skills in reading, evaluating, conducting, and reporting research.

## **Educational effectiveness**

### **Initial assessment**

The orientation for leadership begins with intense evaluation and feedback as participants discover and evaluate their talents, skills, and strengths. Each participant works closely with a program advisor to prepare an academic plan. This plan is evaluated at the end of the orientation and must be approved by the program faculty before admission to the program.

### **Annual progress reports and portfolio reviews**

Yearly progress reports and portfolio reviews are scheduled at the time of the annual conferences. The program advisor and other program faculty (two or three) meet with the participant to review the progress of the portfolio, consider any changes and/or additions to the academic plan, answer questions, and give advice as necessary. These yearly evaluations should not be seen as isolated conversations but more as markers along the way in an ongoing dialogue with the program faculty. If unsatisfactory progress is being made, a letter of warning is given following the review. Failure to achieve satisfactory progress will result in the termination of the participant or in a hold being placed on his/her registration until the necessary progress is made. In all cases, a summary of the review will be included in the participant's portfolio.

### **Faculty involvement in learning groups**

The academic advisor meets regularly with the participant's mentors and support group to evaluate portfolio progress and opportunities to enhance the learning experience. The frequency of these meetings will vary, depending on the specific activities related to the demonstration of competency. It is anticipated that much of this will be done in the first three or four years of the degree. Notes on these meetings will be included in the participant's portfolio.

### **Progress through dissertation**

Involvement in research and reflection is encouraged throughout the program. Already included in the academic plan is an outline of such activities to be completed during the degree program. It is anticipated that the academic advisor and participant will discuss the progress of topic development and formulation of dissertation proposal even within the first year. Research courses taken early in the program will also provide feedback on satisfactory progression in this area. Building on the existing School of Public Health's *Dr.P.H. Handbook*, a clear set of guidelines will be further developed to apprise both the advisor

and the participant of the steps required in taking the dissertation from topic to proposal, approval, research, writing, and defense. The dissertation committee will oversee the progress of the dissertation to the point of satisfactory defense.

### Admissions requirements (in addition to the University Admissions requirements)

1. Approved academic plan
2. Department interview
  - a. Academic plan
  - b. Evidence of leadership ability and self-motivation
  - c. Sample of written work
3. Completed orientation for leadership session
4. Minimum of five years of work experience
5. Current employment and position in an organization that is supportive of leadership development

#### Corequisites

May be taken during first two quarters of program, in addition to units required for degree; advanced standing from previous M.P.H. degrees considered

		Units
EPDM 509	Principles of Epidemiology I	3.0
STAT 509	General Statistics or STAT 521	4.0
Totals		—

#### Major

		Units
HADM 584	Current Topics in Health Policy and Leadership (1.0) Required to take 3 times	3.0
HADM 585	Policy Development for a Twenty-First Century Health System	3.0
HADM 595	Leadership--Past, Present, and Future	3.0
HADM 584	Current Topics in Health Policy and Leadership (1)	9.0-15.0
HADM 589	Advanced Practice in Leadership (1 to 8)	
HADM 689	Graduate Seminar in Leadership (2) <i>May be repeated up to 8 units of credit</i>	
HADM 696	Directed Study/Special Project (1 to 8)	
Totals		18.0-24.0

<b>Public health</b>		Units
HADM 586	Building Healthy Communities: Integrative Health Policy	3.0
HADM 587	Statistics to Policy: What Turns the Dial?	3.0
HADM 588	Leadership, Policy, and Environmental Change	3.0
EPDM 5__	Epidemiology Elective (3 to 12)	Advanced epidemiology courses chosen in consultation with advisor
EPDM 512	Multivariate Modeling in Epidemiology (3)	
EPDM 534	Epidemiology of Maternal-Child Health (3)	
EPDM 544	Epidemiology of Infectious Disease (3)	
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3)	
EPDM 566	Epidemiology of Cardiovascular Disease (3)	
EPDM 567	Epidemiology of Aging (3)	
Totals		15.0-24.0

**Religion**

One course required from each of the following three areas. May include one additional elective.

Units

RELR 5__	Graduate-level Relational	3.0
RELE 5__	Graduate-level Ethics	3.0
RELT 5__	Graduate-level Theological	3.0
REL_ 5__	Graduate-level Religion (3)	Optional
Totals		9.0-12.0

**Electives**

Choose from the following

Units

___ __	Elective (1 to 10) <i>Choose in consultation with advisor</i>	9.0-18.0
HADM 581	Orientation for Leadership I: Vision and Understanding (4)	
HADM 582	Orientation for Leadership II: Exploring the Nature of Leadership (4)	
HADM 583	Orientation for Leadership III: Setting a New Direction (4)	
Totals		9.0-18.0

**Research**

Units

HADM 685	Preliminary Research Experience	3.0
HADM 699	Applied Research	3.0
PHCJ 604	Research Seminar (2)	Choose from this list or similar
STAT ___	Statistics (3 to 4)	
STAT 514	Intermediate Statistics for Health-Science Data (3)	
STAT 548	Analytical Applications of SAS (2)	
STAT 549	Analytical Applications of SPSS (2)	
STAT 568	Data Analysis (3)	
Totals		13.0-16.0

Dissertation		Units
HADM 686	Writing Seminar (1) <i>Optional</i>	12.0-13.0
HADM 697	Dissertation Proposal (4)	
HADM 698	Dissertation (8)	
Totals		12.0-13.0
<b>Overall Totals</b>		<b>88.0</b>

## Field practicum

Throughout the program, there is an intentional integration of the subject being examined and its practice. As a result, many courses contain a significant component of field application. Some courses consist of field practicum. But more importantly, the program is designed around "taking learning to the workplace." As such, participants are expected to develop a learning environment at their place of work. The work in these learning groups will be evaluated by the local work supervisor and the University advisor and will be included in the final portfolio.

## Culminating experience

Besides the dissertation defense, which is itself a major culminating experience, participants will present their portfolios at the end of the program. The portfolios are based on the academic plan and the eight areas of leadership competency, supported by evidence and validated as sections are completed, and assessed at the end of the program as the participants present them in the culminating degree activity.

## Research

Throughout their program of study, participants are involved in research at various levels. They may be part of an ongoing research project at the University or elsewhere. The doctoral dissertation is an integrated part of the degree from the beginning of the degree program. Leadership faculty maintains a research agenda and invites participants to join them in ongoing projects. It is anticipated that the research conducted by the program participants will coincide with the research interests of one or more faculty. To support and encourage research, the program includes a faculty member whose task is to coordinate the research efforts of those enrolled in the program.

Underscoring the importance of research, one of the underlying themes supporting the leadership competencies is scholarship. As such, participants will practice reflective leadership; develop skills in reading, evaluating, conducting, and reporting research; develop a habit for and practice in reflective thinking and critical self-evaluation in all areas of competency; analyze and evaluate research published in professional journals in both qualitative and quantitative traditions in four or more areas of competency; present posters, professional papers and/or research findings at one or more professional conferences in two or more areas of competency; demonstrate the ability to conduct independent research at an advanced level, from problem definition to research and oral defense, in at least one research tradition while addressing issues in one or more areas of competency; and participate in the dialogue of the discipline by submitting at least two articles for publication.

## Individuals who may benefit from the program

Given the context of Loma Linda University, participants will be drawn primarily from public health; but they will also be drawn from health care, higher education, NGOs, and faith-based CBOs that have

developed health initiatives, and other related groups. Two important requirements are that those admitted to the program will have had sufficient experience in the workplace (normally five years or more) and that they are currently employed in an organization that is supportive of their degree program and unique requirements to develop a "learning environment" at the workplace.

## Lifestyle Medicine—PH

M.P.H.

SERENA TONSTAD, Program Director

### LIFESTYLE MEDICINE—M.P.H.

In the Lifestyle Medicine Program, health professionals with relevant clinical health professional degrees are empowered to provide lifestyle change interventions and promote healthy behaviors for patients with chronic diseases or patients at risk of chronic diseases, while understanding the population determinants of wellness, health, and disease. The curriculum emphasizes interventions based on scientific data and established behavioral and learning theories that promote individual and public health through the processes of education, health behavior change, and health promotion. It emphasizes that health professionals who are not physicians are not enabled to practice medicine when awarded this degree.

The curriculum focuses on teaching public health practice classes that are needed to possess core skills in public health, in evaluating the scientific literature, and in understanding and applying the science of disease prevention in the context of mind-body interaction. More practice-oriented classes teach the scientific basis and applications of exercise prescriptions, nutrition counseling, tobacco cessation and health behavior change techniques.

Graduates may use their skills acquired in the program to enhance their current clinical knowledge and skills in medicine, nursing, clinical psychology, osteopathy, pharmacy, or other health professions. They are academically prepared to apply preventive methodologies to chronic diseases and risk factors; conduct individual health assessments; provide medical lifestyle counseling; properly evaluate and apply lifestyle medicine-related research findings, and lead and evaluate health promotion projects.

Course work for the Lifestyle Medicine program is currently offered as a 60-unit, predominantly on-campus program. Almost one-half of the total course work (up to 30 units) may be completed online. Students who hold a clinical health professional degree may apply to the program.

### Learner outcomes

Graduates of the program in lifestyle medicine will:

- Possess a core field of knowledge of public health, with emphasis on the application of preventive methodologies to chronic diseases.
- Accurately assess lifestyle-related risk factors for chronic diseases.
- Provide appropriate interventions in regard to these risk factors, e.g., medical behavioral counseling in exercise, nutrition, and tobacco dependence.
- Evaluate and properly apply lifestyle medicine-related research findings.
- Provide leadership for and evaluate community-based health-promotion projects.

### Educational effectiveness indicators

- Culminating activity
- Field practicum (200 hours)
- Professional portfolio
- Exit interview/Survey

**Prerequisite**

- Demonstrate college-level conceptualization and writing skills
- Graduate Record Examination (GRE) scores (not required for physicians, dentists, or off-campus students)
- Bachelor's degree
- Clinical health professional degree, including but not limited to medicine, osteopathy, dentistry, nursing (minimum four years of college education), clinical psychology, pharmacy, or physical therapy; or training as a nurse practitioner, physician assistant, chiropractor, licensed exercise physiologist, or registered dietitian.
- Anatomy and physiology (full course sequence)
- Biochemistry or nutritional metabolism
- Pathology of human systems
- Pharmacology

<b>Public health core</b>			Units
NUTR 509	Public Health Nutrition and Biology (3)	Choose one course	3.0
NUTR 510	Advanced Public Health Nutrition (3)		
ENVH 509	Principles of Environmental Health		3.0
EPDM 509	Principles of Epidemiology I		3.0
GLBH 524	Cultural Competence and Health Disparities		2.0
HADM 509	Principles of Health Policy and Management		3.0
HPRO 509	Principles of Health Behavior		3.0
HPRO 530	Fundamentals of Research in Health Behavior and Health Education		3.0
HPRO 536	Program Planning and Evaluation		2.0
PHCJ 605	Overview of Public Health		1.0
RELE 534	Ethical Issues in Public Health		3.0
STAT 509	General Statistics (4)	Choose one course	4.0
STAT 521	Biostatistics I (4)		
<b>Totals</b>			<b>30.0</b>

<b>Major</b>			Units
HPRO 515	Mind-Body Interactions and Health Outcomes		3.0
HPRO 527	Obesity and Disordered Eating		3.0
HPRO 529	Preventive and Therapeutic Interventions in Chronic Disease		4.0
HPRO 565	Tobacco Use: Prevention and Interventions		3.0
HPRO 573	Exercise Physiology I		3.0
HPRO 578	Exercise Physiology II		3.0
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids		4.0
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals		4.0
NUTR 556	Nutritional Applications in Lifestyle Intervention		1.0
HPRO 606	Motivational Interviewing (2)	Choose one course	2.0
PSYC 537	Applied Behavioral Medicine (2)		
<b>Totals</b>			<b>30.0</b>

**Field experience**

Practicum units are in addition to the minimum graduate units required for the degree.

Units

HPRO 798B	Field Practicum	400 hours	6.0	
			Totals	—
			<b>Overall Totals</b>	<b>60.0</b>

**Culminating activity requirements**

Students are required to demonstrate the ability to integrate the specified areas of public health: administration, epidemiology, statistics, environmental health, and health behavior during their culminating activity experiences. The culminating activity includes a written paper (e.g., a literature review of a relevant topic; a series of case studies; a summary of research conducted during the program); a professional portfolio to be submitted; and an exit interview with the program director (at the conclusion of the program).

## Maternal and Child Health—PH

M.P.H

PATTI HERRING, Program Director

### DESCRIPTION

The Maternal and Child Health Program leading to the M.P.H. degree will prepare graduates to demonstrate the competencies identified by the Association of Teachers of Maternal and Child Health and the Association of Schools of Public Health. Course work toward the M.P.H. degree in maternal and child health may be pursued in the traditional on-campus program.

The major in maternal and child health builds on health education, epidemiology, cross-cultural, and nutrition theory and practice. Family health issues are addressed using a broad array of public health strategies.

The program requires completion of 62 units, with culminating activity and 240-400 clock hours of field practicum.

### LEARNER OUTCOMES

Graduates of this program in maternal and child health will have the skills necessary to:

1. Apply public health research and management tools to the organization, design, implementation, and evaluation of maternal-child health programs in public health settings.
2. Contribute to the development of public health policy and action agendas in maternal and child health.
3. Communicate health and nutrition issues affecting mothers and children to a wide variety of stakeholders in varying cultural settings.

### EDUCATIONAL EFFECTIVENESS INDICATORS

1. Field practicum report
2. Professional portfolio for review
3. Comprehensive examination
4. Exit interview

### PREREQUISITE

- Bachelor's degree
- GRE scores
- Demonstrate college-level conceptualization and writing skills
- Professional license in a medical or health-related discipline (nursing, dentistry, medicine, social work, dietetics)--**preferred**
- G.P.A. of 3.0 or higher
- Relevant professional or public health experience in the field of maternal and child health

### RESEARCH

Although not required, students may have the opportunity to collaborate with researchers.

## CULMINATING ACTIVITY

Students are required to demonstrate the ability to integrate the specified areas of public health: administration, epidemiology, statistics, environmental health, and health behavior. The culminating activity is comprised of field experience, comprehensive examination, professional portfolio, and exit interview.

## INDIVIDUALS WHO MAY BENEFIT

Licensed health professionals with experience in public health are preferred for this 62-unit maternal and child health program. Those without a health profession and/or public health experience may apply and be accepted on an individual basis.

Public health core			Units
NUTR 509	Public Health Nutrition and Biology (3)	Choose one course	3.0
NUTR 510	Advanced Public Health Nutrition (3)		
ENVH 509	Principles of Environmental Health		3.0
EPDM 509	Principles of Epidemiology I		3.0
GLBH 524	Cultural Competence and Health Disparities		2.0
HADM 509	Principles of Health Policy and Management		3.0
HPRO 509	Principles of Health Behavior		3.0
PHCJ 605	Overview of Public Health		1.0
PHCJ 675	Integrated Public Health Capstone		2.0
RELE 534	Ethical Issues in Public Health		3.0
STAT 509	General Statistics (4)	Choose one course	4.0
STAT 521	Biostatistics I (4)		
Totals			27.0

Major			Units
EPDM 534	Epidemiology of Maternal-Child Health		3.0
HPRO 523	Maternal/Child Health: Policy and Programs		3.0
HPRO 524	Adolescent Health		3.0
HPRO 538	Health Education Program Development and Evaluation		3.0
HPRO 550	Women in Development		3.0
HPRO 553	Addiction Theory and Program Development		3.0
HPRO 556	High-Risk Infants and Children: Policy and Programs		3.0
HPRO 559	Lactation Management		3.0
HPRO 567	Reproductive Health		3.0
HPRO 589	Qualitative Research Methods		3.0
HPRO 614	Seminar in Maternal and Child Health Practice		2.0
NUTR 534	Maternal and Child Nutrition		3.0
Totals			35.0

**Field experience**

Practicum units are in addition to the minimum graduate units required for the degree.

Units

HPRO 797	MIP Residency in Health Education (12)	Choose one course	—
HPRO 798D	Field Practicum (12) <i>400 clock hours</i>		
Totals			—
<b>Overall Totals</b>			<b>62.0</b>

## Nutrition—PH

M.P.H (public health nutrition), M.S., Dr.P.H.

JOAN SABATÉ, Chair

### FACULTY

Carol Abidin

Roopa Bajwa

Carol Baker

Diane L. Barnhart

Kenneth I. Burke

Dianne L. Butler

Margie Carson

Bertrum C. Connell

Zaida R. Cordero-MacIntyre

Barbara A. Crouse

Barbara F. Dickinson

Dottie Gibson

Ella H. Haddad

Sandy Henderson

Inherla Hernandez

Lorrie L. Hinkleman

Richard W. Hubbard

Karen Jaceldo-Siegl

Eddy Jara

Judith M. Jamison

Patricia K. Johnston

Susan K. Lewis

Merijane T. Malouin

Mark J. Messina

Alisa L. Minear-Morton

M. Elizabeth Quigley

Sharon Quinn

Sujatha Rajaram

Inherla H. Rivera

Lia M. Robinson

Joan Sabaté

John A. Scharffenberg

Jean Sellers

Gina Siapco

Jeanne F. Silberstein

Maryellen Westerberg

Michelle Wien

Kathleen M. Wolf

## **PUBLIC HEALTH NUTRITION—M.P.H.**

ELLA HADDAD, Program Director

### **Description**

The Master of Public Health (M.P.H.) degree Nutrition Program provides specialized training in community nutrition within the multidisciplinary public health programs offered by the School of Public Health (SPH). The program is designed to train professionals to assume leadership positions in assessing community nutrition needs; and in planning, directing, and evaluating the nutrition component of health promotion and disease prevention efforts.

Public health nutritionists work in a variety of settings in government and voluntary agencies, public and private community health centers, ambulatory care clinics, schools, industries, private practice, and specialized community health projects. They function as directors and administrators of nutrition programs, nutrition care providers, advocates, educators, counselors, consultants, and researchers.

### **Learner outcomes**

The curriculum of the M.P.H. degree in nutrition prepares students for careers in public health and community nutrition. It is appropriate for individuals with professional credentials, such as medicine, dentistry, dietetics, or nursing. Students may select the option of completing a research project with publication potential in lieu of a field practicum.

Upon completion of the program, graduates will:

- Understand mechanisms influencing human physiological systems and how foods, nutrients, and lifestyle impact health and well-being.
- Understand the role of vegetarian dietary practices in human health, the environment, and ecology.
- Demonstrate the ability to function independently and collaboratively as both leader and/or member of a team to plan, manage, and evaluate health promotion activities.
- Understand processes shaping public policy and advocacy related to nutritional guidelines and programs.
- Understand ways epidemiological and research tools and findings are applied to practice.
- Learn how communications strategies are used to develop and deliver nutrition information and influence social-ecological change.
- Understand how beliefs, values, ethics, and service are integrated in personal and professional growth and development.

### **Educational effectiveness**

Indicators of educational effectiveness include successful completion of a written comprehensive examination, field experience, field practicum report, and an exit interview with the department chair.

### **Prerequisite**

- Chemistry through organic (at least 5 quarter units of organic)
- Microbiology
- Physiology

All prerequisites must be completed with a passing grade of "B" or better.

### **Culminating experience**

Included in the culminating experience are a written comprehensive examination, a field practicum/ research report and an exit interview with the director of the program at the conclusion of the program.

### **Total minimum required units**

56

### **Individuals who may benefit from the program**

- Graduates of bachelor's degree programs in chemistry, biology, social sciences, etc, who seek advanced degrees in nutrition or the health professions.
- Health professionals, such as physicians, nurses, dentists, allied health professionals, and registered dietitians.

## **PUBLIC HEALTH NUTRITION WITH COORDINATED PROGRAM IN DIETETICS—M.P.H.**

ELLA HADDAD, Program Director

### **Description**

The Master of Public Health (M.P.H.) degree Nutrition and Dietetics Program enables students to meet the didactic and supervised practice requirements for registration eligibility in dietetics. The purpose of registration is to protect the health, safety, and welfare of the public by encouraging high standards of performance by persons practicing in nutrition and dietetics.

Students in the M.P.H. or Dr.P.H. degree curricula may establish eligibility to write the registration examination to become a registered dietitian (RD) by completing this program. The program is accredited by the Commission on Accreditation for Dietetics Education (CADE) of the American Dietetic Association, 120 South Riverside Plaza, Suite #2000, Chicago, Illinois 60606, 312/899-5400.

### **Learner outcomes**

The curriculum integrates the requirements of the M.P.H. degree in nutrition with the competency requirements, foundation, knowledge, and skills to practice dietetics, as defined by CADE. In addition to the learning outcomes of the M.P.H. degree curriculum (see Public Health Nutrition), graduates will:

- Demonstrate effectiveness in the nutritional care process consistent with competencies defined by the Commission for Accreditation of Dietetic Education (CADE) of the American Dietetic Association (ADA).
- Apply systems management and use of resources to the provision of nutritional services.

### **Educational effectiveness**

Indicators of educational effectiveness include: successful completion of a comprehensive examination, field practicum, field practicum report, food systems management affiliation, clinical affiliation, and exit interview with the department chair.

### **Prerequisite**

- Chemistry through organic (at least 5 quarter units of organic)
- Microbiology
- Physiology

All prerequisites must be completed with a passing grade of "B" or better.

### **Culminating experience**

Included in the culminating experience are a written comprehensive examination, a field practicum/ research report and an exit interview with the director of the program at the conclusion of the program.

### **Total minimum required units**

58

### **Individuals who may benefit from the program**

Graduates with bachelor's degrees or higher who seek credentialing as registered dietitians (RDs).

### **NUTRITION—M.S.**

MICHELLE WIEN, Program Director

### **Description**

The Master of Science (M.S.) degree Nutrition Program is suitable for persons planning to pursue a doctoral degree in nutrition or other related areas and for persons preparing to teach at the secondary or university level. The program provides background experience for those interested in research careers in academic or industry settings and provides advanced training in basic nutrition for physicians and other health professionals.

### **Learner outcomes**

The M.S. degree Nutrition Program is offered to meet the specific needs of those who desire advanced training in nutritional sciences. Upon completion of the program, graduates will:

- Understand physiological and biochemical mechanisms influencing human systems and how food and nutrients impact function.
- Understand the role of vegetarian dietary practices in human health, the environment, and ecology.
- Demonstrate the ability to conduct and publish applied research in nutrition.

### **Educational effectiveness**

Indicators of educational effectiveness include successful completion of a comprehensive examination, oral defense of a thesis project, a publishable paper, and an exit interview with the department chair.

### **Prerequisites**

- Basic nutrition
- General chemistry through organic

- Microbiology
- Physiology
- Nutritional metabolism\*
- Biochemistry\*

\* These courses can be taken concurrently with the M.S. degree program if not previously passed with a "B" grade or better.

### Culminating experience

Included in the culminating experience are a written comprehensive examination prior to the thesis experience, one publishable paper upon completion of the thesis experience, and an exit interview with the department chair at the conclusion of the program.

### Total minimum required units

48

### Individuals who may benefit from the program

Persons who hold a baccalaureate degree in science, or physicians and other health professionals who desire the further pursuit of teaching or a doctoral degree, may benefit from the program; as well as persons who desire training in nutritional sciences to prepare them for conducting and publishing applied nutrition research.

#### Corequisites

Units do not count toward degree

		MPH		
		MPH	with RD	MS
DTCS 343	Medical Nutrition Therapy II		5.0	
DTCS 554	Advanced Medical Nutrition Therapy		3.0	
DTCS 566	Food Chemistry and Experimental Foods		4.0	
DTCS 575	Food Systems Management		4.0	
DTCS 777	Food Systems Management- Affiliation		6.0	
DTCS 778	Clinical Nutrition Affiliation		12.0	
NUTR 490	Topics in Foods and Food Preparation	1.0	1.0	
NUTR 504	Nutritional Metabolism	5.0	5.0	
NUTR 526	Nutrition Counseling and Education		2.0	
NUTR 537	Nutrition Education Practicum		1.0	
Totals		—	—	—

		MPH		
		MPH	with RD	MS
ENVH 509	Principles of Environmental Health	3.0	3.0	
EPDM 509	Principles of Epidemiology I	3.0	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0	2.0	
HADM 509	Principles of Health Policy and Management	3.0	3.0	
HPRO 509	Principles of Health Behavior	3.0	3.0	
HPRO 536	Program Planning and Evaluation	2.0	2.0	
NUTR 510	Advanced Public Health Nutrition	3.0	3.0	

PHCJ 605	Overview of Public Health		1.0	1.0	1.0
PHCJ 675	Integrated Public Health Capstone		2.0	2.0	
RELE 534	Ethical Issues in Public Health		3.0	3.0	3.0
STAT 514	Intermediate Statistics for Health-Science Data				3.0
STAT 548	Analytical Applications of SAS (2.0)	Choose one course	—	—	2.0
STAT 549	Analytical Applications of SPSS (2.0)				
STAT 509	General Statistics (4.0)	Choose one course	4.0	4.0	4.0
STAT 521	Biostatistics I (4.0)				
Totals			29.0	29.0	16.0

		MPH		
Major		MPH	with RD	MS
NUTR __	Nutrition			8.0
NUTR 510	Advanced Public Health Nutrition			3.0
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4.0	4.0	4.0
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4.0	4.0	4.0
NUTR 519	Phytochemicals			2.0
NUTR 525	Nutrition Policy, Programs, and Services	3.0	3.0	
NUTR 527	Assessment of Nutritional Status	3.0	3.0	
NUTR 531	Community Nutrition Intervention I	2.0	2.0	
NUTR 532	Community Nutrition Intervention II	1.0	1.0	
NUTR 534	Maternal and Child Nutrition		3.0	
NUTR 564	Contemporary Issues of Vegetarian Diets	2.0	2.0	2.0
NUTR 605	Seminar in Nutrition	1.0	1.0	1.0
Totals		20.0	23.0	24.0

		MPH		
Electives		MPH	with RD	MS
Choose from the following or in consultation with advisor				
DTCS 554	Advanced Medical Nutrition Therapy (3.0)	5.0	3.0	2.0
NUTR 519	Phytochemicals (2.0)			
NUTR 526	Nutrition Counseling and Education (2.0)			
NUTR 543	Concepts in Nutritional Epidemiology (3.0)			
NUTR 578	Exercise Nutrition (2.0)			
NUTR 585	Topics in Global Nutrition (3.0)			
STAT 515	Grant- and Contract-Proposal Writing (3.0)			
Totals		5.0	3.0	2.0

Statistics and research		MPH		
		MPH	with RD	MS
NUTR 535	Research Applications in Nutrition		3.0	
NUTR 539	Research Methods in Nutrition	2.0		2.0
NUTR 694	Research (1.0-12.0)			6.0
NUTR 695	Thesis			2.0
Totals		2.0	3.0	10.0

Practicum (supervised practice)			MPH		
			MPH	with RD	MS
Practicum units are in addition to the minimum graduate units required for the degree.					
NUTR 694	Research (2.0)	One course required	—	—	—
NUTR 798D	Field Practicum (12.0)				
NUTR 798D	Field Practicum		12.0		
Totals			—	—	—
<b>Overall Totals</b>			<b>56.0</b>	<b>58.0</b>	<b>52.0</b>

## NUTRITION—DR.P.H.

SUJATHA RAJARAM, Program Director

### Description

The Doctor of Public Health (Dr.P.H.) degree Nutrition Program is designed to provide advanced knowledge, skills, and competencies required to meet the increasing needs of public health nutrition at the doctoral level in the areas of program management, leadership, and research. Research emphasis is on community nutrition program research, as well as the relation of dietary practices to health promotion and disease prevention.

### Learner outcomes

Upon completion of the program, graduates will:

- Contribute to the theory and practice of public health nutrition
- Apply statistical tools in managing and analyzing data
- Demonstrate the ability to produce scientific papers and presentations
- Demonstrate effective leadership skills

### Educational effectiveness

- Comprehensive examination
- Written research proposal
- Two publishable scientific papers
- One presentation at a scientific meeting

### Prerequisite

- A master's degree in nutrition or a health professional degree at the doctoral level (M.D., D.D.S., or equivalent)

- Advanced biochemistry (may be taken concurrently with the program)
- Anatomy and physiology
- Behavioral science (one course)
- Quantitative proficiency

All prerequisites must be completed with a passing grade of "B" or better.

#### Corequisites

May be taken during first two quarters of program, in addition to units required for degree; advanced standing from previous M.P.H. degrees considered

		Units
ENVH 509	Principles of Environmental Health	3.0
EPDM 509	Principles of Epidemiology I	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0
HADM 509	Principles of Health Policy and Management	3.0
HPRO 509	Principles of Health Behavior	3.0
HPRO 536	Program Planning and Evaluation	2.0
NUTR 509	Public Health Nutrition and Biology	3.0
PHCJ 605	Overview of Public Health	1.0
PHCJ 675	Integrated Public Health Capstone	2.0
STAT 509	General Statistics	4.0
<b>Totals</b>		—

#### Public Health

		Units
RELE 5__	Graduate-level Ethics	3.0
RELR 5__	Graduate-level Relational	3.0
RELT 5__	Graduate-level Theological	3.0
STAT 514	Intermediate Statistics for Health-Science Data	3.0
STAT 515	Grant- and Contract-Proposal Writing	3.0
STAT 549	Analytical Applications of SPSS	2.0
EPDM 5__	Epidemiology Elective (2 to 3)	Choose in consultation with advisor 4.0-6.0
STAT ___	Statistics (2 to 3)	
<b>Totals</b>		21.0-23.0

#### Major

		Units
NUTR 510	Advanced Public Health Nutrition	3.0
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4.0
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4.0
NUTR 519	Phytochemicals	2.0
NUTR 525	Nutrition Policy, Programs, and Services	3.0
NUTR 527	Assessment of Nutritional Status	3.0
NUTR 534	Maternal and Child Nutrition	3.0
NUTR 543	Concepts in Nutritional Epidemiology	3.0
NUTR 564	Contemporary Issues of Vegetarian Diets	3.0
NUTR 608	Doctoral Seminar in Public Health Nutrition (1.0-3.0)	3.0
<b>Totals</b>		31.0

<b>Electives</b>			Units
NUTR ____	Nutrition	Choose 20.0 units, in consultation with advisor, from the areas of Nutrition, Public Health, Basic Science or Leadership & Administration; a minimum of eight (8.0) units must be from NUTR	20.0
Totals			20.0

<b>Research and evaluation</b>			Units
NUTR 539	Research Methods in Nutrition		2.0
NUTR 685	Preliminary Research Experience		2.0
NUTR 694	Research (1.0-12.0)		4.0-6.0
PHCJ 604	Research Seminar		2.0
STAT 564	Survey and Advanced Research Methods		3.0
Totals			13.0-15.0

<b>Dissertation</b>			Units
NUTR 698	Dissertation (1.0-14.0)		12.0
Totals			12.0
<b>Overall Totals</b>			<b>99.0</b>

### **Culminating experience**

As a part of the culminating experience, the student completes two publishable scientific papers.

### **Total minimum required units**

99

### **Individuals who may benefit from the program**

Those who may benefit from the program include individuals seeking careers in:

- Academia and research.
- Leadership in public health nutrition in government and nonprofit organizations.

## Preventive Care—PH

Dr.P.H.

SERENA TONSTAD, Program Director

The Preventive Care Program is designed to prepare specialists in wellness and lifestyle management intervention. Emphasis is on academic preparation, practical skills, and administrative abilities in developing, implementing, and evaluating programs and protocols designed to address a wide spectrum of health issues—particularly those dealing with chronic disease. These programs and protocols include health risk appraisal, nutritional assessment and recommendations, exercise testing and prescription, and smoking and other substance abuse counseling.

The program seeks to demonstrate and elucidate the intimate connection between mind and body. Graduates address the combined influences of nutrition, exercise, stress, substance abuse, and other lifestyle factors on the promotion of health and the prevention of disease. This program is offered by the Department of Health Promotion and Education.

### LEARNER OUTCOMES

Upon completion of this program, the graduate should be able to:

1. Design and implement wellness and lifestyle intervention protocols.
2. Provide chemical dependency interventions.
3. Support comprehensive health management of individuals.
4. Contribute to the theory and practice of preventive care through research.
5. Develop and conduct community and professional seminars and training programs.
6. Demonstrate leadership skills.

### EDUCATIONAL EFFECTIVENESS INDICATORS

- Comprehensive examination
- Qualifying examination
- Internship practice hours
- Advancement to candidacy
- Dissertation defense
- Publishable research paper
- Portfolio review
- Exit interview

### Prerequisite

- Graduate degree or equivalent in an appropriate field
- Graduate Record Examination (GRE) or MCAT within the past seven years
- General chemistry
- Organic chemistry

- Microbiology
- Anatomy and/or Physiology
- General psychology

## DEGREE REQUIREMENTS

Prior to completing 32 graduate units in the program, the student must submit a proposed curriculum outline that includes the preventive care cognates or electives s/he plans to complete. This outline must be approved by the student's advisor prior to submission.

### Corequisites

May be taken during first two quarters of program, in addition to units required for degree; advanced standing from previous M.P.H. degrees considered

		Units
ENVH 509	Principles of Environmental Health	3.0
EPDM 509	Principles of Epidemiology I	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0
HADM 509	Principles of Health Policy and Management	3.0
HPRO 501	Human Anatomy and Physiology I	6.0
HPRO 502	Human Anatomy and Physiology II	6.0
HPRO 509	Principles of Health Behavior	3.0
HPRO 519	Pharmacology	3.0
HPRO 531	Pathology of Human Systems I	3.0
HPRO 532	Pathology of Human Systems II	3.0
HPRO 536	Program Planning and Evaluation	2.0
NUTR 509	Public Health Nutrition and Biology	or NUTR 510
PHCJ 605	Overview of Public Health	1.0
STAT 509	General Statistics	or STAT 521
	Totals	—

### Major

		Units
HPRO 515	Mind-Body Interactions and Health Outcomes	3.0
HPRO 526	Lifestyle Diseases and Risk Reduction	3.0
HPRO 527	Obesity and Disordered Eating	3.0
HPRO 529	Preventive and Therapeutic Interventions in Chronic Disease	4.0
HPRO 553	Addiction Theory and Program Development	3.0
HPRO 565	Tobacco Use: Prevention and Interventions	3.0
HPRO 573	Exercise Physiology I	3.0
HPRO 575	Immune System: Public Health Applications	3.0
HPRO 578	Exercise Physiology II	3.0
HPRO 586	Introduction to Preventive Care	1.0
HPRO 587	Preventive Care Practice Management	2.0
HPRO 588	Health Behavior Theory and Research	4.0
HPRO 606	Motivational Interviewing	2.0
NUTR 504	Nutritional Metabolism	5.0
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4.0

NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals		4.0
NUTR 556	Nutritional Applications in Lifestyle Intervention		1.0
NUTR 578	Exercise Nutrition		2.0
EPDM 565	Epidemiology of Cancer (3)	Choose one course	3.0
EPDM 566	Epidemiology of Cardiovascular Disease (3)		
Totals			56.0

**Cognates or electives**

Cognate or elective courses are to be chosen in consultation with the student's advisor, taking into consideration the student's previous experience and present interests. These units may be selected from courses offered by the School of Public Health or by other schools within the University; and must reflect a specific preventive care emphasis, clinical practice focus, or additional statistical or data analysis that will be required by the student's dissertation research.

		Units
___	Elective	12.0
Totals		12.0

**Religion**

One course required from each of the following three areas. May include one additional elective.

		Units
RELR 5__	Graduate-level Relational	3.0
RELE 5__	Graduate-level Ethics	3.0
RELT 5__	Graduate-level Theological	3.0
Totals		9.0

**Research and evaluation**

		Units
HPRO 534A	Research Methods	2.0
HPRO 534B	Research Methods	2.0
HPRO 694	Research (1.0-14.0)	6.0
PHCJ 604	Research Seminar	2.0
STAT 514	Intermediate Statistics for Health-Science Data	3.0
STAT 568	Data Analysis	3.0
STAT 548	Analytical Applications of SAS (2) <i>Students taking STAT 548 should also take STAT 569. Note the SAS-based sequence: STAT 521, STAT 548, STAT 522, STAT 569.</i>	Choose one course 2.0
STAT 549	Analytical Applications of SPSS (2)	
Totals		20.0

**Research and dissertation**

		Units
HPRO 698	Dissertation (1.0-14.0)	12.0
Totals		12.0

**Internship**

Internship units are in addition to the minimum graduate units required for the degree.

Units

HPRO 704A	Internship (3)	(42 units required = 1400 clock hours)	—
HPRO 704B	Internship (6)		
HPRO 704C	Internship (9)		
HPRO 704D	Internship (12)		
Totals			—
<b>Overall Totals</b>			<b>109.0</b>

## Public Health Practice—PH

M.P.H. (traditional, online)

LORI WILBER, Program Director

### PROGRAM FORMATS

- Traditional, on-campus
- Online

### DESCRIPTION

The Public Health Practice program is designed to meet the needs of practicing health professionals who have experience in direct patient care and wish to augment their current careers with additional information and skills in a population approach.

Individuals who may benefit from this program include practicing health professionals, such as physicians, dentists, pharmacists, nurses, social workers, physical therapists, and psychologists. This degree is not designed for students entering graduate school directly from an undergraduate degree program; nor will it serve as a foundation for a major career change.

### LEARNER OUTCOMES

Upon completion of this degree, the graduate should be able to:

1. Apply epidemiological methods to the prevention and treatment of acute and chronic disease.
2. Use basic and advanced statistical methods to correctly interpret data.
3. Incorporate effective management approaches into public health settings.
4. Promote the use of clinical preventive services.
5. Evaluate and minimize risk in lifestyle diseases.
6. Apply population medicine skills in community settings.

### INDICATORS OF EDUCATIONAL EFFECTIVENESS

1. Major papers and projects
2. Community practicum report
3. Capstone project
4. Professional portfolio
5. Exit interview

### Prerequisite

- An appropriate combination of a health-related degree and postgraduation direct patient care experience in a health setting, such as a hospital, clinic, or health department.

Degree	Experience
Associate*: (e.g., nursing)	5 years
Bachelors or Masters: (e.g., nursing, social work, dental hygiene, physical therapy, occupational therapy, psychology)	2 years
Doctoral: (e.g., M.D., D.O., D.D., Pharm.D.)	Satisfied by degree

\* In addition to a nonhealth-related bachelor's degree

- GRE examination (waived for M.D., D.O., D.D.S., Pharm.D., and Ph.D.)
- Anatomy and/or Physiology (one course)
- Behavioral science (one course)

## Corequisite

PHCJ 501 or demonstration of online computer literacy

Public health core		On	
		Campus	Online
ENVH 509	Principles of Environmental Health	3.0	3.0
EPDM 509	Principles of Epidemiology I	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0	2.0
HADM 509	Principles of Health Policy and Management	3.0	3.0
HPRO 509	Principles of Health Behavior	3.0	3.0
HPRO 536	Program Planning and Evaluation	2.0	2.0
NUTR 509	Public Health Nutrition and Biology	3.0	3.0
PHCJ 605	Overview of Public Health	1.0	1.0
PHCJ 675	Integrated Public Health Capstone	2.0	2.0
RELE 534	Ethical Issues in Public Health	3.0	3.0
STAT 509	General Statistics	4.0	4.0
Totals		29.0	29.0

Major		On	
		Campus	Online
EPDM 528	Applied Epidemiology and Clinical Preventive Services	3.0	3.0
HADM 528	Organizational Behavior in Health Care	3.0	3.0
HPRO 526	Lifestyle Diseases and Risk Reduction	3.0	3.0
STAT 528	Applied Statistics for Clinicians	3.0	3.0
Totals		12.0	12.0

**Selected electives**

May include

**On  
Campus    Online**

		On Campus	Online
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3.0)	Choose from these courses	11.0
EPDM 699A	Applied Research (1.0)		
EPDM 699B	Applied Research II (1.0)		
EPDM 699C	Applied Research III (1.0)		
EPDM 699D	Applied Research IV (1.0)		
GLBH 519	Principles of Disaster Management I (3.0)		
GLBH 520	Principles of Disaster Management II (3.0)		
GLBH 521	Principles of Disaster Management III (3.0)		
GLBH 547	Refugee and Displaced Population Health (3.0)		
GLBH 548	Violence and Terrorism Issues (3.0)		
GLBH 557	Epidemiology of Disasters (3.0)		
GLBH 558	Public Health Issues in Emergencies (3.0)		
GLBH 559	Psychosocial Models and Interventions (3.0)		
GLBH 560	Economic, Legal, and Policy Issues in Disasters (3.0)		
GLBH 561	Epidemiology of Tobacco Use and Control I (3.0)		
GLBH 562	Epidemiology of Tobacco Use and Control II (3.0)		
HADM 510	Health Policy Analysis and Synthesis (3.0)		
HADM 514	Health Care Economic Policy (3.0)		
HADM 604	Health Systems Strategic Planning (3.0)		
HPRO 507	Spirituality and Health: The Wholeness Connection (3.0)		
HPRO 515	Mind-Body Interactions and Health Outcomes (3.0)		
HPRO 553	Addiction Theory and Program Development (3.0)		
HPRO 565	Tobacco Use: Prevention and Interventions (3.0)		
NUTR 529	Health Aspects of Vegetarian Eating (2.0)		
NUTR 534	Maternal and Child Nutrition (3.0)		

EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3.0)		—	11.0
EPDM 699A	Applied Research (1.0)			
EPDM 699B	Applied Research II (1.0)			
EPDM 699C	Applied Research III (1.0)			
EPDM 699D	Applied Research IV (1.0)			
GLBH 519	Principles of Disaster Management I (3.0)			
GLBH 520	Principles of Disaster Management II (3.0)			
GLBH 521	Principles of Disaster Management III (3.0)			
GLBH 547	Refugee and Displaced Population Health (3.0)			
GLBH 548	Violence and Terrorism Issues (3.0)			
GLBH 557	Epidemiology of Disasters (3.0)			
GLBH 558	Public Health Issues in Emergencies (3.0)			
GLBH 559	Psychosocial Models and Interventions (3.0)			
GLBH 560	Economic, Legal, and Policy Issues in Disasters (3.0)			
GLBH 561	Epidemiology of Tobacco Use and Control I (3.0)			
GLBH 562	Epidemiology of Tobacco Use and Control II (3.0)			
HADM 510	Health Policy Analysis and Synthesis (3.0)			
HADM 514	Health Care Economic Policy (3.0)			
HADM 604	Health Systems Strategic Planning (3.0)			
HPRO 507	Spirituality and Health: The Wholeness Connection (3.0)			
HPRO 515	Mind-Body Interactions and Health Outcomes (3.0)			
HPRO 553	Addiction Theory and Program Development (3.0)			
HPRO 565	Tobacco Use: Prevention and Interventions (3.0)			
NUTR 529	Health Aspects of Vegetarian Eating (2.0)			
NUTR 534	Maternal and Child Nutrition (3.0)			
Totals			11.0	11.0

Practicum		On	
		Campus	Online
PHCJ 695	Community Practicum	400 clock hours	
		4.0	4.0
Totals		4.0	4.0
<b>Overall Totals</b>		<b>56.0</b>	<b>56.0</b>

## Community practicum

The community practicum provides opportunities for students to integrate the multiple skills they have learned with the practice of public health in a community setting. Students complete 400 hours of service, typically at a public health or other service organization, to make a creative contribution to the community.

Successful completion of a set of comprehensive, integrated activities is required. The culminating activity shall include several or all of the following: a written comprehensive examination prior to the

field experience, field experience upon completion of essential major course work, professional portfolio upon completion of the field experience, and an exit interview with the department chair at the conclusion of the program.

### **Culminating experience**

1. Professional portfolio
2. Exit interview with the department chair

### **Individuals who may benefit**

Individuals who may benefit from this program include health care working professionals (e.g., physicians, nurses, dentists, social workers, psychologists, public health practitioners, health administrators, etc.) who seek general training in public health.

## Certificates

To earn a certificate students must successfully complete at least 27 academic units and share no more than 9 units with a degree program.

## Biostatistics—PH

### Certificate

MARK GHAMSARY, Program Director

There is a growing need to be able to interpret scientific literature, establish databases, and do simple descriptive and analytical statistical analyses. There is also a need for professionals in other disciplines to have a basic knowledge of analytical strategies and biostatistical reasoning and thinking. This biostatistics certificate gives the holder the ability to read scientific literature more knowledgeably, collaborate with statisticians, and interpret and evaluate data that are presented.

### LEARNER OUTCOMES

Upon completion of this certificate, students will be able to:

1. Critically read the literature with respect to design and statistical analysis.
2. Interpret and communicate the results of basic statistical analyses.
3. Assemble data and create a database ready for analysis.
4. Select statistical analysis using basic statistical tests and current statistical software (e.g., SAS or SPSS).

### INDICATORS OF EDUCATIONAL EFFECTIVENESS

1. Midterm and comprehensive final examinations
2. Course evaluation forms
3. Oral presentations of class projects

### PREREQUISITE

- U.S. baccalaureate degree or its equivalent
- Calculus (one course)

### FORUMS

Students are required to attend a minimum of eight forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their program.

Public health core		Basic	
		Cert	Adv Cert
EPDM 509	Principles of Epidemiology I	3.0	
RELE 5__	Graduate-level Ethics		3.0
RELE 534	Ethical Issues in Public Health	3.0	
STAT 521	Biostatistics I	4.0	
Totals		10.0	3.0

<b>Major</b>		<b>Basic</b>	
		<b>Cert</b>	<b>Adv Cert</b>
EPDM 510	Principles of Epidemiology II		3.0
EPDM 515	Clinical Trials		3.0
STAT 515	Grant- and Contract-Proposal Writing	3.0	
STAT 522	Biostatistics II	4.0	
STAT 523	Biostatistics III		4.0
STAT 525	Applied Multivariate Analysis		3.0
STAT 535	Introduction to Modern Nonparametric Statistics	3.0	
STAT 545	Survival Analysis		3.0
STAT 557	Research Data Management	3.0	
STAT 564	Survey and Advanced Research Methods		3.0
STAT 594	Statistical Consulting		2.0
STAT 694A	Research I		1.0
STAT 694B	Research II		1.0
STAT 694C	Research III		1.0
STAT 548	Analytical Applications of SAS (2.0)	Choose one course	2.0
STAT 549	Analytical Applications of SPSS (2.0)		
Totals		15.0	24.0

<b>Research</b>		<b>Basic</b>	
		<b>Cert</b>	<b>Adv Cert</b>
STAT 694A	Research I	1.0	
STAT 694B	Research II	1.0	
Totals		2.0	—
<b>Overall Totals</b>		<b>27.0</b>	<b>27.0</b>

# Emergency Preparedness and Response—PH

## Certificate

EHREN NGO, Program Director

### PURPOSE

The Emergency Preparedness and Response Certificate Program will provide students with the knowledge and skills to effectively plan, implement, and evaluate domestic and international public health emergency response and recovery efforts.

### OUTCOME OBJECTIVES

Upon completion of this program, students should be prepared to:

1. Take leadership and management roles in disaster preparedness and response.
2. Design a preparedness and response plan.
3. Create, execute, and evaluate tabletop exercises and drills.
4. Evaluate and assess community and institutional capacity for emergency preparedness and response.
5. Address the major public health issues that arise during emergencies.

### INDIVIDUALS WHO MAY BENEFIT FROM THIS PROGRAM

- Government officials, i.e., public health, office of emergency preparedness, and native American tribal governments and bioterrorism coordinators
- Local city, county, and health workers
- Hospital/health care administrators and clinicians
- Emergency, fire, law enforcement
- Private industry
- Nongovernmental organizations/private voluntary organizations
- Students
- First responders

### PREREQUISITE

- Bachelor's degree from an accredited college or university, with a minimum G.P.A. of 2.7.

<b>Required</b>		Units
GLBH 519	Principles of Disaster Management I	3.0
GLBH 520	Principles of Disaster Management II	3.0
GLBH 521	Principles of Disaster Management III	3.0
GLBH 558	Public Health Issues in Emergencies	3.0
GLBH 559	Psychosocial Models and Interventions	3.0
GLBH 560	Economic, Legal, and Policy Issues in Disasters	3.0
RELE 534	Ethical Issues in Public Health	3.0
Totals		21.0

**Electives**

Minimum of 6 units

		Units
ENVH 524	GIS Software Applications and Methods (3)	6.0
ENVH 527	Geospatial Technologies for Emergency Preparedness and Management (3)	
GLBH 547	Refugee and Displaced Population Health (3)	
GLBH 548	Violence and Terrorism Issues (3)	
GLBH 555	Technology in Emergency Management (3)	
GLBH 557	Epidemiology of Disasters (3)	
Totals		6.0
<b>Overall Totals</b>		<b>27.0</b>

# Epidemiology – PH

## Certificate

W. LAWRENCE BEESON, Program Director

### **BASIC EPIDEMIOLOGY – CERTIFICATE**

There is a growing need to be able to read and evaluate scientific medical literature; understand basic study designs, problems, and biases associated with different designs; and do simple descriptive and analytical statistical analyses. There is also a need for professionals in other disciplines to have at least a minimal knowledge of research design and analytical reasoning. The purpose of the certificate in basic epidemiology is to enable the holder to more effectively read scientific literature, design clinical research studies, and evaluate study designs and associated data.

### **Learner outcomes**

Upon completion of this certificate, students will be able to:

- Critically read and interpret the medical literature.
- Conduct disease surveillance, as practiced in state and county health departments.
- Design epidemiologic studies, including clinical trials.
- Utilize databases and perform and interpret simple statistical analyses.

### **Indicators of educational effectiveness**

1. Research project
2. Oral presentation
3. Written paper

### **Prerequisite**

- U.S. baccalaureate degree or its equivalent
- Biological science (two courses)
- Calculus (one course)
- Behavioral science (one course, e.g., general psychology, sociology)

### **Forums**

Students are required to attend a minimum of eight forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their certificate program.

# Epidemiological Research Methods—PH

## Certificate

W. LAWRENCE BEESON, Program Director

## PURPOSE

The purpose of this certificate is to enable the holder to more effectively apply for and design research studies and surveys and do basic descriptive analyses of collected data.

## LEARNER OUTCOMES

At the completion of this certificate, students should be able to:

1. Critically read and interpret the medical literature.
2. Write applications for research and survey grants.
3. Design research studies and surveys/questionnaires, including special designs for developing countries.
4. Perform and interpret simple statistical analyses.

## INDICATORS OF EDUCATIONAL EFFECTIVENESS

1. Research project
2. Oral presentation
3. Written report

## PREREQUISITE

- U.S. baccalaureate degree or its equivalent
- Two courses in biological science
- Calculus (one course)

## FORUMS

Participants are required to attend a minimum of eight forums in the Department of Epidemiology and Biostatistics and/or Adventist Health Study during their certificate program.

Required		Units
EPDM 509	Principles of Epidemiology I	3.0
EPDM 510	Principles of Epidemiology II	3.0
EPDM 515	Clinical Trials	3.0
EPDM 568	International Epidemiology	2.0
RELE 534	Ethical Issues in Public Health	3.0
STAT 509	General Statistics	4.0
STAT 515	Grant- and Contract-Proposal Writing	3.0
STAT 564	Survey and Advanced Research Methods	3.0
Totals		24.0

**Descriptive epidemiology**

Units

EPDM 534	Epidemiology of Maternal-Child Health (3)	Choose one course	3.0
EPDM 544	Epidemiology of Infectious Disease (3)		
EPDM 565	Epidemiology of Cancer (3)		
EPDM 566	Epidemiology of Cardiovascular Disease (3)		
EPDM 567	Epidemiology of Aging (3)		
EPDM 588	Environmental and Occupational Epidemiology (3)		
Totals			3.0
<b>Overall Totals</b>			<b>27.0</b>

# Health Geoinformatics—PH

## Certificate

SETH WIAFE, Program Director

The Health Geoinformatics Certificate Program is designed primarily for health professionals and students who have completed a bachelor's degree (or equivalent) from an accredited college or university with a cumulative G.P.A. of at least 3.0. Qualified candidates must demonstrate computer proficiency, although no previous experience with geographic information systems (GIS) technology is required. Advanced placement can be considered for applicants with previous GIS experience/training. In addition, interested Loma Linda University students, staff, and faculty who would like to learn about GIS applications in health may also apply.

## LEARNER OUTCOMES

Upon successful completion of this program, students will be able to:

1. Use principles of geospatial information science as they relate to health research and practice.
2. Use state-of-the-art GIS software applications and techniques for accessing the spatially defined health information for building related, useful geodatabases.
3. Use effective geospatial data while producing and publishing customized maps and other visual displays of health data.
4. Employ GIS-based methods and techniques of spatial analysis that support health research and decision making in public health practice and policy.
5. Competently apply geospatial technology and methods in at least one key area of health geographics, such as disease mapping, tracking and assessment of environmental hazards and exposure, health planning and policy, community health, health education and communication, analysis of access to health services, or health care geographics.
6. Implement and manage health GIS projects in government, nongovernment, and community settings.

## INDICATORS OF EDUCATIONAL EFFECTIVENESS

1. Class project (course specific, at the discretion of the instructor)
2. Oral presentation (course specific, at the discretion of the instructor)
3. Portfolio (course specific, at the discretion of the instructor)
4. Participation in a qualifying examination offered annually by SkillsUSA, an organization that has partnered with the geospatial industry to develop a competition program that provides universities, colleges, and their students a way of validating their geospatial programs and measuring them against national standards.

Note: Indicators 1, 2, and 3 are course specific at the discretion of the instructor.

## PREREQUISITE

Applicants must have at least a bachelor's degree (or equivalent), with a cumulative G.P.A. of at least 3.0.

For those who meet the foregoing basic admission prerequisite, the program is open to health professionals, students, current Loma Linda University students enrolled in a master's or doctoral degree program, Loma Linda University faculty and staff (tuition benefits may apply), and anyone interested in GIS applications in the health field.

### CERTIFICATE REQUIREMENTS

To earn the certificate, students must successfully complete at least 27 academic units, as listed below. Core requirements include courses in the two main areas of GIS fundamentals and techniques (17 units) and health geographics electives (at least 7 units). In addition, 3 units of ethical issues in public health are required.

No more than 9 units of any certificate program can be shared with another degree including public health core.

Required		Units
ENVH 521	Cartography and Map Design	2.0
ENVH 522	Principles of Geographic Information Systems and Science	3.0
ENVH 523	Practical Issues in GIS	3.0
ENVH 524	GIS Software Applications and Methods	3.0
ENVH 526	Seminar in Geographic Information Systems	1.0
ENVH 535	Integration of Geospatial Data in GIS	2.0
ENVH 536	Spatial Analytic Techniques and GIS	3.0
RELE 534	Ethical Issues in Public Health	3.0
Totals		20.0

Electives		Units
ENVH 527	Geospatial Technologies for Emergency Preparedness and Management (3)	Minimum of 7 units
ENVH 537	Health Care Geographics (2)	
ENVH 539	GIS Applications in Environmental Health (2)	
ENVH 546	Introduction to Spatial Epidemiology (2)	
ENVH 547	GIS for Public Health Practice (2)	
ENVH 549	Remote Sensing Applications in the Health Services (3)	
Totals		7.0
<b>Overall Totals</b>		<b>27.0</b>

### ENROLLMENT OPTIONS

#### For credit

Students who desire to obtain the certificate may apply online at <llu.edu/central/apply>. Click on "Apply now" and, after successful log-in, select "Geoinformatics, PB CERT, on-campus" from the list of programs, then continue.

**Audit**

Students may also register to take classes on an audit basis. Classes registered not for credit will not be reregistered for credit in the future. The cost per unit is US\$ 267.50 (subject to change).

**Nondegree**

Students may take classes in the program as nondegree. Nondegree students are allowed to take a maximum of 12 units prior to acceptance into a degree program. Download application forms at <llu.edu/ssweb/documents/nondegree.pdf>. Instruction for nondegree registration can be found at <llu.edu/ssweb/documents/non-degree-reg.pdf>. The cost per unit is US\$ 535 (subject to change).

**FOR ADDITIONAL INFORMATION**

Web: <llugis.org>

Seth Wiafe, M.P.H., GISP, Assistant Professor, Health Geographics

Telephone: 909/558-7596

Email: swiafe@llu.edu

## **Lifestyle Intervention – PH**

Certificate

Currently closed for enrollment.

# Maternal and Child Health—PH

## Certificate

NAOMI MODESTE, Program Director

The purpose of this certificate is to familiarize students with the complex issues associated with planning, implementing, and evaluating maternal and child health programs for men and women.

## LEARNER OUTCOMES

Upon completion of this program, students will be able to:

- Describe key public health issues in the field of maternal and child health.
- Utilize principles of behavior change in the promotion of maternal and child health.
- Plan, implement, and evaluate public health programs addressing multifaceted, integrated programs in maternal and child health based on current operational models.

## EDUCATIONAL EFFECTIVENESS

1. Appropriate course assignments and projects
2. G.P.A. of at least 3.0
3. Completion of certificate requirements

## ADMISSIONS REQUIREMENTS

This certificate program is primarily designed for M.P.H. degree or doctoral students whose focus is not maternal and child health, and is offered in conjunction with these programs. Health professionals who have completed a bachelor's degree (or equivalent) from an accredited college or university with a cumulative G.P.A. of 3.0 or higher may also be admitted into the program.

Required		Units
HPRO 509	Principles of Health Behavior	3.0
HPRO 523	Maternal/Child Health: Policy and Programs	3.0
HPRO 536	Program Planning and Evaluation	2.0
HPRO 550	Women in Development	3.0
HPRO 553	Addiction Theory and Program Development	3.0
HPRO 556	High-Risk Infants and Children: Policy and Programs	3.0
HPRO 567	Reproductive Health	3.0
HPRO 614	Seminar in Maternal and Child Health Practice	2.0
RELE 534	Ethical Issues in Public Health	3.0
NUTR 509	Public Health Nutrition and Biology (3)	Choose one
NUTR 510	Advanced Public Health Nutrition (3)	
Totals		28.0
<b>Overall Totals</b>		<b>28.0</b>

# Tobacco Control Research Methods—PH

## Certificate

PRAMIL N. SINGH, Program Director

Tobacco consumption continues to be a major public health challenge, both globally and in the U.S.A. According to the World Health Organization, an estimated 4.2 million deaths are attributable to tobacco use annually. In the U.S.A., more than 400,000 individuals (30 percent of cancer mortality) die from tobacco-related causes every year. Although a variety of strategies are being used to address the tobacco use problem, there is a dearth of academic-based programs to educate health professionals who will function as effective practitioners and researchers in tobacco-use prevention and treatment.

The program is offered as a combination of online courses, on-campus courses, and a mentored research project. The online course work on tobacco control epidemiology, prevention and treatment is made possible through a grant from the Association of Schools of Public Health and the American Legacy Foundation.

## LEARNER OUTCOMES

Upon completion of this certificate program, participants should be able to:

1. Design a survey with population-based variables pertinent to tobacco policy that measures prevalence of tobacco use, knowledge and attitudes about tobacco use, and health behaviors associated with tobacco use.
2. Conduct qualitative studies with population-based variables pertinent to tobacco policy that assess tobacco use; knowledge and attitudes about tobacco use, and health behaviors associated with tobacco use.
3. Design research programs to establish a national and regional baseline and subsequent compliance with conditions set forth by the Framework Convention on Tobacco Control Treaty (WHO) and NPOWER initiative (WHO).
4. Interpret the findings from qualitative and quantitative research on tobacco use for the purpose of planning tobacco prevention and cessation programs.
5. Write focused grant proposals for tobacco control research.
6. Prepare reports of original research in tobacco control research.
7. Be familiar with the authoritative sources of national and global tobacco control data on the Internet and in the published literature (scientific, policy, governmental).

## EDUCATIONAL EFFECTIVENESS

Educational effectiveness will be determined through reading assignments and reports, research papers, oral presentations, group work on proposals, community engagement projects and research, laboratory exercises, case studies, tests, quizzes, field practicum, and exit interview.

## PREREQUISITE

- STAT 509 (or equivalent)
- EPDM 509 (or equivalent)

Competencies from related master's, doctoral, or health professional course work can be used by permission of the instructors and of the certificate program director.

Required		Units
EPDM 568	International Epidemiology	2.0
EPDM 699A	Applied Research	1.0
EPDM 699B	Applied Research II	1.0
EPDM 699C	Applied Research III	1.0
EPDM 699D	Applied Research IV	1.0
GLBH 561	Epidemiology of Tobacco Use and Control I	3.0
GLBH 562	Epidemiology of Tobacco Use and Control II	3.0
HPRO 565	Tobacco Use: Prevention and Interventions	3.0
HPRO 589	Qualitative Research Methods	3.0
RELE 534	Ethical Issues in Public Health	3.0
STAT 515	Grant- and Contract-Proposal Writing	3.0
STAT 564	Survey and Advanced Research Methods	3.0
		Totals
		27.0
		<b>Overall Totals</b>
		<b>27.0</b>

## INDIVIDUALS WHO MAY BENEFIT

- Public health professionals interested in tobacco research and control methods,
- On-campus degree students,
- Online students at domestic and international locations, and
- NIH-funded trainees from Southeast Asia who were enrolled in the Tobacco Control Leadership Training Program.

Certificate program graduates have participated in the design and validation of tobacco surveys, qualitative studies of tobacco users, and the writing of successful grant proposals to conduct large sample tobacco surveys.

## School of Religion

Dean's Welcome

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Clinical Ministry

Religion and the Sciences

CERTIFICATE PROGRAMS

Bioethics

Clinical Ministry

COMBINED DEGREES PROGRAMS

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Bioethics *with* Dentistry

Bioethics *with* Medicine

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Bioethics *with* Social Policy and Social

Research

Clinical Ministry *with* Marital and

Family Therapy

Division of Humanities

## Dean's Welcome

Welcome to the most unusual school of Loma Linda University. The School of Religion has three degree programs that associate areas in the sciences with religion. But the major task of the School of Religion remains enriching programs in the other seven schools of the University with a faith-based, wholistic approach to the health sciences. So, in whatever program you have enrolled, you will come in contact with School of Religion offerings that have been uniquely designed to help you prepare for wholistic ministry within your chosen profession. Studying at Loma Linda University is about more than just careers and professions; it is about mission and purpose for all of life. The School of Religion is pleased to have an important role in helping to prepare you for the most fulfilling life and career possible.



Detailed information about our three master's degrees in religion is contained in this section of the Catalog. These programs have been designed to specifically equip graduates with skills in clinical ministry, bioethics, and religion and the sciences. However, within the framework of our academic programs, we also offer a unique opportunity for LLU students in other professional programs to apply for dual enrollment in either bioethics or clinical ministry. Students enrolled in dentistry (D.D.S.), marital and family therapy (M.S.), medicine (M.D.), nursing (M.S.), psychology (Psy.D. or Ph.D.), and social policy and social research (M.A.) are eligible to apply for admission to the master's degree in either the Bioethics or Clinical Ministry program. Please refer to The Combined Degrees Programs of the University section to learn more about our dual enrollment degree programs.

On behalf of the faculty and staff of the School of Religion, let me personally invite you to seriously consider the courses and the programs that we offer. We can help strengthen your faith; broaden your spiritual and academic horizons; enhance your ability to serve; and prepare you not only for this life, but also for eternity.

May God enrich your studies,

A handwritten signature in black ink that reads "Jon Paulien". The signature is written in a cursive, flowing style.

Jon Paulien, Ph.D.  
Dean, School of Religion

## School Foundations

### HISTORY

In the configuration of Loma Linda University as a health sciences university, the role of religion as integrative in each of the programs of the University is mandated and continuously affirmed by the University administration and the Board of Trustees.

In July of 1990, the Faculty of Religion (now the School of Religion) was established to assist in this integration.

### PHILOSOPHY

As implied by its motto, "To make man whole," the University affirms these tenets as central to its view of education:

- God is the Creator and Sustainer of the universe.
- Mankind's fullest development entails a growing understanding of the individual in relation to both God and society.
- The quest for truth and professional expertise, in an environment permeated by religious values, benefits the individual and society and advances the ministry of the Seventh-day Adventist Church.

### MISSION STATEMENT

The School of Religion is committed to the following four tasks, as informed by the teachings and practice of the Seventh-day Adventist heritage and mission:

1. To promote Christian wholeness for faculty and students in their personal and professional lives and witness.
2. To provide a religion curriculum with the following emphases:
  - Theological studies (biblical, historical, doctrinal, mission, and philosophical).
  - Ethical studies.
  - Relational studies (applied theology, clinical ministry, and psychology of religion).
3. To foster and support research in theological, ethical, and relational disciplines.
4. To serve the University, the church, and the larger world community by personal involvement in fostering deeper spirituality, theological integrity, and social justice.

## General Regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III gives the general setting for the programs of each school and the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

## Application and Admissions

The program admissions committees of the University intend that an applicant to any of the schools is qualified for the proposed curriculum and is capable of profiting from the educational experience offered by this University. The admissions committees of the schools accomplish this by examining evidence of scholastic competence, moral and ethical standards, and significant qualities of character and personality. Applicants are considered for admission only on the recommendation of the program in which study is desired.

### APPLICATION AND ACCEPTANCE

#### Where to apply

Loma Linda University manages all applications through an online process. The application, all required forms, and instructions are available online at <llu.edu/central/apply>.

The School of Religion has a rolling admission policy in which completed applications are reviewed and students are accepted on a continual basis. Applications must be completed by the deadlines listed for the quarter in which the student wishes to enroll:

- Fall Quarter: August 1
- Winter Quarter: November 1
- Spring Quarter: February 1
- Summer Quarter: May 1

#### Application procedure

1. Complete the online application and submit all supporting information, transcripts, test results, and references by the deadlines listed above.
2. Complete official transcripts of all academic records from all colleges, universities, and professional or technical schools should be provided. It is the applicant's responsibility to arrange to have the transcripts, including official English translations and evaluations, if applicable, sent directly by the registrar (or a recognized, authorized institutional representative) of each school attended to the University Admissions Office. Transcripts that come via an intermediary are unacceptable.
3. A personal interview is desirable and should be arranged with the director of the program in which the student wishes to study.

### ADMISSION REQUIREMENTS

A four-year baccalaureate degree (or its equivalent) from an accredited college or university is a prerequisite for admission to the School of Religion. Transcripts of the applicant's scholastic record should show appropriate preparation, in grades and content, for the curriculum chosen.

Since there is some variation in the pattern of undergraduate courses prescribed by different programs, the student should note the specific requirements of the chosen program. Deficiencies may be removed while enrolled; prerequisites must be completed prior to acceptance into the program.

**Scholarship**

Applicants to the Clinical Ministry Program or the Religion and the Sciences Program are expected to present an undergraduate record with a grade point average of B (3.00) or better in the overall program and in the major field. Some students with an overall grade point average between 2.50 and 3.00 may be admitted provisionally to graduate standing, provided the grades during the junior and senior years are superior, or there is other evidence of capability. For scholarship requirements for the Bioethics Program, please go to the Bioethics Program section in this CATALOG.

**Academic probation**

Degree students whose cumulative G.P.A. at the end of any quarter is less than 3.0 will be placed on academic probation. The number of units for subsequent registrations is restricted to a maximum of 12 per quarter. Students who are on academic probation and fail to earn a 3.0 for the next quarter, or who fail to have an overall G.P.A. of 3.0 after two quarters, jeopardize their standing in a degree or certificate program and may be dismissed from school.

**Concurrent admission**

Students may not be admitted to a School of Religion program while admitted to another program at this University or elsewhere. The exception to this are the combined degrees programs, discussed at the end of Section III of this CATALOG.

## Financial Information

The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy in regard to reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs in regard to these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees on the required installments are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### ON- AND OFF-CAMPUS STUDENT HOUSING

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) for housing information and a housing application form.

### ADDITIONAL REQUIREMENTS

For additional policies, governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

## Bioethics—SR

M.A., Certificate (postbaccalaureate)

JAMES W. WALTERS, Program Director

### FACULTY

Roy Branson

Mark F. Carr

Debra Craig

Carla Gober

Andy Lampkin

David R. Larson

Julius Nam

Robert Orr

Richard Rice

Siroj Sorajjakool

Charles W. Teel

Sigve Tonstad

James W. Walters

Gerald R. Winslow

### BIOETHICS—M.A.

The purpose of the Bioethics Program—an interdisciplinary course of graduate study leading to a Master of Arts degree—is to prepare qualified persons to engage in education, research, and service pertinent to the ethical issues in health care and human biology.

This degree is designed primarily for two types of students: those who desire the Master of Arts degree as a step toward graduate work at the doctoral level, and those who wish to acquire the degree in order to complement their career in health care or another field.

This academic program is enhanced by its close association with the Center for Christian Bioethics and its 4,000-volume library.

### Objectives

Graduates of the Bioethics Program will be able to demonstrate:

1. A broad knowledge of the field of bioethics.
2. Mastery of at least one area of bioethical enquiry.
3. Research and writing skills of a caliber to contribute to bioethical literature.
4. An understanding of the relationship among personal, professional, and social ethics.

### Admission

Typically, applicants will meet the following criteria for admission:

1. Minimal GRE percentile scores of 60 (verbal), 60 (analytical writing), and 35 (quantitative). In some professional programs (e.g., M.D. and D.D.S.), students and graduates need not take the GRE, although other requirements apply.

2. An undergraduate grade point average of B+ (3.30) or better in the overall program and in the field of the major.
3. An 800-word essay on the applicant's background and goals and how earning an M.A. degree in bioethics at Loma Linda University is envisioned to further such goals.
4. A personal interview.

More important than any single admissions factor is the cumulative sense that the applicant is capable of and committed to serious academic work. Hence, the applicant might also submit an essay—published or from previous class work—that demonstrates creative, analytical thinking.

Information on admission, tuition, and student life and an online application can be found on the Web at <llu.edu/central/apply>.

### **Course requirements**

In order to receive the Master of Arts degree in bioethics from Loma Linda University, the student will complete a minimum of 48 units of course work as herein specified, with an overall grade average of B+ (3.30) or higher, with no grade lower than a C and with no grade lower than a B- in a required course.

### **Transfer credits**

Students are permitted to transfer up to 9 units of approved graduate level courses from other accredited institutions into the Bioethics Program.

### **Special features**

Masters Seminar-I (RELE 598): This capstone seminar reflects on previous class work and involves integration of conceptual presupposition, ethical theories, and ethical principles. Mastery of a broad knowledge of the field through an examination will be assessed by the bioethics faculty. (All program faculty and students are invited to attend sessions of these two seminars as they choose.)

Masters Seminar-II (RELE 599): Each student enters class with a research paper, likely prepared in an earlier course. With collegial critique, these papers are prepared for publication and submitted to at least one peer-review journal. Papers demonstrate the ability to identify an issue, analyze it, use relevant literature, and creatively conceptualize or even advance the discussion. Papers are usually 20-25 pages long. (All program faculty and students are invited to attend sessions of these two seminars as they choose.)

### **BIOETHICS—CERTIFICATE**

The Bioethics Program certificate is designed to provide basic competence in bioethics to a health care professional. It consists of three core bioethics courses, plus four selectives taken from bioethics course offerings. A student can take a clinical track by including RELE 545: Bioethics Case Conference, RELE 554: Clinical Ethics Practicum I, and RELE 555: Clinical Ethics Practicum II. The certificate can be completed in two quarters of full-time study.

**Required**

		<b>MA</b>	<b>Cert</b>
RELE 524	Bioethics and Society	4.0	4.0
RELE 588	Explorers of the Moral Life	4.0	4.0
RELE 589	Biblical Ethics	4.0	4.0
RELE 598	Master's Seminar I	2.0	
RELE 599	Master's Seminar II	2.0	
Totals		16.0	12.0

**Electives**

		<b>MA</b>	<b>Cert</b>
RELE 525	Ethics for Scientists (4.0)	Choose required units from this list	21.0
RELE 534	Ethical Issues in Public Health (4.0)		
RELE 548	Christian Social Ethics (4.0)		
RELE 554	Clinical Ethics Practicum I (4.0)		
RELE 555	Clinical Ethics Practicum II (4.0)		
RELE 564	Ethics and Health Disparities (4.0)		
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness (4.0)		
RELE 566	Heroes of Health Care (4.0)		
RELE 567	World Religions and Bioethics (4.0)		
RELE 568	Bioethics and the Law (4.0)		
RELG 504	Research Methods (4.0) <i>Applies only to MA degree program</i>		
RELG 674	Reading Tutorial (4.0) <i>Applies only to MA degree program</i>		
RELG 697	Independent Research (4.0) <i>Applies only to MA degree program</i>		
Totals			

**Electives**

Choose 8 units, in consultation with adviser, from bioethics list of electives or other School of Religion courses, from other Loma Linda University schools or other educational institutions

		<b>MA</b>	<b>Cert</b>
___ ___	Elective	8.0	
Totals		—	—
<b>Overall Totals</b>		<b>48.0</b>	<b>28.0</b>

## Clinical Ministry – SR

M.A., Certificate (postbaccalaureate)

SIROJ SORAJJAKOOL, Program Director

### FACULTY

Ivan T. Blazen

Mark F. Carr

Carla G. Gober

James Greek

David R. Larson

Jon Paulien

Johnny Ramirez-Johnson

Richard Rice

Randall L. Roberts

Siroj Sorajjakool

Bernard A. Taylor

David L. Taylor

Sigve K. Tonstad

James W. Walters

### FACULTY

The faculty represents a balance between academic expertise and clinical experience, as well as a variety of disciplines, including: biblical studies, theology, theology and ministry, marriage and family therapy, cultural psychology, American church history, health education, nursing, spirituality, and ethics.

### CLINICAL MINISTRY – M.A.

The Clinical Ministry Program leading to a Master of Arts degree encourages students to explore the theological, biblical, and historical roots of ministry within the institutional setting and to prepare for the practice of such ministry. The program is especially valuable as preparation for careers in chaplaincy and other fields of ministry. It is specifically designed for three types of students:

1. Those at the beginning of their professional lives;
2. Those pursuing this degree in order to enhance or shift their existing careers; and
3. Those pursuing this degree as a steppingstone to further study. This degree furthers education in caring for the whole person. The student will develop clinical skills applicable to contemporary ministry.

The program includes education in two areas: academic and clinical. Academic preparation is provided by the School of Religion and other cooperating departments within the University.

Settings providing clinical opportunities for training in institutional ministry include: Loma Linda University Medical Center (LLUMC), Loma Linda University Behavioral Medicine Center (BMC), and Campus Ministries.

Loma Linda University Medical Center, under the auspices of the Department of Chaplain Services, is an accredited Clinical Pastoral Education (CPE) Center. Students admitted to the Clinical Ministry Program may apply for this clinical placement. (Separate application procedures are required.)

### **Program objectives**

Upon the completion of the Clinical Ministry Program, students will demonstrate:

1. Increased clinical skills related to clinical ministry.
2. The ability to integrate theoretical, theological, biblical, and philosophical perspectives in the study of clinical ministry.
3. Critical thinking and the ability to identify spiritual issues in clinical ministry within the health care context.
4. The development of personal understanding of ethical standards and commitments of wholeness that inform their work and personal lives through values development.

### **Admission**

In addition to meeting admission requirements for the School of Religion, the applicant to the Clinical Ministry Program must:

1. Propose clear personal and professional goals and ways in which the program in clinical ministry may facilitate their realization.
2. Persuade the Admissions Committee, by previous accomplishments, that s/he is able and willing to reach these goals and to make a distinguished contribution to the field.

### **Course requirements**

In order to receive the Master of Arts degree in clinical ministry from Loma Linda University, the student will complete a minimum of 48 units of course work as herein specified, with an overall grade point average of B or better, with no grade lower than a C and with no grade lower than a B- in a core course.

### **Transfer credits**

Students are permitted to transfer up to 9 units of approved graduate level courses from other accredited institutions into the Clinical Ministry Program.

### **Clinical internship**

Students must also satisfactorily complete an approved, 400-hour clinical internship.

RELG 795. The program recommends that this requirement be met by the satisfactory completion of one quarter of clinical pastoral education (CPE) at an accredited CPE center. (Note: Acceptance into a quarter of CPE is at the discretion of the CPE supervisor and must be arranged individually and in advance.) It is expected that all students will complete all course work before entering the clinical internship. In certain cases, however, a student may petition the director of the program to take the clinical internship out of sequence. Even in such cases, it is recommended that the following courses be completed before entering the clinical internship:

RELR 565	Pastoral Theology and Methodology	3.0-4.0
RELR 567	Pastoral Counseling	3.0-4.0
RELR 568	Care of the Dying and Bereaved	3.0-4.0

Students who wish to receive academic credits for their clinical internship may register for RELR 524 Clinical Pastoral Education. If taken as a selective, this course may account for a maximum of 6 academic units.

After the 400-hour segment, a clinical evaluation form must be submitted to the program director.

### Comprehensive examination

Each student must pass a comprehensive examination. This examination will test the student's ability to integrate and apply knowledge from the overall program. This examination must be successfully completed before the student defends a thesis, project, or publishable papers.

### Thesis, project, or publishable papers

Independent research for either the thesis or the project is done while registered for RELG 697 Independent Research (1-8). After completing RELG 697 Independent Research, each student must choose from the following options: (a) prepare a thesis while registered for RELG 698 Thesis (1-4), (b) prepare a project or prepare two major papers of publishable quality while registered for RELG 696 Project (1-4).

The project option must be designed and implemented within the confines of the program and under the auspices and direction of the program director. The student must provide an oral defense of the thesis, project, or two publishable papers.

### CLINICAL MINISTRY – CERTIFICATE

The Clinical Ministry Program certificate option is available for students who prefer not to complete the full M.A. degree program.

### Fulfilling required units

The 27 required units are to be satisfactorily completed by taking all of the certificate courses indicated in the following table. Three of the courses must be taken for 4 units.

### Clinical internship – CPE

The program recommends that the clinical internship requirement of 400 hours (RELG 795) be satisfied through one quarter of clinical pastoral education (CPE).

Major		Cert	MA
RELE 524	Bioethics and Society	3.0-4.0	3.0-4.0
RELG 504	Research Methods		3.0-4.0
RELR 527	Crisis Counseling	3.0-4.0	3.0-4.0
RELR 565	Pastoral Theology and Methodology	3.0-4.0	3.0-4.0
RELR 567	Pastoral Counseling	3.0-4.0	3.0-4.0
RELR 568	Care of the Dying and Bereaved	3.0-4.0	3.0-4.0
RELR 574	Preaching		3.0-4.0
RELR 584	Culture, Psychology, and Religion	3.0-4.0	3.0-4.0
RELR 587	Religion and the Social Sciences		3.0-4.0

RELR 694	Seminar in Clinical Ministry	3.0-4.0	3.0-4.0
RELT 557	Theology of Human Suffering	3.0-4.0	3.0-4.0
RELT 558	Old Testament Thought		3.0-4.0
RELT 559	New Testament Thought		3.0-4.0
Totals		27.0	39.0-45.0

**Thesis, project, or publishable papers****Cert MA**

RELG 697	Independent Research (1.0-8.0)		2.0-5.0
RELG 696	Project (1.0-4.0)	Choose one course	—
RELG 698	Thesis (1.0-4.0)		1.0-4.0
Totals		—	3.0-9.0

**Internship**

Internship units do not count toward minimum units required for the degree.

**Cert MA**

RELG 795	Clinical Internship	12.0	12.0
Totals		—	—
<b>Overall Totals</b>		<b>27.0</b>	<b>48.0</b>

## Denominational Studies for Chaplains—SR

Certificate (postbaccalaureate)

JOHNNY RAMIREZ-JOHNSON, Program Director

### FACULTY

Roy Branson

Carla Gober

Julius Nam

Jon Paulien

Johnny Ramirez-Johnson

Sigve Tonstad

The online cohort-based Denominational Studies for Chaplains Program is designed for practicing chaplains who lack academic course work in Adventist doctrine and who desire endorsement from the Adventist Chaplaincy Ministries (ACM) department of the General Conference of Seventh-day Adventists. This certificate will satisfy the denominational studies requirement.

The development of this certificate has been a collaborative effort between Loma Linda University, Loma Linda University Medical Center Chaplains Department, and in consultation with ACM.

This certificate is a response to the stated need of ACM for denominational education that includes the following four areas: 1) Seventh-day Adventist history and heritage, 2) Seventh-day Adventist doctrines, beliefs, and practices, 3) Seventh-day Adventist perspectives on Daniel and Revelation and how they inform the issues of suffering and pain, and 4) Seventh-day Adventist health, wellness, and lifestyle issues.

### TEACHING METHODOLOGY

The education model designed for this academic certificate will be through distance learning online modalities that use a combination of online work and two cohort on-campus intensives.

This is a two-year, online program with two on-campus intensives, online courses, and personal growth class-driven learning activities. Students begin their program as a cohort and are expected to complete the program with their cohort. The program begins with an orientation on-campus intensive and closes with an on-campus intensive session, which includes an individual report, preparation and presentation of a portfolio, and an exit interview.

### STUDENT LEARNING OUTCOMES AND PERFORMANCE INDICATORS

After completing the requirements, graduates of the Denominational Studies for Chaplains Program will be able to articulate the following student learning outcomes:

1. Explain Adventist theological uniqueness and the biblical foundations of its doctrines.
2. Demonstrate knowledge and competent use of Scriptures.
3. Demonstrate an understanding of Christian theology and history, with specific attention to Seventh-day Adventist life and thought.
4. Integrate Adventist doctrines from a health care chaplain's perspective, allowing them to minister as representatives of the Seventh-day Adventist Church.

- Synthesize their individual Adventist version of a philosophy of ministry within the health care setting.

## ADMISSION

In addition to meeting admission requirements for the School of Religion, applicants to the Denominational Studies for Chaplains Program must have:

- Received a college baccalaureate degree from an accredited institution.
- A minimum overall undergraduate grade point average of 3.00. A provisional acceptance for 8 units will be granted to those with a minimum overall grade point average of 2.5. In order to change their status to regular standing, students will be required to earn a 3.00 grade point average for these 8 units.
- Been a chaplain and received a recommendation from ACM.
- Two recommendations (one professional/ministerial and one from a former professor or academic advisor).

## COURSE REQUIREMENTS

In order to receive the certificate in denominational studies for chaplains from Loma Linda University, the student will complete a minimum of 28 units of course work as herein specified, with an overall grade point average of B (3.00) or higher, with no grade lower than a B-. All 28 units of the certificate in denominational studies for chaplains are required; there are no electives offered.

## TRANSFER CREDITS

No transfer units are accepted for the Denominational Studies for Chaplains Program.

Required		Units
RELR 540	Wholeness Portfolio	4.0
RELR 541	History of Seventh-day Adventist Chaplaincy and Healthcare Policy Making	4.0
RELR 595	Independent Study in Chaplaincy	1.0
RELT 500	Biblical Hermeneutics	3.0
RELT 504	Daniel and the Prophetic Tradition	3.0
RELT 505	Seventh-day Adventist History	3.0
RELT 506	Seventh-day Adventist Beliefs	4.0
RELT 507	The Saga of Adventists and Healthcare: Cornflakes, Baby Fae, and the Healing of the Nations	3.0
RELT 565	Vision of Healing: The Message of the Book of Revelation	3.0
Totals		28.0
<b>Overall Totals</b>		<b>28.0</b>

## Religion and the Sciences—SR

M.A.

RICHARD RICE, Program Director

As the academic study of religion has developed over the past fifty years, the exploration of religion and science has emerged as a discipline of its own. Scholars in the natural sciences, the human sciences, and numerous applied sciences recognize the importance of examining religion from their particular perspectives. And religion scholars appreciate the importance of the questions that the methods and conclusions of the sciences raise for religious belief and practice.

As a Seventh-day Adventist health sciences university, Loma Linda University rests on the conviction that there is a positive relation between religion and the sciences. Its commitment to a variety of health professional programs reflects the belief that the natural world is God's good creation, and that human beings are inherently part of the physical order of things. Its commitment to higher education, including various avenues of graduate study, expresses the belief that all truth is God's truth; and that the acquisition of truth calls for the diligent application of all our powers. These convictions support the attempt to bring scientific knowledge within the overarching perspective of Christian faith.

The Master of Arts degree in religion and the sciences is designed for several types of students: those who want a degree in religion and science before pursuing further graduate work in one or the other of these areas; graduate students in the natural and social sciences who would like to combine their other academic interests with a serious study of religion; students in professional programs who also have an interest in the area of religion and science; and individuals who wish to explore the interface of religion and the sciences within the context of serious academic work.

The Religion and the Sciences Program is administered by the School of Religion. It draws on resources from various sectors of the campus, including the Department of Earth and Biological Sciences faculty of the School of Science and Technology; the Department of Psychology faculty of the School of Science and Technology; and other faculties in the University, as well as other scholars and professors with expertise in the area.

Upon completion of the Religion and the Sciences Program, students will demonstrate:

1. A knowledge of the research methods of religious studies and at least one branch of the natural and human sciences.
2. An understanding of the contrasting and complementary aspects of scientific inquiry and religion experience.
3. The ability to bring into critical conversation the theoretical foundations of science and philosophical perspectives on religion.
4. Critical thinking in the areas of religious and scientific inquiry.
5. The ability to contribute to the field of religion and the sciences in the areas of research and writing.
6. An understanding of the relation of wholeness and values to one's scholarship in the area of religion and the sciences.

## ADMISSION

In addition to meeting admission requirements for the School of Religion, the applicant to the Religion and the Sciences Program must:

1. Propose clear personal and professional goals and ways in which the Religion and the Sciences Program may facilitate the realization of those goals.
2. Persuade the Admissions Committee, by previous accomplishments, that s/he is able and willing to reach these goals and to make a significant contribution to the field.

## COURSE REQUIREMENTS

In order to receive the Master of Arts degree in religion and the sciences from Loma Linda University, the student will complete a minimum of 48 units of course work covering an appropriate range of courses and seminars as herein specified, with an overall grade point average of B or better, with no grade lower than a C and with no grade lower than a B-in a required course.

Required		Units
RELG 504	Research Methods	4.0
Totals		4.0

Cluster I: Religion		Units
RELE 5__	Graduate-level Ethics	4.0
RELR 5__	Graduate-level Relational	4.0
RELT 526	Creation and Cosmology (3.0-4.0)	4.0
RELT 539	Christian Understanding of God and Humanity (3.0-4.0)	4.0
Totals		16.0

### Cluster II: Science

Two or three approved graduate courses, seminars, or research projects selected from physical, life, behavioral, social, or health sciences.

		Units
___ __	Elective	8.0-12.0
Totals		8.0-12.0

### Cluster III: Seminars

		Units
PHIL 616	Seminar in the Philosophy of Science	4.0
RELT 615	Seminar in Philosophy of Religion	4.0
RELT 617	Seminar in Religion and the Sciences	4.0
Totals		12.0

### Cluster IV: Electives

One or two approved graduate courses or seminars offered at Loma Linda University or another accredited educational institution.

		Units
___ __	Elective	4.0-8.0
Totals		4.0-8.0

**Cluster V: Research**

A minimum of one unit of RELG 697 is required as well as a minimum of one unit of either RELG 696 or RELG 698 Units

RELG 696	Project (1 to 4) <i>(publishable paper)</i>	Choose one course	—
RELG 698	Thesis (1 to 4)		
RELG 697	Independent Research (1.0-8.0)		1.0-8.0
Totals			1.0-8.0
<b>Overall Totals</b>			<b>48.0</b>

**TRANSFER CREDITS**

Students are permitted to transfer up to 9 units of approved graduate level courses from other accredited institutions into the Religion and the Sciences Program.

**COMPREHENSIVE EXAMINATIONS**

A series of comprehensive examinations will cover essential aspects of religion and science.

**THESIS OR PUBLISHABLE PAPER**

Independent research for either the thesis or the publishable paper is done while registered for RELG 697 Independent Research (1-8). After completing RELG 697 Independent Research, each student must either prepare a thesis while registered for RELG 698 Thesis (1-4) or prepare a publishable paper while registered for RELG 696 Project (1-4). The student must present an oral defense of the thesis or publishable paper.

## Division of Humanities

### HUMANITIES PROGRAM—SR

RAMONA L. HYMAN, Program Director

**HEALTH CARE HUMANITIES:** The humanities encourage an anthropological dig into that which explains, depicts, shapes, and calls on us to be human. They are our histories; our stories "lived"; our cultural, social, religious identities. The humanities define us "human."

For more than fifty years, Loma Linda University has officially prized "wholeness." Because of the specialized nature of Loma Linda University's curricula, a humanities component of the health-related professional programs is important to realize the university's motto, "To make man whole." Health care and research are becoming increasingly interdisciplinary, and only a breadth of integrated knowledge adequately prepares tomorrow's leaders. Loma Linda University alumni will influence and be influenced by a complex society; a disciplined study of the humanities is no luxury.

In light of the foregoing considerations, the Board of Trustees voted in December 2006 to establish a Humanities Program within the School of Religion. The goal is to establish a core of humanities scholars, beginning with one professor each in literature and in history, who will teach humanities courses and develop innovative means to enhance the humanities ethos on campus.

Loma Linda University's Humanities Program has two emphases: undergraduate and professional education.

*Undergraduate.* The Humanities Program for undergraduates largely builds on the humanities course work that students bring from prior college enrollment. Additionally, the University is now searching for the ideal way to meaningfully embed the humanities within students' ongoing professional studies. Ideas that are being explored include: (a) a new capstone academic course in which students examine their personal and professional values; (b) a wholeness portfolio that requires students to explore the integration of personal values, societal needs, and professional aspirations; and (c) a medical humanities certificate. The Humanities Program furthers Loma Linda University's educational objectives:

- Values-based education
- Critical thinking skills
- Effective communication
- Contribution of the humanities and the arts to society
- Lifelong learning
- Human wholeness

*Professional.* The impact of the Humanities Program on professional education is largely outside the classroom—lectures, workshops, film discussions, and brown bag sessions. These experiences are important in themselves, and the humanities faculty will greatly strengthen this aspect of campus life. The University also envisions honors programs that will require instructor-led integrative discussions—often supplemented with assigned reading. Discussion has begun with various schools of the University regarding the development of honors programs that focus on demonstrated excellence in one's specialized field of study, as well as integration of that knowledge with at least one humanities discipline (e.g., history, literature, religion).

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## Dean's Welcome

We're glad you have chosen to consider Loma Linda University's School of Science and Technology as you make plans to continue your educational goals. This Catalog describes who we are and what we have to offer. It will familiarize you with the philosophy and structure of our programs, and will provide you with a listing of the participating faculty.

Loma Linda is a religious, nonprofit institution that welcomes students and staff from a broad spectrum of religious persuasions while reserving the right to give preference to qualified members of its sponsoring denomination. As stated in its nondiscrimination policy, the institution "affirms that all persons are of equal worth in the sight of God and they should so be regarded by all people." Since several of the professions—for which programs within the School of Science and Technology (SST) prepare students—have a tradition of advocacy for oppressed peoples, it is important that the institution, faculty, and staff demonstrate their acceptance of and willingness to assist those in our society who are less privileged. The University actively sponsors several programs that move the institutional health care personnel resources and expertise into the local, national, and international communities to work with otherwise underserved populations. This component of service is an integral part of the statement of mission and a message intended to be captured in the Good Samaritan sculpture that occupies a central position on the campus.

The School of Science and Technology, as part of the University, has expectations of students, faculty, and staff in the areas of conduct and behavior while they are on campus or involved in school or University activities. The school does not discriminate on the basis of race, color, gender, age, ethnic or national origin, or handicap. Enrollment of students in SST programs is not conditioned on their political or sexual orientation; in these areas, the school's policy is directed towards conduct or disruptive behavior, not orientation. In support of this position, we expect our students, faculty, and staff to demonstrate unwavering respect for the diversity of others and to interact with integrity—never forgetting the standards that guide professional actions. Further, we expect our programs through their faculty to develop competent, compassionate, ethical professionals who possess the knowledge, skills, and values to equip them for a life dedicated to service to all those in need—regardless of their lifestyles.

You will find vigorous academic programs that will stretch your mind as you take time to make new discoveries, get to understand our world, and apply Christ-centered values to your life and profession.

Our administrators, faculty, and staff are here to work with you and help you prepare for your future as a caring, Christian professional in the world of service to mankind. If you would like to know more about us, you can call us toll free at 800/422-4LLU.



A handwritten signature in black ink that reads "Beverly J. Buckles". The signature is written in a cursive, flowing style.

Beverly J. Buckles, D.S.W.  
Dean, School of Science and Technology

## School Foundations

The School of Science and Technology (SST)—one of Loma Linda University's newest schools—includes the Departments of Earth and Biological Sciences, Counseling and Family Sciences, Psychology, and Social Work and Social Ecology. Many of the programs offered have matured on campus for a decade or more; one program was established half a century ago. The school offers degree programs through the doctoral level and postdegree certificates, as well as courses that meet the University's general education requirements. Technology programs, such as e-Health Technology, are currently being developed by the school.



### PHILOSOPHY

The School of Science and Technology is mission driven and academically incorporates the University's commitment to the teaching and healing ministry of Jesus Christ, which produces wholeness within transformed lives. Transformation is a lifelong faith-and-learning process—a process committed to pursuit of the highest levels of scholarship, professionalism, and spiritual well-being. This pursuit seeks to understand and promote healthy minds, communities, social systems, families, and the environment.

Wholeness for self and for others is central to a balance between mind, body, and spirit. Such wholeness manifests itself in a life of service to humanity, to the environment, and to God.

The School of Science and Technology values the time-honored and separate traditions in higher education for "academic" and "professional" programs; and it advocates the integration of knowledge and research, blending the "pure" with the "applied" sciences.

In the School of Science and Technology of Loma Linda University, the essential concern of both faculty and students is the quest for meaning. Because this quest is served by knowledge, graduate students are obliged to achieve both broad and detailed mastery of their field of study. They also participate with the faculty in the process by which knowledge is created and transformed into wisdom.

## **OBJECTIVES**

The School of Science and Technology attempts to create an environment favorable to the pursuit of knowledge and meaning by:

1. Making available to graduate students who wish to study in a Seventh-day Adventist Christian setting the education necessary for scholarly careers in the sciences and the health professions.
2. Encouraging development of independent judgment, mastery of research techniques, and contribution to scholarly communication.
3. Relating intellectual achievement to the service of humankind.

# Application and Admissions

## APPLICATION AND ACCEPTANCE

### Application procedure

1. The application instructions, available on the Web at <llu.edu/central/apply>, allow students to apply online and begin an application. Applications and all supporting information, transcripts, test results, and references should be submitted by the deadline posted on the application, per degree.
2. Complete official transcripts of all academic records from all colleges, universities, and professional or technical schools must be provided for official acceptance into a program. It is the applicant's responsibility to arrange to have the transcripts—including official English translations, if applicable—sent directly to Admissions Processing. Transcripts that come via an intermediary are unacceptable.
3. A personal interview is often desirable and is required by some programs. The interview should be arranged with the coordinator of the program in which the student wishes to study.

### Acceptance procedure

1. When the program that the student wishes to enter has evaluated the applications and made its recommendation, the dean of the School of Science and Technology takes official action and notifies the applicant. The applicant must respond affirmatively before becoming eligible to register in the School of Science and Technology.
2. As part of registration, accepted students will be asked to file with Student Health Service a medical history with evidence of certain immunizations.
3. Transcripts of records and all other application documents are retained by the University and may not be withdrawn and used for any purpose. Records of students who do not enroll or who withdraw prior to completion are retained for two years from the date of original acceptance to a School of Science and Technology program.
4. New students are required to pass a background check before they register for classes.

## UNDERGRADUATE PROGRAMS

### Admission requirements

#### High school graduation requirement

Students applying to Loma Linda University after finishing high school are required to furnish an official transcript as evidence of completion of high school. A high school G.P.A. of at least 2.5 (on a 4-point scale) is expected for admission to Loma Linda University undergraduate programs.

Students transferring to Loma Linda University after completing some course work at another college or university are also required to furnish transcripts for all of these courses. A minimum grade of C (2.0) is required for all college transfer courses, unless otherwise specified in specific program requirements. An overall college G.P.A. of at least 2.5 to 3.0 is expected, depending on the program to which the student applies.

**Transcripts**

Transcripts are accepted only when sent directly to the University Records office by the issuing institution. Transcripts received by LLU become the property of the University and will not be released to the student or forwarded to any other institution upon request of the student.

**Undergraduate degree requirements**

The requirements for an undergraduate degree consist of (1) general studies courses—68 units, a portion of which may be met by the student's major; (2) the courses required for the specific undergraduate major or degree program; and (3) general elective courses.

**General studies requirements****Domain 1: Spiritual and Cultural Heritage (28-32 quarter units)***Spiritual Heritage (16)*

A minimum of 4 units for each year the student is enrolled in a Seventh-day Adventist college or university.

*Cultural Heritage (12-16)*

Must include one course dealing with human diversity among peers (e.g., cultural anthropology). Other courses to be selected from civilization/history, fine arts, literature, modern language, performing/visual arts (2 quarter units maximum), or philosophy.

**Domain 2: Scientific Inquiry and Analysis (24-32 quarter units)***Natural Sciences (16)*

Courses in various biological or biomedical fields, chemistry, physics, or earth sciences.

*Social Sciences (12-16)*

Two or more of the following required:

Anthropology, economics, geography, political science, psychology, and sociology.

**Domain 3: Communication (9-13 quarter units)**

Must include a full sequence in freshman English that meets the baccalaureate degree requirements at an accredited college or university. Also may include courses in computer information systems, critical thinking, and public speaking.

**Domain 4: Health and Wellness (2-6 quarter units)**

Must include two physical activities totaling at least 1 unit, and one course in personal health or nutrition.

**Domain 5: General Studies Electives**

Electives from the foregoing subjects may be chosen to complete the 68 units.

### **Major field and cognate requirements**

These requirements are described under each program in this CATALOG. They consist of the courses in the major field, as well as cognates—which are supporting courses in a different field that are required for the degree.

### **Minor field**

A minor is an area outside of the student's major field, in which the student takes enough courses to acquire a basic introduction to the subject. Each program defines the minor subjects requirements.

### **Minimum required grades**

The minimum required grade is C for courses that apply towards the undergraduate degree.

## **GRADUATE DEGREE REQUIREMENTS**

### **Admission requirements**

A four-year baccalaureate degree (or its equivalent) from an accredited college or university is a prerequisite for admission to the School of Science and Technology's graduate programs. Transcripts of the applicant's scholastic record should show appropriate preparation, in grades and content, for the curriculum chosen. Since there is some variation in the pattern of undergraduate courses prescribed by different programs, the applicant should note the specific requirements of the chosen program. Deficiencies may be fulfilled while enrolled; prerequisites must be completed prior to matriculation.

### **Scholarship**

Applicants are expected to present an undergraduate record with a grade point average of B (3.0) or better in the overall program and in the major field. Depending on program-specific criteria, some students with an overall grade-point average between 2.5 and 3.0 may be admitted provisionally to graduate standing, provided the grades of the junior and senior years are superior or there is other evidence of capability.

### **Graduate Record Examination**

Scores on the general test of the Graduate Record Examination (GRE) are required with application for admission to many degree programs. New test scores are needed if it has been more than five years since the last test was taken. Applicants are advised to request information specific to their proposed program of study.

For complete information about the GRE, please visit their Web site at <ets.org/gre>; or write to Educational Testing Service, 1947 Center Street, Berkeley, CA 94701 (for the West); and P.O. Box 6000, Princeton, NJ 08541 (for the East). For GRE publications (including study materials), call 800/537-3160.

Programs that do not require the GRE must submit one additional measure of a candidate's preparation for graduate study. This may be either an evaluation of critical essay-writing skills, the Miller Analogies Test, the results of a structured interview, or other specified program criteria.

### **Re-entrance**

Students who are currently enrolled in the School of Science and Technology may request transfer to a different program or a more advanced degree level by contacting the School of Science and Technology Admissions Office for information on an abbreviated application and instructions for submitting the appropriate supporting documents. Transcripts on file with the University are acceptable.

### **English-language competence**

All international students are encouraged (particularly those who do not have an adequate score on TOEFL or MTELP or other evidence of English proficiency) to attend an intensive American Language Institute prior to entering their program, because further study of English may be required to assure academic progress.

## **FROM MASTER'S TO PH.D. DEGREE**

### **Bypassing master's degree**

A graduate student at this University may proceed first to a master's degree. If at the time of application the student wishes to qualify for the Doctor of Philosophy degree, this intention should be declared even if the first objective is a master's degree.

If after admission to the master's degree program a student wishes to go on to the doctoral degree, an abbreviated application should be completed and submitted, along with appropriate supporting documents, to the School of Science and Technology Admissions Office. If the award of the master's degree is sought, the student will be expected to complete that degree before embarking on doctoral activity for credit. A student who bypasses the master's degree may be permitted, on the recommendation of the guidance committee and with the consent of the dean, to transfer courses and research that have been completed in the appropriate field and are of equivalent quality and scope to his/her doctoral program.

### **Second master's degree**

A student who wishes to qualify for an additional master's degree in a different discipline may apply. The dean of the School of Science and Technology and the faculty of the program the student wishes to enter will consider such a request on its individual merits.

### **Concurrent admission**

Students may not be admitted to a School of Science and Technology program while admitted to another program at this University or elsewhere. The exceptions to this are the combined degrees programs discussed in the next paragraph.

### **Combined degrees**

Students may not be admitted to a School of Science and Technology program while admitted to another program at this University or elsewhere. The exceptions to this are the combined degrees programs.

## **CERTIFICATE PROGRAMS**

The School of Science and Technology offers several postbaccalaureate certificate programs. Students accepted into such programs will be assigned to an advisor who will work with them as they fulfill the program requirements. Students will be required to maintain a B- (2.7) grade point average, with no course grade below C (2.0). All certificate students are required to take at least one 3-unit religion course (numbered between 500 and 600).

## **MASTER OF ARTS/MASTER OF SCIENCE/MASTER OF SOCIAL WORK**

### **Advisor and guidance committee**

Each student accepted into a degree program is assigned an advisor who helps arrange the program of study to meet University requirements; subsequently (no later than when applying for candidacy), the student is put under the supervision of a guidance committee. This committee is responsible to and works with the coordinator of the student's program in arranging courses, screening thesis topics (where applicable), guiding research, administering final written and/or oral examinations, evaluating the thesis and other evidence of the candidate's fitness to receive the degree, and ultimately recommending the student for graduation.

### **Subject prerequisites and deficiencies**

Gaps in an applicant's academic achievement will be identified by subject and classified either as prerequisites or as subject deficiencies. Applicants lacking certain subject or program prerequisites may not be admitted to the master's degree program until the prerequisites are completed (at Loma Linda University or elsewhere) and acceptable grades are reported. However, subject deficiencies do not exclude an applicant from admission or enrollment; but these must be removed as specified by the advisor or dean, usually during the first full quarter of study at this University.

### **Study plan**

The student's advisor should develop with the student a written outline of the complete graduate experience, with time and activity specified as fully as possible. This will serve as a guide to both the student and the advisor as well as to members of the guidance committee when it is selected.

The study plan is changed only after careful consultation. The student is ultimately responsible for ensuring both timely registration and completion of all required courses.

### **Time limit**

The time allowed from admission to the School of Science and Technology to conferring of the master's degree may not exceed five years. Some consideration may be given to a short extension of time if, in the dean's opinion, such is merited.

Course credit allowed toward the master's degree is nullified seven years from the date of course completion. Nullified courses may be revalidated, upon successful petition, through reading, conferences, written reports, or examination to assure currency in the content.

### **Residence**

Students must meet the residence requirements indicated for their particular program (never less than one academic quarter). The master's degree candidate must complete one quarter of full-time study at the University or perform the thesis research at the University. Although the number of units students take varies by program, students are expected to work closely with their advisors to assure that their course loads are consistent with program requirements, as well as degree completion options and timelines.

### **Minimum required grade point average**

The required minimum grade point average is B (3.0) on all work for the master's degree. This average must be maintained in formal courses and in research, computed separately. A student submitting

transfer credits must earn a B grade on all work accepted for transfer and on all work taken at this University, computed separately. In some cases, programs have specified higher or additional requirements. Students should consult with their particular program of study.

### **Professional performance probation**

Applied professional programs may recommend that the student be placed on professional performance probation. Details are contained in program guides for the programs concerned.

### **Comprehensive and final examinations**

The student must take the written, oral, and final examinations prescribed by the program on or before the published dates. If a candidate fails to pass the oral or written examination for a graduate degree, the committee files a written analysis of the candidate's status with the dean, with recommendations regarding the student's future relation to the school. The student receives a copy of the committee's recommendation.

### **Research competence**

Student skills required in research, language, investigation, and computation are specified in each program description in this CATALOG.

### **Thesis**

Students writing a thesis must register for at least 1 unit of thesis credit. The research and thesis preparation are under the direction of the student's guidance committee. The student is urged to secure the committee's approval of the topic and research design as early as possible. Such approval must be secured before petition is made for candidacy.

The student must register and pay tuition for thesis credit, whether the work is done in residence or in absentia. If the student has been advanced to candidacy, has completed all course requirements, and has registered for but not completed the research and thesis, continuous registration is to be maintained until the manuscript has been accepted. This involves a quarterly enrollment fee paid at the beginning of each quarter.

### **Candidacy**

Admission to the School of Science and Technology or designation of regular graduate standing does not constitute admission of the student to candidacy for a graduate degree. After achieving regular status, admission to candidacy is initiated by a written petition (School of Science and Technology Form A) from the student to the dean, on recommendation of the student's advisor and the program coordinator or department chair.

Students petitioning the School of Science and Technology for candidacy for the master's degree must present a satisfactory grade record, include a statement of the proposed thesis or dissertation topic (where applicable) that has been approved by the student's guidance committee, and note any other qualification prescribed by the program. Students are usually advanced to candidacy during the third quarter after entering their course of study toward a degree in the School of Science and Technology.

### **Specific program requirements**

In addition to the foregoing, the student is subject to the requirements stated in the section of the CATALOG governing the specific program chosen.

## **Religion requirement**

All master's degree students are required to take at least one 3-unit religion course (courses numbered between 500 and 600). Students should check with their programs for specific guidelines.

## **Combined degrees programs**

A number of combined degrees programs are offered, each intended to provide more comprehensive preparation in clinical applications and the biomedical sciences. Concurrent admission to two programs in the School of Science and Technology or to a program in the School of Science and Technology and to a professional school in the University is required. These curricula are described in greater detail under the heading "Combined Degrees Programs" in this section of the CATALOG.

## **THESIS AND DISSERTATION**

The student's research and thesis or dissertation preparation are under the direction of the student's guidance committee. The student is urged to secure the committee's approval of the topic and research design as early as is feasible. Such approval must be secured before petition is made for advancement to candidacy.

### **Format guide**

Instructions for the preparation and format of the publishable paper, thesis, or dissertation are in the "Thesis and Dissertation Format Guide," available through the Faculty of Graduate Studies dissertation editor. Consultation with the dissertation editor can help the student avoid formatting errors that would require him/her to retype large sections of manuscript. The last day for submitting copies to the school office in final approved form is published in the events calendar (available from the academic dean's office).

### **Binding**

The cost of binding copies of the thesis or dissertation to be deposited in the University library and appropriate department or school collection will be paid for by the student's department. The student will be responsible for paying the cost of binding additional personal copies.

## **DOCTOR OF PHILOSOPHY**

The Doctor of Philosophy degree is awarded for evidence of mature scholarship, productive promise; and active awareness of the history, resources, and demands of a specialized field.

### **Advisor and guidance committee**

Each student, upon acceptance into a degree program, is assigned an advisor who helps arrange the study program. Subsequently (no later than when applying for candidacy), the student is put under the supervision of a guidance committee. The School of Science and Technology requires advisors for Doctor of Philosophy degree candidates to have demonstrated scholarship productivity in their chosen disciplines. Each program maintains a list of qualified doctoral degree mentors. The guidance committee, usually chaired by the advisor, is responsible to and works with the coordinator of the student's program in arranging course sequences, screening dissertation topics, recommending candidacy, guiding research, administering written and oral examinations, evaluating the dissertation/project and other evidence of the candidate's fitness to receive the degree, and recommending the student for graduation.

### **Subject prerequisites and deficiencies**

Gaps in an applicant's academic achievement will be identified by subjects and classified as either prerequisites or as subject deficiencies.

Applicants lacking subject or program prerequisites may not be admitted to the Ph.D. degree program until the prerequisites are completed (at Loma Linda University or elsewhere) with acceptable grades.

Subject deficiencies do not exclude an applicant from admission or enrollment; but they must be removed as specified by the advisor or dean, usually at the beginning of the graduate experience at this University.

### **Study plan**

The student's advisor should develop with the student a written outline of the complete graduate experience, with time and activity specified as fully as possible. This serves as a guide to both the student and the advisor, as well as to members of the guidance committee when it is selected. The study plan is changed only after careful consultation. The student is ultimately responsible for ensuring both timely registration and completion of required courses.

### **Time limit**

Completion of the graduate experience signals currency and competence in the discipline. The dynamic nature of the biological sciences makes dilatory or even leisurely pursuit of the degree unacceptable. Seven years are allowed for completion after admission to the Ph.D. degree program. Extension of time may be granted on petition if recommended by the guidance committee to the dean of the School of Science and Technology.

Course credit allowed toward the doctorate is nullified eight years from the date of course completion. To assure currency in the content, nullified courses may be revalidated—upon successful petition—through reading, conference, written reports, or examination.

### **Residence**

The School of Science and Technology requires two years of residency for the doctoral degrees—D.M.F.T, Psy.D., Ph.D.—spent on the campus of the University after enrollment in a doctoral degree program. During residence, students devote full time to graduate activity in courses, research, or a combination of these. A full load of courses is 8 or more units each quarter; 36 or more clock hours per week is full time in research.

Students may be advised to pursue studies for limited periods at special facilities not available at Loma Linda University. Such time may be considered residence if the arrangement is approved in advance by the dean of the School of Science and Technology.

The spirit and demands of doctoral degree study require full-time devotion to courses, research, reading, and reflection. But neither the passage of time nor preoccupation with study assures success. Evidence of high scholarship and original contribution to the field or professional competence form the basis for determining the awarding of the degree.

### **Minimum required grade point average**

Students must maintain a grade point average of at least a B (3.0) to continue in regular standing toward the doctorate. This average is to be computed separately for courses and research. Courses in which a student earns a grade between C (2.0) and B (3.0) may or may not apply toward the degree, at the discretion of the guidance committee. A student submitting transfer credits must earn a B average on all work accepted for transfer credit and on all work taken at this University, computed separately.

## **Professional performance probation**

Applied professional programs may recommend that the student be placed on professional performance probation. Details are contained in the program guides for the programs concerned.

## **Scholarly competence**

Doctoral degree students demonstrate competency in scholarship along with research and professional development. Expectations and standards of achievement with the tools of investigation, natural and synthetic languages, and computers are specified in this section of the CATALOG for each program.

## **Comprehensive examinations**

The doctoral degree candidate is required to take comprehensive written and oral examinations over the principal areas of study to ascertain capacity for independent, productive, scientific work; and to determine whether further courses are required before the final year of preparation for the doctorate is undertaken. The program coordinator is responsible for arranging preparation and administration of the examination, as well as its evaluation and subsequent reports of results. Success in the comprehensive examination is a prerequisite to candidacy (see below).

Students cannot be admitted to the examination until they have:

- Demonstrated reading knowledge of one foreign language, if applicable;
- Completed the majority of units required beyond the master's degree or its equivalent.

## **The final oral examination**

After completion of the dissertation and not later than a month before the date of graduation, the doctoral degree candidate is required to appear before an examining committee for the final oral examination.

If a candidate fails to pass this final examination for a graduate degree, the examining committee files a written analysis of the candidate's status with the dean, with recommendations about the student's future relation to the school. The student receives a copy of the committee's recommendation.

## **Project**

*(required for the Doctor of Psychology and Doctor of Marital and Family Therapy degrees)*

All Doctor of Psychology degree students must register for at least 1 unit of project credit. This should be done at the last quarter of registration prior to completion.

The research and project preparation are under the direction of the student's guidance committee. The student is urged to secure the committee's approval of the topic and research design as early as possible. Such approval must be secured before petition is made for advancement to candidacy.

If the student has been advanced to candidacy, has completed all course requirements, and has registered for but not completed the research and project, continuous registration is maintained until the manuscript is accepted. This involves a quarterly fee of \$75 (2010-2011) to be paid during registration each quarter. A similar continuing registration fee is assessed for each quarter the student fails to register for new units.

## **Dissertation**

*(required for the Doctor of Philosophy degree)*

All doctoral students must register for at least 1 unit of research credit. This should be done at the last quarter of registration prior to completion.

The research and dissertation preparation are under the direction of the student's guidance committee. The student is urged to secure the committee's approval of the topic and research design as early as possible. Such approval must be secured before petition is made for advancement to candidacy.

Consultation with the Faculty of Graduate Studies dissertation editor can prevent the student from committing formatting errors that would require retyping large sections of the manuscript.

Students register and pay tuition for the dissertation, whether the work is done in residence or in absentia. If the student has been advanced to candidacy, has completed all course requirements, and has registered for but not completed the research and dissertation, continuous registration is maintained until the manuscript is accepted. This involves a quarterly fee of \$75 (2010-2011), to be paid during registration each quarter. A similar continuing registration fee is assessed for each quarter the student fails to register for new units.

Doctoral dissertations are reported to University Microfilms International and to the National Opinion Research Center. The Faculty of Graduate Studies provides appropriate information and forms.

### **Candidacy**

Admission to the School of Science and Technology does not constitute candidacy for a graduate degree. Admission to candidacy is initiated by a written petition (School of Science and Technology Form A) from the student to the dean, with support from the student's advisor and the program chair.

The student's petition for candidacy for the Doctor of Philosophy degree will include confirmation that comprehensive written and oral examinations have been passed.

Students expecting the award of the doctorate at a June graduation should have achieved candidacy no later than the previous November 15. One full quarter must be allowed between the achievement of candidacy and the quarter of completion.

### **Specific program requirements**

Doctoral programs differ from each other. The unique program requirements appear in the programs section of this CATALOG (Section III) and in the program guides available from specific departments.

### **Religion requirement**

All doctoral students should take at least three 3-unit religion courses (numbered between 500 and 600). Students should check with their programs for specific guidelines.

### **COMBINED DEGREES PROGRAMS**

A number of combined degrees programs are offered, each intended to provide additional preparation in clinical, professional, or basic areas related to the student's field of interest. All require concurrent admission to the School of Science and Technology and a professional school in the University. The combined degrees programs provide opportunity for especially well-qualified and motivated students to pursue professional and graduate education; and to prepare for careers in clinical specialization, teaching, or investigation of problems of health and disease in man.

For admission to a combined-degrees program, the student must have a baccalaureate degree; must qualify for admission to the School of Science and Technology; and must already be admitted to the School of Medicine, the School of Dentistry, the School of Religion, or the School of Public Health. Application may be made at any point in the student's progress in the professional school, though it is usually made during the sophomore year. Students in this curriculum study toward the M.A., M.S., M.S.W., Psy.D., or Ph.D. degree.

Students may be required to interrupt their professional study for two or more years (as needed) for courses and research for the graduate degree sought. Elective time in the professional school may be spent in meeting School of Science and Technology requirements.

The student's concurrent status is regarded as continuous until the program is completed or until discontinuance is recommended by the School of Science and Technology or the professional school. The usual degree requirements apply.

The following combined degrees programs are offered in conjunction with the School of Science and Technology. (See Combined Degrees Programs at the end of Section III.)

Biology or Geology *with* Medicine or Dentistry (M.S./M.D., M.S./D.D.S., Ph.D./M.D., or Ph.D./D.D.S.)

Marital and Family Therapy *with* Clinical Ministry (M.S./M.A.)

Marital and Family Therapy *with* Health Education (M.S./M.P.H.)

Psychology *with* Biomedical and Clinical Ethics (Psy.D./M.A. or Ph.D./M.A.)

Psychology, Clinical *with* Health Education (Psy.D. or Ph.D./M.P.H.)

Psychology, Clinical *with* Preventive Care (Psy.D. or Ph.D./M.P.H. or Psy.D. or Ph.D./Dr.P.H.)

Social Policy and Social Research *with* Biomedical and Clinical Ethics (Ph.D./M.A.)

Social Work *with* Criminal Justice (M.S.W./M.S.)

Social Work *with* Gerontology (M.S.W./M.S.)

Social Work *with* Maternal and Child Health (M.S.W./M.P.H.)

Social Work *with* Social Policy and Social Research (M.S.W./Ph.D.)

## Student Life

The information on student life contained in this CATALOG is brief. The *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies and is available to each registered student. Students need to familiarize themselves with the contents of the *Student Handbook*. Additional information regarding policies specific to a particular school or program within the University is available from the respective school.

## Academic Information

### CONDITIONS OF REGISTRATION, RESIDENCE, ATTENDANCE

#### Academic residence

A student must meet the residence requirements indicated for a particular degree, never less than one academic quarter. A year of residence is defined as three quarters of academic work. The master's degree candidate must complete one quarter of full-time study or perform the thesis research work at the University or an approved off-campus location. A student is in full-time residence if registered for at least 8 units. A maximum of 12 units may be taken without special petition unless the student is enrolled in an approved block-registration program or the program requirements specify otherwise.



#### Transfer credits

Transfer credits will not be used to offset course work at this University that earns less than a B average. This transfer is limited to credits that have not already been applied to a degree and for which a grade of B (3.0) or better has been recorded. A maximum of 9 quarter units that have been previously applied to another degree may be accepted as transfer credits upon petition. A candidate who holds a master's degree or presents its equivalent by transcript may receive credit up to 20 percent of the total units for the degree, subject to the consent of the dean and the department chair involved. In such instances, the transfer student is not relieved of residence requirements at this University.

#### Academic probation

Degree students whose overall grade point average falls below a 3.0 will be placed on academic probation. Students who are on academic probation and fail to make a 3.0 for the next quarter or who fail to have an overall G.P.A. of 3.0 after two quarters may be dismissed from school.

## Financial Information

### SCHEDULE OF CHARGES (2011-2012)

#### Tuition

\$550	Per unit, undergraduate credit
\$3,288	Per quarter (12-18 units), Earth and Biological Sciences undergraduate program
\$660	Per unit, graduate credit
\$330	Per unit, audit
\$29,483	Per year: Psychology Psy.D. and Ph.D.

#### Special charges\*

\$60	Application fee
\$100	Application fee for combined degrees
\$649	Enrollment fee per quarter
\$60	Fee for credit by examination
\$30	Per unit fee to have credit earned by examination appear on transcript
\$40	Application to change program or degree

\* Programs may have additional fees.

# Biology—ST

M.S., Ph.D.

STEPHEN G. DUNBAR, Program Director

## FACULTY

### *EBS - PRIMARY APPOINTMENTS*

Leonard R. Brand  
H. Paul Buchheim  
Stephen G. Dunbar  
Raul Esperante  
Hansel M. Fletcher  
William K. Hayes  
W. William Hughes  
Kevin E. Nick

### *SECONDARY APPOINTMENTS*

Danilo Boskovic  
Ronald L. Carter  
Hansel M. Fletcher  
David A. Hessinger  
Michal Kirby

### *ADJUNCT FACULTY*

Gordon J. Adkins  
H. Thomas Goodwin  
John F. Stout

The Biology Program leading to the Master of Science and Doctor of Philosophy degrees is offered by the Department of Earth and Biological Sciences in the School of Science and Technology. These curricula provide a broad and unified approach to the life sciences, and also specialization—as evidenced by the conduct of significant, original research and in the selection of courses related to the area of research interest. Study in various areas, from molecular biology to natural history, is available to the student seeking preparation for teaching or for research in modern biology. Some areas of specialization are animal behavior, animal physiology, molecular systematics, ecological physiology, behavioral ecology, conservation biology, marine biology, and paleontology.

## OBJECTIVES

The Biology Program strives to:

- Instill in students the values of honesty, scientific integrity, careful research, and critical, independent thinking.
- Provide the tools and intellectual environment in which biologists can attain their highest potential in scholarship, research, teaching, and interdisciplinary service learning.

- Challenge graduate students to consider the relationships among science, faith, and societal responsibility.

## **BIOLOGY—M.S.**

### **Learning outcomes**

- Demonstrate advanced breadth and depth of biological knowledge.
- Plan and carry out independent research.
- Demonstrate publication-quality writing and oral communication skills.
- Demonstrate the ability to analyze and synthesize previous knowledge.
- Develop a professional aptitude and attitude.
- Develop critical evaluation skills in relation to faith, science, and public interest issues.

### **Student financial aid**

Assistantships for research and/or teaching are available in the Department of Earth and Biological Sciences on a competitive basis. Further information can be obtained by contacting the department at <ebs@llu.edu>. Qualified students are also encouraged to seek fellowships from federal and private agencies with the help of their advisor.

### **General requirements**

For information about requirements and practices to which all graduate students are subject, the student should consult the relevant sections of this CATALOG and general information pertinent to the School of Science and Technology.

### **Admissions**

The successful applicant must meet the general admission requirements of the School of Science and Technology. Expected undergraduate preparation includes a bachelor's degree with a biology major or equivalent from an accredited college or university, including the corequisite courses listed below. An undergraduate G.P.A. of at least 3.0 is expected. Applicants must take the general Graduate Record Examination (GRE) and achieve an acceptable score (the subject GRE is not required). International students may be required to take the TOEFL examination. Applicants must contact the department or refer to the CATALOG for details.

To apply for admission to the program, applicants should log on to the LLU Web site at <llu.edu/central/apply>. It is also recommended that applicants contact the department at <ebs@llu.edu>.

### **Application time**

Applications are accepted at any time. However, it is recommended that applications for Fall Quarter be submitted by March. Financial aid decisions will be made early in April.

### **Undergraduate corequisites**

- Precalculus (required)
- Calculus (recommended)
- Statistics (one course)
- General biology (one year)

- General chemistry (one year)
- Organic chemistry (one year)
- Biochemistry (recommended)
- General physics (one year)

Some of these courses may be taken during residence at this University, with the approval of the EBS admissions committee.

### **Required courses during the M.S. degree program**

A total of 48 units of courses and research are required, including at least 36 at or above the 500 level. See below for a list of courses.

### **Seminar attendance requirements**

All graduate students in residence must register for and attend Seminars (BIOL 607) at this University each quarter.

### **Research proposal**

Students are urged to select a research project early in their program, in consultation with a faculty member approved by the department. A written research proposal and oral defense of the student's proposed research should be completed by the end of the third quarter of study. A comprehensive plan for completion of the degree will be approved at this time.

### **Advancement to candidacy**

Students may apply for advancement to candidacy by completing Form A, which requires:

- Completing all deficiencies and corequisites.
- Selecting a research committee.
- Completing an approved written research proposal.
- Passing the oral defense of the research proposal.
- Being recommended by the program faculty (should be completed by the end of the third quarter of study).

### **Registration and tuition after normative time**

Our program design is for M.S. degree students to finish in the normative time of two years. In certain circumstances students may require slightly more time for completion. Students who are past the normative time for completing their degree must register for two units without a tuition waiver each quarter until they complete their degree. After their normative time, students may request a one-year grace period that must be approved by the department faculty.

### **Thesis**

The written thesis must demonstrate the completion of significant, original research and must be written in the format of an appropriate scientific journal where the manuscript is likely to be submitted for publication

## **Defense of thesis**

An oral presentation and defense of the thesis, including final oral examination on the student's field of study, are required.

## **BIOLOGY—PH.D.**

### **Biology Ph.D. learning outcomes**

- Demonstrate advanced breadth and depth of biological knowledge.
- Demonstrate a plan and carry out independent research.
- Demonstrate publication-quality writing and effective oral communication skills.
- Demonstrate the ability to analyze and synthesize previous knowledge.
- Demonstrate a professional aptitude and attitude.
- Demonstrate critical evaluation skills in relating faith and science and public-interest issues.
- Demonstrate skills, knowledge, and techniques to the degree that they are able to be ethical, independent, and engaged contributors to scientific and social communities.

### **Admission**

The successful applicant must meet the general admission requirements of the School of Science and Technology. Undergraduate preparation should include a bachelor's degree in biology (M.S. degree recommended). Applicants must take the general GRE examination and achieve an acceptable score (the subject GRE is not required). International students may be required to take the TOEFL examination. Applicants must contact the department or refer to this CATALOG for details. Recommended G.P.A. in a previous M.S. degree program is at least 3.5.

### **Application**

Applications are accepted at any time. However, it is recommended that applications for Fall Quarter be submitted by March. Financial aid decisions will be made in early April.

To apply for admission to the program, log on to the LLU Web site at <llu.edu/central/apply>. It is also recommended that applicants contact the department at <ebs@llu.edu>.

### **Undergraduate corequisites**

- Statistics (required)
- Precalculus (required)
- Calculus (recommended)
- General biology (one year)
- General physics (one year)
- General chemistry (one year)
- Organic chemistry (one year)
- Biochemistry (recommended)

### **Required courses during the Ph.D. degree program**

A total of 72 units of courses and research beyond the master's level are required, including at least 60 at or above the 500 level. See below for a list of courses. A total of 120 units beyond the bachelor's level are required.

### **Seminar attendance requirements**

All graduate students in residence must register for and attend Seminars (BIOL 607) each quarter at Loma Linda University.

### **Teaching experience**

Teaching is recommended for at least one quarter. This experience may be obtained through laboratory teaching, or it may include presenting lectures for a course in consultation with the student's major professor and the course instructor.

### **Research proposal**

A written research proposal and oral defense of the student's proposed research should be completed by the end of the third quarter of study.

### **Comprehensive examination**

Oral and written comprehensive examinations are given near completion of the formal course work. The purpose is to measure the student's knowledge of his/her field of study and his/her ability to find, understand, and synthesize the research literature on a topic. The written examination consists of preparing a publishable review or concept paper on a topic selected and evaluated by the student's committee. Subsequent to the written examination, the oral examination covers the student's field of study. Questions will typically focus on the student's research area but may expand to other areas, as appropriate.

### **Advancement to candidacy**

Students may apply for advancement to candidacy after:

- Completing all deficiencies and corequisites
- Passing the comprehensive examinations
- Selecting a research committee
- Completing an approved written research proposal and budget
- Being recommended by the department faculty

### **Registration and tuition after normative time**

The program design is for Ph.D. students to complete their studies in the normative time of four years. In certain circumstances, students may require more time for completion. Students who are past the normative time for completing their degree must register for 2 units without a tuition waiver each quarter until they complete their degree. After their normative time, students may request a one-year grace period that must be approved by the department faculty.

### **Dissertation**

The written dissertation must demonstrate the completion of significant, original research, and must be written in publishable paper format. At least one manuscript from the dissertation must be submitted for publication before the Ph.D. degree will be granted.

### **Professional development**

Ph.D. degree students are expected to publish papers, present papers at scientific meetings, and submit research grant proposals.

## Defense of dissertation

An oral dissertation presentation and defense are required.

## Curricula

All values below are in quarter units.

### Required

Additional courses beyond those listed below will be chosen in consultation with the student's advisor

			MS	PhD
BIOL 545	Genetics and Speciation		4.0	4.0
BIOL 558	Philosophy of Science	BIOL 559 required for students who have taken BIOL 475 or equivalent	4.0	4.0
BIOL 607	Seminar in Biology	(each quarter in residence; 1 unit per quarter)	—	—
BIOL 616	Research and Experimental Design		2.0	2.0
BIOL 617	Proposal Writing and Grantsmanship		2.0	2.0
Totals			12.0	12.0

### Choose course(s) from each of the following areas:

			MS	PhD
BCHM 504	Introduction to Biochemistry GS (5.0)	Biological systems	—	6.0-8.0
BCHM 508	Principles of Biochemistry (6.0)			
BCHM 534	Techniques of Biochemistry (2.0)			
BIOL 517	Ecological Physiology (4.0)			
BIOL 547	Molecular Biosystematics (4.0)			
BIOL 548	Molecular Ecology (4.0)			
BIOL 555	Molecular Genetics (3.0)			
MICR 540	Physiology and Molecular Genetics of Microbes (3.0)			
MICR 570	Mechanisms of Microbial Pathogenesis (3.0)			
BIOL 444	Paleobotany (4.0)	Ecology	—	6.0-8.0
BIOL 505	Marine Biology (4.0)			
BIOL 515	Biogeography (3.0)			
BIOL 525	Paleopalynology (4.0)			
BIOL 539	Behavioral Ecology (4.0)			
BIOL 546	Techniques in Vertebrate Ecology (3.0)			
BIOL 549	Biodiversity and Conservation (3.0)			
BIOL 409	Mammalogy (4.0)	Organismal biology	—	6.0-8.0
BIOL 426	Invertebrate Paleontology (4.0)			
BIOL 427	Vertebrate Paleontology (4.0)			
BIOL 504	Biology of Marine Invertebrates (4.0)			
BIOL 537	Advances in Sociobiology (3.0)			
BIOL 539	Behavioral Ecology (4.0)			
GEOL 444	Paleobotany (4.0)			
GEOL 545	Taphonomy (4.0)			
Totals			—	18.0-24.0

<b>Religion</b>		<b>MS</b>	<b>PhD</b>
REL_ 5__	Graduate-level Religion	3.0	
RELE 5__	Graduate-level Ethics		3.0
RELR 5__	Graduate-level Relational		3.0
RELT 5__	Graduate-level Theological		3.0
Totals		9.0	9.0

**Research**

4 units minimum; will be graded each quarter and can be repeated for additional credit

		<b>MS</b>	<b>PhD</b>
BIOL 698	Thesis Research (1.0-8.0)	4.0	
BIOL 699	Dissertation Research 1-8 units		4.0
Totals		4.0	4.0
<b>Overall Totals</b>		<b>48.0</b>	<b>72.0</b>

A course title followed by a number range in parentheses indicates a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree curriculum.

**ROSARIO BEACH SUMMER COURSES**

In cooperation with the Walla Walla University Marine Station at Anacortes, Washington, facilities are available for marine courses and research by students of this program, in consultation with their advisor.

## Case Management—ST

Certificate (postbaccalaureate)

BEVERLY J. BUCKLES, Program Director

### FACULTY

(See M.S.W.)

Offered by the School of Science and Technology's Department of Social Work and Social Ecology, the 27-unit Case Management Program provides a unique opportunity for individuals working in health, mental health, and social services settings to acquire the specific knowledge and skills needed for working with populations for whom case management is a part of the service delivery system.

### ADMISSION REQUIREMENTS

To be accepted into the Case Management Program, applicants must:

1. Have a bachelor's degree from an accredited university or college. (Official transcripts are evidence of degrees and courses completed.)
2. Applicants must submit a completed application—including a personal statement, application fee, all college and/or university transcripts, and at least three letters of recommendation (one from an academic source and one from a work supervisor).
3. Have a cumulative grade point average of 2.7 or above (on a 4.0 scale). (Special consideration may be given to applicants with grade point averages as low as 2.5 if the last part of their college work shows significant improvement. The additional admissions criterion of documented work experience will be required of applicants with a G.P.A. less than 2.7).
4. Show evidence of personal qualifications and motivation to complete the Case Management Program through:
  - Submission of a completed application—including a personal statement; application fee (application fee waived for applicants from county partnership program); submission of all college and/or university transcripts; and submission of three letters of recommendation (including one from an academic source and one from a work supervisor).
  - Completion of an admissions interview with the School of Science and Technology's Department of Social Work and Social Ecology admissions committee. Evaluation criteria for the interview include: verbal communication skills; critical thinking ability; values congruent with the social work profession; appreciation of human diversity; evidence of reflective learning; and comportment.

These criteria provide evidence that the applicant can complete the certificate and meet program and professional standards. They also provide assurance that students from diverse backgrounds begin the program with equivalent preparation. Final decisions are based on a composite score of all of the above items.

Because courses taken in the Case Management Program are eligible for transfer into the M.S.W. degree program, related prerequisite requirements expected of M.S.W. degree candidates also apply (see M.S.W. degree prerequisite preparation).

NOTE: Prerequisites may be met through individual courses or combinations of courses. Applicants have the opportunity to participate in the review of prerequisites to assure that unique features of their education are appreciated.

Applicants are notified in the acceptance letter from the dean of the School of Science and Technology if prerequisite requirements have not been met.

<b>Required</b>		<b>Units</b>
RELE 522	Bioethical Issues in Social Work	3.0
SOWK 511	Human Behavior and Cross-cultural Environment I	3.0
SOWK 512	Human Behavior and Cross-cultural Environment II	3.0
SOWK 517	Foundation Practice I: Individuals	3.0
SOWK 518	Foundation Practice II: Groups	3.0
STCJ 515	Researching and Writing Graduate Level Papers	2.0
<b>Totals</b>		<b>17.0</b>

<b>Electives</b>		<b>Units</b>	
— —	Elective (2) <i>Chosen in consultation with advisor</i>	Choose 11 units	
SOWK 515	Social Policy I (3)		
SOWK 519	Foundation Practice III: Organizations and Communities (3)		
SOWK 520	Foundation Practice IV: Families (3)		
SOWK 615	Social Policy II (3)		
SOWK 660	Advanced Theory and Practice with Ethnically Diverse Clients (3)		
SOWK 661	Time-Limited Services and Interventions (3)		
SOWK 671	Foundation Practice V: Social Work Administration (3)		
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services (3)		
<b>Totals</b>			<b>11.0</b>
<b>Overall Totals</b>			<b>28.0</b>

## Child Life Specialist—ST

Certificate (postbaccalaureate); M.S.

MICHELLE MINYARD-WIDMANN, Program Director

### FACULTY

Winnetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

### DEPARTMENT

The Child Life Specialist Program is housed in the Department of Counseling and Family Sciences—along with the Counseling Program, the Family Studies Program, and the doctoral program in marital and family therapy.

### Mission statement

Loma Linda University's mission of whole person health care guides the faculty in working collaboratively with the purpose of transforming lives through education, research, clinical training, and community service. Students are invited to join with faculty and staff in supporting the University's values of compassion, integrity, excellence, freedom, justice, purity, and humility. These attributes are depicted by the Good Samaritan statue centrally located on the campus, which contrasts human indifference and ethnic pride with empathy and service. Amid the rich cultural heritage of this academic community, degrees offered in the Department of Counseling and Family Sciences are the foundation upon which to develop new and more nurturing ways of being with others.

### Accreditation

Loma Linda University's academic programs are accredited by the Western Association of Schools and Colleges (WASC).

### THE CHILD LIFE PROFESSION

Child life specialists are experts in the field of child development. They promote effective coping through play, preparation, education, and self-expression activities. Child life specialists provide emotional support for families and encourage optimum development of children facing a broad range of challenging experiences, particularly those related to health care and hospitalization. Understanding that

a child's well-being depends on the support of the family, child life specialists provide information, support, and guidance to parents, siblings, and other family members. They also play a vital role in educating caregivers, administrators, and the general public about the needs of children under stress (Child Life Council <childlife.org>).

## THE PROGRAM

### Certification for the child life profession

Through the Child Life Council, the certified child life specialist (CCLS) credential was developed to increase the proficiency of child life professionals by identifying a body of knowledge, uniform and improved standards of practice, and ethical conduct while enhancing the status and credibility of the profession. The requirements for certification are based on academic and internship experience and successful completion of an examination process (Child Life Council <childlife.org>).

### Learning outcomes

Upon graduation, students will:

- Demonstrate the ability to represent and communicate child life practice and psychosocial issues of infants, children, youth, and families.
- Be knowledgeable of child development and family systems theory.
- Demonstrate the ability to work collaboratively in diverse settings.
- Be eligible to obtain the certified child life specialist (CCLS) credential administered by the Child Life Council.
- Be knowledgeable of legal and ethical standards of the profession.

### Professional experience

Students will participate in supervised clinical training at Loma Linda University Children's Hospital and various hospitals located in California. A 100-hour practicum and 500-hour internship are required to complete the master's degree or certificate. These experiences will provide an opportunity to help students build on course work and put theory into practice.

### Admission requirements

Applicants must meet the School of Science and Technology admission requirements as outlined in the Loma Linda University CATALOG; and give evidence of academic ability, emotional stability, and maturity. Those who meet these requirements as well as the published deadlines for any of the following terms may enroll during Fall, Winter, Spring, or Summer quarters.

Additional admission requirements include:

- Bachelor's degree in the social sciences or equivalent from a regionally accredited college or university.
- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's course work for at least the final 45 units prior to graduation.
- Health clearance.
- A background check (required before matriculation to the program).
- Official transcripts of all college or university credits.
- Three letters of recommendation, as specified.

- Written statement of purpose for applying to the program.
- Interview with department faculty, as scheduled (on-campus group interviews are scheduled for late March and mid-May; other on-campus and phone interviews are scheduled individually).
- If English is not the applicant's first language, a minimum score of 213 for the computer test and 550 for the pencil test on the Test of English as a Foreign Language (TOEFL).
- If the applicant is not a citizen or permanent resident of the U.S., a valid student visa.

### **Financial assistance**

Students accepted into the certificate or M.S. degree program may receive financial assistance through merit-based awards, such as teaching fellowships and a variety of research and student service assistantships; or through need-based financial aid, such as a loan or the University's work/study program. Students may apply for financial aid by writing to:

Student Financial Aid Office  
 Student Services  
 Loma Linda University  
 Loma Linda, CA 92350  
 909/558-4509

### **CHILD LIFE SPECIALIST—CERTIFICATE**

The Department of Counseling and Family Sciences offers high-quality academic education and clinical training leading to a certificate in the Child Life Specialist Program. This certificate will prepare individuals to provide child life services in a health care setting.

### **CHILD LIFE SPECIALIST—M.S.**

The Department of Counseling and Family Sciences offers high-quality academic education and clinical training leading to a master's degree in the Child Life Specialist Program. This degree prepares individuals to provide child life services in a health care setting.

### **Certificates**

The Department of Counseling and Family Sciences offers certificate programs that can be combined with master's or doctoral degrees offered in the department to broaden a student's counseling skills and marketability. Students wishing to add specializations in the following areas must formally apply and be accepted into the desired certificate program(s). Prior to application, the student is advised to consult with the program coordinator.

- Child Life Specialist Certificate
- Clinical Mediation Certificate
- Drug and Alcohol Counseling Certificate
- Family Counseling Certificate
- Family Life Education Certificate
- School Counseling Certificate: California Pupil Personnel Services Credential (PPS)—Open to Counseling and MFT students only

Required		CERT	MS
CHLS 502	Child Life Seminar	2.0	2.0
CHLS 503	Child Life Seminar	1.0	1.0
CHLS 504	Child Life Administration and Program Development	3.0	3.0
CHLS 506	Child Life Specialist: Educational and Therapeutic Intervention	3.0	3.0
CHLS 507A	Aspects of Illness and Disease	3.0	3.0
CHLS 507B	Aspects of Illness and Disease	3.0	3.0
CHLS 508	Grief and Loss	3.0	3.0
CHLS 604	Child Life Internship and Supervision I	3.0	3.0
CHLS 605	Child Life Internship and Supervision II	3.0	3.0
CHLS 606	Parenting Medically Fragile Children	3.0	3.0
CHLS 607	Child Life Professional	3.0	3.0
CHLS 608	Child Life Practicum	1.0	1.0
COUN 576	Exceptional and Medically Challenged Children	3.0	3.0
MFAM 501	Research Tools and Methodology: Quantitative		3.0
MFAM 515	Crisis Intervention and Client Centered Advocacy		3.0
MFAM 516	Play Therapy		2.0
MFAM 528	Culture, Socioeconomic Status, and Therapy		3.0
MFAM 547	Social Ecology of Individual and Family Development or COUN 547		3.0
MFAM 553	Family Systems Theory		3.0
MFAM 568	Groups: Process, and Practice		3.0
MFAM 584	Advanced Child and Adolescent Problems or COUN 584	3.0	3.0
MFAM 644	Child Abuse and Family Violence or COUN 644		3.0
RELR 568	Care of the Dying and Bereaved or equivalent	3.0	3.0
STCJ 515	Researching and Writing Graduate Level Papers	2.0	2.0
		Totals	42.0
		<b>Overall Totals</b>	<b>42.0</b>
			<b>65.0</b>

## Clinical Mediation—ST

Certificate (postbaccalaureate)

IAN P. CHAND, Program Director

### FACULTY

Winetta Baker

Ian P. Chand

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

### DEPARTMENT

The Clinical Mediation Program is housed in the Department of Counseling and Family Sciences. The department also offers two doctoral degree programs in marital and family therapy; one doctoral degree program in family studies; and four master's degree programs—M.A. in family studies and M.S. in counseling, child life, and marital and family therapy.

### PROGRAM

The Clinical Mediation Program is designed to provide professional training in the mediation process involving courts, families, and work environments. This training leads toward becoming a practitioner member in the Association for Conflict Resolution. This program is especially designed for counselors, marital and family therapists, psychologists, social workers, attorneys, human resource administrators, pastors, and others whose professional responsibilities include the mediation process. Family systems theory is central to the training in clinical mediation. The academic and clinical requirements for the certificate include 27 quarter units and 150 clock hours of supervised clinical experience.

### Admission requirements

Applicants must meet the School of Science and Technology admission requirements outlined in this CATALOG and give evidence of academic ability, emotional stability, and maturity. The clinical mediation certificate can be a track in the M.S., D.M.F.T., or Ph.D. degrees in the Marital and Family Therapy program; or an independent certificate. The admission requirements for the certificate program are as follows:

- A bachelor's (B.A. or B.S.) degree from an accredited university.
- Minimum G.P.A. of 3.0 in the undergraduate degree.
- Formal interview with department faculty.

- Three letters of recommendation (two letters if already admitted into the department).
- Fulfilling the requirements for admission for their respective degrees in order to pursue the track in clinical mediation.
- If English is not the student's first language, a minimum score of 213 for the computer test and 550 for the pencil test on the Test of English as a Foreign Language (TOEFL).
- A background check (required before matriculation to the program).

## Curriculum

To earn the certificate, students must successfully complete 27 quarter units. It is possible to complete the academic and clinical requirements for the certificate program in one year. In addition, students are required to complete 150 hours of internship at an approved clinical site.

Required		Units
FMST 528	Parenting	2.0
MFAM 515	Crisis Intervention and Client Centered Advocacy	3.0
MFAM 538	Theory and Practice of Conflict Resolution	2.0
MFAM 544	Family and Divorce Mediation	4.0
MFAM 553	Family Systems Theory	3.0
MFAM 585	Internship in Family Mediation	4.0
MFAM 644	Child Abuse and Family Violence	3.0
MFAM 614	Law and Ethics (3)	Choose one course
MFTH 527	Advanced Legal and Ethical Issues (3)	
Totals		24.0
Religion		Units
RELR 5__	Graduate-level Relational (3)	Choose one course
RELR 564	Religion, Marriage, and the Family (3)	
Totals		3.0
<b>Overall Totals</b>		<b>27.0</b>

## Counseling—ST

M.S.

CHERYL SIMPSON, Program Director

### FACULTY

Winetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

### DEPARTMENT OF COUNSELING AND FAMILY SCIENCES

The Master of Science degree in counseling is housed in the Department of Counseling and Family Sciences, along with other master's degree programs in child life, family studies, and marital and family therapy. The department also offers doctoral programs in family studies and marital and family therapy.

#### Mission and vision statement

Mission: To facilitate wholeness by promoting health, healing, and hope to individuals, families, and communities through education, research, professional training, community service, and global outreach.

Vision: Transforming relationships

### COUNSELING—M.S.

The Master of Science degree in counseling is a 90-quarter unit curriculum designed to prepare the counselor for practice as a licensed professional clinical counselor (LPCC) and for practice as a pupil personnel services (PPS)-credentialed school counselor. Both license and credential competencies are embedded in the curriculum to provide graduates with a wide range of counseling career options in such specialities as mental health counseling, rehabilitation counseling, developmental counseling, pastoral counseling, family counseling, career counseling, school counseling, sports and wellness counseling, addictions counseling, clinical meditation, residence hall counseling, and student services on college campuses.

#### Accreditation

The M.S. degree in counseling is accredited by the Western Association of Schools and Colleges (WASC). The licensed professional clinical counselor (LPCC) license is regulated by the California Board of Behavioral Sciences (BBS). The pupil personnel services (PPS) credential program in school counseling is regulated by the California Commission on Teacher Credentialing (CTC).

**Licensure: Licensed professional clinical counselor (LPCC)**

The M.S. degree in counseling at Loma Linda University is designed to meet academic and clinical requirements for California licensure as a licensed professional clinical counselor (LPCC), which is required for work in counseling agencies and independent practice. Graduates who seek LPCC licensure must meet BBS standards, which include: M.S. degree in counseling; academic verification by Loma Linda University; 3,000 clock hours of postdegree clinical internship; and competency examinations determined by BBS.

**Credential: Pupil personnel services credential in school counseling (PPS)**

The M.S. degree in counseling offers all academic and field requirements for the PPS, which is regulated by the California Commission on Teacher Credentialing (CTC) and is required for work as a salaried, certificated counselor in California public schools. Graduates who seek this PPS credential must meet the CTC standards, which include: M.S. degree in counseling, completion of 600 clock hours of field experience prior to graduation, and passing score on all sections of the California Basic Educational Skills Test (CBEST). The M.S. degree in counseling student must take the CBEST examination during the first two quarters following admission.

**Certificates**

The Department of Counseling and Family Sciences offers certificate programs that can be combined with the master's degree offered in the Counseling Program—as well as with other master's and doctoral degrees offered in the department—to broaden a student's counseling skills and marketability. Students wishing to add specializations in the following areas must formally apply and be accepted into the desired certificate program(s). Prior to application, the student is advised to consult the program director.

- Child Life Specialist Certificate
- Clinical Mediation Certificate
- Drug and Alcohol Counseling Certificate
- Family Counseling Certificate
- Family Life Education Certificate
- School Counseling Certificate: California Pupil Personnel Services Credential in School Counseling (PPS)

**Admission requirements**

Applicants to the Counseling Program must meet the School of Science and Technology admission requirements, as outlined in the Loma Linda University CATALOG; and must give evidence of academic ability, emotional stability, and personal maturity. Applicants who meet these requirements, as well as the published deadlines for the following terms, may be admitted during Fall, Winter, Spring, or Summer quarters. Additional admission requirements include:

- Bachelor's degree from a regionally accredited college or university.
- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's course work for at least the final 45 units prior to graduation.
- Health clearance.
- Official transcripts of all college or university credits.
- Three letters of recommendation as specified.

- Written personal statement that addresses career objectives, personal interest in the counseling profession, rationale for choosing to attend Loma Linda University, how life experiences have influenced applicant's choice to enter the field, and additional thoughts the applicant deems important.
- If English is not the student's first language, a minimum score for the Test of English as a Foreign Language (TOEFL) of 213 on the computer administration of the test; or a score of 550 for the pencil/paper administration.
- If the applicant is not a citizen or permanent resident of the U.S., a valid student visa.
- Interview with department faculty, as scheduled (on-campus group interviews are scheduled for mid-March and mid-May; other on-campus and phone interviews are scheduled individually for applicants who are unable to attend the group interview).
- A background check (required before matriculation to the program).

### **Degree requirements**

Requirements for the M.S. degree in counseling include the following:

- Residence of at least two academic years.
- A minimum of 90 quarter units of graduate work, which includes credit received for core courses, electives, and a 3-unit religion course.
- Certificate of clearance (COC) prior to school counseling field experience, including Live Scan and TB test.
- A minimum of 300 hours of clinical counseling or school counseling field experience from COUN 781-786 or COUN 791-793.
- LPCC requirement: 300 hours of clinical counseling field experience that includes COUN 791, 792, 793 completed within the degree program.
- PPS requirement: 600 hours of school/clinical counseling field experience that includes 400 hours from COUN 781-786 and an additional 200 hours from COUN 781-786 or COUN 791-793; PPS hours in excess of 300 required for degree completion may be completed after graduation.
- Successful completion of a written comprehensive examination (taken before advancement to candidacy) and a final oral examination at the end of the program.
- Background check passed prior to matriculation.
- If taken for elective credit, foreign language courses numbered 400 or higher.

### **Financial assistance**

Students accepted into the program may receive financial assistance through merit-based awards, teaching assistantships, research and student service assistantships, or need-based financial aid, such as a loan or the University's work/study program. Students may apply for financial aid by writing to:

Student Financial Aid Office  
Student Services  
Loma Linda University  
Loma Linda, CA 92350  
909/558-4509

## Learning outcomes

Counseling Program students will:

1. Integrate counseling concepts and skills with a personal epistemology.
2. Demonstrate counseling interventions based upon a broad range of theoretical and legal/ethical frameworks through comprehensive written examination.
3. Develop identity as a professional counselor through membership and participation in professional organizations.
4. Satisfactorily complete supervised practicum in counseling.
5. Meet all University qualifications for the licensed professional clinical counselor (LPCC) program and/or California pupil personnel services (PPS) credential in school counseling, which is issued by the California Commission on Teacher Credentialing (CTC).

## Curriculum

The curriculum for the M.S. degree in counseling is divided into three domains, as outlined below.

Core		Units	
COUN 501	Research Tools and Methodology: Quantitative	3.0	
COUN 502	Research Tools and Methodology: Qualitative	3.0	
COUN 515	Crisis Intervention and Client Advocacy	3.0	
COUN 524	Psychopharmacology and Medical Issues	3.0	
COUN 528	Culture, Socioeconomic Status and Therapy	3.0	
COUN 540	Foundations of Counseling and Psychotherapy	3.0	
COUN 547	Social Ecology of Individual and Family Development	3.0	
COUN 556	Psychopathology and Diagnostic Procedures	3.0	
COUN 568	Groups: Process and Practice	3.0	
COUN 575	Counseling Theory and Applications	3.0	
COUN 576	Exceptional and Medically Challenged Children	3.0	
COUN 577	Assessment in Counseling	3.0	
COUN 579	Career Theories and Applications	4.0	
COUN 584	Advanced Child and Adolescent Development	3.0	
COUN 604	Social Context in Clinical Practice: Gender, Class, and Race	3.0	
COUN 614	Law and Ethics	3.0	
COUN 624	Individual and Systems Assessment	3.0	
COUN 638	Family Therapy and Chemical Abuse	3.0	
COUN 644	Child Abuse and Family Violence	3.0	
COUN 674	Human Sexual Behavior	3.0	
COUN 678	Consultation and Program Evaluation	3.0	
STCJ 515	Researching and Writing Graduate Level Papers	2.0	
RELR 5__	Graduate-level Relational (3)	Choose one course	
RELR 564	Religion, Marriage, and the Family (3)		
		Totals	69.0

**Specialization courses for Licensed Professional Clinical Counselor (LPCC)**

Students choosing not to obtain this licensure may substitute elective courses in consultation with advisor

Units

COUN 675	Dynamics of Aging		1.0
COUN 682	Clinical Counseling Practicum and Seminar (1.0)	Minimum registration requirement is five quarters	5.0
COUN 691	Process Approaches to Counseling and Psychotherapy		3.0
COUN 692	Cognitive Approaches to Counseling and Psychotherapy		2.0
COUN 693	Counseling and Psychotherapy within Systems		2.0
Totals			13.0

**Specialization courses for Pupil Personnel Services (PPS)**

Students choosing not to obtain this credential may substitute elective courses in consultation with advisor

Units

COUN 574	Psychological Foundations of Education		3.0
COUN 679	Professional School Counseling		3.0
COUN 681	School Counseling Practicum and Seminar (1.0)	Minimum registration requirement is two quarters	2.0
Totals			8.0

**Field Experience**

700-numbered courses do not count toward minimum units required for the degree

Units

COUN 781	School Counseling Field Experience (3)	Minimum of 9 units (300 hours) required for degree completion. LPCC Specialization: 300 hours required (COUN 791, 792 and 793). PPS Specialization: 600 hours required (400 from COUN 781-786; additional 200 from COUN 781-786 or COUN 791-793).	—
COUN 782	School Counseling Field Experience (3)		
COUN 783	School Counseling Field Experience (3)		
COUN 784	School Counseling Field Experience (3)		
COUN 785	School Counseling Field Experience (3)		
COUN 786	School Counseling Field Experience (3)		
COUN 791	Clinical Counseling Field Experience (3)		
COUN 792	Clinical Counseling Field Experience (3)		
COUN 793	Clinical Counseling Field Experience (3)		
Totals			—
<b>Overall Totals</b>			<b>90.0</b>

Course titles followed by a number in parentheses, indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the program.

# Criminal Justice—ST

M.S.

FROYLANA HEREDIA-MILLER, Program Director

## FACULTY

A complete list of all part-time and voluntary faculty can be viewed on the department Web site.

Crime disrupts personal and community relationships, endangers public health and safety, and threatens the moral contours of everyday social life. Loma Linda University's mission, "To make man whole," provides a powerful and much-needed context in which criminal justice can be addressed on the basis of healing and restoration. The principles of restorative justice elevate the dimensions of justice that promote the acceptance of responsibility, promote the fulfillment of obligations, embrace reconciliation, and culminate in the restoration of personal and social relationships.

This multidisciplinary approach to deviance and the administration of justice takes into consideration the social, physical, and spiritual well-being of victims, offenders, and communities; and provides a deeper understanding of crime and the struggle of the modern criminal justice system.

## CRIMINAL JUSTICE—M.S.

### Mission

The mission of the Criminal Justice Program is to prepare students to think critically and analytically about the problems of crime and social control in contemporary society.

### Program objectives

Students will demonstrate:

- The ability to integrate and utilize knowledge of social science and criminological theory in the application to problems of criminal justice.
- An understanding of the dimensions and causes of crime and delinquency.
- An understanding of the structure of the American criminal justice system.
- An understanding of the ethical principles that guide the concepts of justice and fairness within professional criminal justice practice.
- The ability to use empirically based research to analyze and critically evaluate practice and criminal justice policy in order to effect system change.
- An understanding of diverse people and cultures as these interact with the criminal justice system.
- An understanding of the differences between retributive and restorative justice approaches in addressing the effects of crime.

### General overview

The 48-quarter unit program begins with 26 units of core course work required for all students. Course work during the first year of study is divided into three professional areas of study, which include: criminal justice, religion, ethics, and social research methods. At the end of the first year, students select their concentration area of policy, planning, and administration or forensic mental health—each requiring 6 units of course work, plus 6 units of concentration-specific selectives.

To complete the program, the student has two options:

1. Nonthesis: Professional practica (540 hours of integrated practicum and seminar), 1 unit of practica orientation, and 9 units of didactic selectives; OR
2. Thesis: 6 units of academic thesis and 4 units of didactic selectives.

### Concentration descriptions

**Policy and administration**—Students opting for the policy, planning, and administration concentration gain knowledge and skills in the public administration, planning, and coordination of governmentally operated criminal and/or juvenile justice systems. Students acquire an appreciation for working with community entities to develop, coordinate, and evaluate these systems in response to community needs. In addition, students develop an understanding of the policy-planning process and the role that criminal or juvenile justice planning councils perform in consensually revising or creating policies aimed at increasing the efficiency and effectiveness of criminal and juvenile justice systems.

**Forensic mental health**—Forensic mental health is a specialized branch of professional practice in which the clinical and criminal justice worlds overlap. Students choosing this area focus on the needs of individuals in the criminal or juvenile justice systems who have serious emotional disorders and/or severe mental illness, and may also present with co-occurring substance abuse. Students gain knowledge and skills in treatment programming within a forensic mental health framework. In addition, this context prepares students to assess and provide expert testimony regarding continued institutionalization versus readiness for outpatient psychosocial rehabilitation, including the development and implementation of assertive community treatment plans.

Both concentrations emphasize a thoughtful reflection about issues in criminal justice that will provide students with a deeper understanding of the logic influencing policy, administration, and practice issues affecting the field.

### Prerequisite

This degree program builds on a broad liberal arts (general education) foundation. Consistent with this view, the program assesses the liberal arts foundation of students applying for the M.S. degree in criminal justice.

A balance of course work in three liberal arts areas:

Humanities (e.g., history, philosophy, literature, art, music, etc.)	20.0-24.0
English and Communication Skills (e.g., oral and written communication media, etc.)	9.0-13.0
Natural and Social Sciences (e.g., mathematics, human biology, physiology, psychology, sociology, anthropology, human development, ethnic studies, economics, political science or government, etc.)	24.0-32.0

Students not meeting the minimum number of units in any of the foregoing areas are required to complete additional course work prior to enrolling in the related criminal justice classes.

**Please note:** All prerequisite requirements must be completed before advancement to candidacy (prior to beginning the advanced curriculum).

Unit values represent a quarter system of measurement. Content from multiple courses may be used to meet most requirements.

## Admission requirements

This program follows the admission requirements of the School of Science and Technology, including:

1. The applicant must demonstrate satisfactory performance on the Graduate Record Examination (GRE). For admission with regular status, satisfactory performance is defined as a minimum combined verbal and quantitative score of 1000, and an analytical writing score of 4.0. Students submitting lower scores may be considered for provisional status.

*or*

The applicant must demonstrate satisfactory performance on a critical essay examination (CEE) administered by the Department of Social Work and Social Ecology under the guidance of the School of Science and Technology. For admission with regular status, satisfactory performance for the CEE is defined as a minimum passing rate of 75 percent.

2. Applicants must demonstrate satisfactory adherence to the minimum academic and professional compatibility criteria established by the program, which includes:
  - a. A cumulative grade point average of 3.0 or above (on a 4.0 scale) (special consideration may be given to applicants with grade point averages as low as 2.75 if the last part of their college work shows significant improvement).
  - b. Evidence of professional compatibility, personal qualifications, and motivation to complete a graduate program by obtaining a passing score on the admissions interview with the department's admissions committee.

Evaluation criteria for the structured interview include:

- verbal communication skills
- critical thinking ability
- values congruent with the criminal justice profession
- appreciation of human diversity
- evidence of reflective learning
- comportsment

3. Submission of a completed application, including a personal statement, application fee, all college and/or university transcripts, and three letters of recommendation (one from an academic source and one from a work supervisor, preferred).

## Curriculum

The 48-unit curriculum for the M.S. degree in criminal justice provides the mix of academic, experiential, and research activities essential for M.S. degree students.

Students must maintain a grade point average of 3.0 (a letter grade of B) on a 4.0 scale; and meet the knowledge, skill, and professional performance competencies outlined by the program.

Students must also maintain a B- (2.7) or better in all required (core) courses and a minimum of a C (2.0) in all selective courses. Courses with grades falling below the standards set for required and selective courses must be repeated. According to University policy, a student cannot repeat more than two courses during his/her graduate program. Students are financially responsible for the cost of repeating courses when grades do not meet these minimum standards.

<b>Core</b>		<b>Non- Thesis</b>	<b>Thesis</b>
CRMJ 515	Crime and Society	3.0	3.0
CRMJ 517	Criminal Procedure and Rules of Evidence	3.0	3.0
CRMJ 520	Restorative Justice	3.0	3.0
CRMJ 574	Criminological Theory	4.0	4.0
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services	3.0	3.0
Totals		16.0	16.0

<b>Religion, philosophy, and ethics</b>		<b>Non- Thesis</b>	<b>Thesis</b>
REL_ 5__	Graduate-level Religion (4.0) <i>An approved 4-unit course within subject area, in consultation with advisor</i>	Choose one course	4.0
RELE 524	Bioethics and Society (4.0)		
Totals		4.0	4.0

<b>Social research methods</b>		<b>Non- Thesis</b>	<b>Thesis</b>
SOWK 547	Research Methods I	3.0	3.0
SOWK 549	Research Methods II	3.0	3.0
Totals		6.0	6.0

<b>CONCENTRATION - Policy, planning, and administration</b>		<b>Non- Thesis</b>	<b>Thesis</b>
Only one concentration required			
PUAD 678	Public Administration Management (3.0)	Concentration selectives - choose 6 units	6.0
SOWK 673	Program Planning and Evaluation (3.0)		
SOWK 676A	Human Resources Planning and Development (3.0)		
SOWK 676B	Human Resources Planning and Development Seminar (3.0)		
SOWK 681	Health and Mental Health Policy and Services (2.0)		
SOWK 683	Advanced Policy Analysis (3.0)		
CRMJ 630	Criminal Justice Planning and Administration	Required	3.0
SOWK 672	Theories of Organizations and Systems	Required	3.0
Totals		6.0	6.0

**CONCENTRATION - Forensic mental health**

Only one concentration required

			Non- Thesis	Thesis
MFAM 638	Family Therapy and Chemical Abuse (2.0)	Concentration selectives - choose 6 units	6.0	6.0
MFAM 644	Child Abuse and Family Violence (2.0)			
PSYC 685	Drug Addiction and Therapy (2.0)			
PSYC 686	Child, Partner, and Elder Abuse (2.0)			
SOWK 494	Conflict Resolution and Dispute Mediation (2.0)			
SOWK 648	Co-occurring Diagnosis: Substance Abuse with Mental Illness (2.0)			
SOWK 659	Interventions with Persons with Severe Mental Illness (2.0)			
SOWK 681	Health and Mental Health Policy and Services (2.0)			
CRMJ 620	Forensic Mental Health	Required	3.0	3.0
SOWK 663	Advanced Social Work Practice with Individuals	Required	3.0	3.0
Totals			12.0	12.0

**General selectives**

Other courses may be approved for elective credits in consultation with the faculty advisor and in accordance with University policies for academic variances

			Non- Thesis	Thesis
CRMJ 518	Legal Discourse (2.0)		4.0	—
CRMJ 519	Moot Court (2.0)			
CRMJ 599	Directed Study/Special Project (1.0)			
GLBH 548	Violence and Terrorism Issues (3.0)			
GLBH 550	Women in Development (3.0)			
SOWK 615	Social Policy II (3.0)			
SOWK 659	Interventions with Persons with Severe Mental Illness (2.0)			
SOWK 683	Advanced Policy Analysis (3.0)			
SOWK 684	Advanced Policy Projects (2.0)			
Totals			4.0	—

**Other**

			Non- Thesis	Thesis
CRMJ 757A	Professional Practicum and Seminar (3.0)	Professional practicum and seminar units are not calculated into degree units. Students pay program fees for professional practicum units instead of tuition. Practicum and seminar hours: 480 + 60.	—	—
CRMJ 757B	Professional Practicum and Seminar (3.0)			
CRMJ 757C	Professional Practicum and Seminar (3.0)			
SOWK 578	Field Orientation (1.0)			
SOWK 697	Applied Research			2.0
SOWK 698	Thesis (2.0)			4.0
Totals			—	6.0
<b>Overall Totals</b>			<b>48.0</b>	<b>48.0</b>

## Drug and Alcohol Counseling—ST

Certificate (postbaccalaureate)

RANDALL WALKER, Program Director

### FACULTY

Winetta Baker

Ian P. Chand

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>

### DRUG AND ALCOHOL COUNSELING—CERTIFICATE

The Drug and Alcohol Counseling Program is offered by the School of Science and Technology through the Department of Counseling and Family Sciences.

#### Objectives

The objectives of the Drug and Alcohol Counseling Program are to:

- Prepare master's degree and doctoral level professionals to effectively counsel substance abusing and addicted adults and their families.
- Offer curriculum and experience for master's and doctoral level professionals that meet the requirements for certification by national certification organizations.
- Integrate certificate requirements into the existing marital and family therapy curriculum.
- Allow hours of experience to be accrued concurrently to meet the requirements of the Board of Behavioral Examiners (BBS), the American Association for Marriage and Family Therapy (AAMFT), and other certifying organizations.

#### Admission

Applicants must meet the School of Science and Technology admission requirements outlined in this CATALOG and give evidence of academic ability, emotional stability, and maturity.

The certificate program is open to currently enrolled marital and family therapy students or other master's degree-level students or graduates. Students in the marital and family therapy program must first complete the current core marital and family therapy curriculum. Applicants will be screened for fitness to complete the certificate program and for ability to work with addicted adults and their families. Additional admission requirements include:

- A paper stating how the applicant will integrate the substance abuse certificate into work as a marriage and family therapist or other clinical professional, and how the applicant will contribute to the addiction treatment field and professional field by completing the certificate.
- Two letters of reference.
- A panel interview composed of faculty and student(s) currently enrolled in the certificate program may be required.
- A critical essay examination after acceptance into the program (examination results to be used at the end of the Fall Quarter by the program director to determine if the writing course will be required).

### Certificate examinations

Course work is developed to help students successfully take and pass certification examinations offered through the National Association of Alcoholism and Drug Abuse Counselors (NAADAC) and the American Academy of Health Care Providers in the Addictive Disorders (AAHCPAD).

### Field work

Students will complete three quarters of fieldwork in an approved site dealing with addiction, alcoholics/addicts, and their families. Fieldwork provides excellent opportunities to gain experience working with substance abusers and their families. Students will be evaluated quarterly. Matrix Institute on Addictions in Rancho Cucamonga is connected with the National Institute on Drug Addiction (NIDA) research system and will be running government-funded studies. My Family, Inc. (MFI, Craig Lambdin), in Riverside offers a variety of opportunities to work with substance abusers in residential and outpatient settings. Inland Valley Recovery Services (IVRS, Roberta Reid) in Upland offers opportunities for students to work with substance abusers and their families in residential and outpatient treatment settings. The Loma Linda University Behavioral Medicine Center offers students opportunities to work with substance abusers in a hospital setting. The Betty Ford Hospital in Rancho Mirage, Cedar House in Bloomington, and Riverside County Office of Alcohol and Drug Programs may also offer additional opportunities for students to gain experience. Numerous other programs offer substance abuse services in San Bernardino and Riverside counties. In addition, with program coordinator approval, students may be able to work in other settings where services are not directly targeted toward substance abusers but where it is determined that addiction may be a significant focus of clinical attention.

Required		Units
MFAM 515	Crisis Intervention and Client Centered Advocacy	3.0
MFAM 524	Psychopharmacology and Medical Issues	3.0
MFAM 638	Family Therapy and Chemical Abuse	3.0
MFAM 644	Child Abuse and Family Violence	3.0
MFAM 645	Advanced Substance Abuse-Treatment Strategies	3.0
REL_ 5__	Graduate-level Religion	3.0
MFAM 635	Case Presentation Seminar (2)	Required: MFAM 635-637 or MFAM 694
MFAM 636	Case Presentation Seminar (2)	
MFAM 637	Case Presentation Seminar (2)	
MFAM 694	Directed Study: Marriage and Family (6)	
Totals		24.0

Electives		Units
MFAM ____	Marital and Family (3)	3.0
		Totals 3.0
		<b>Overall Totals 27.0</b>

## Earth Science—ST

Ph.D.

H. PAUL BUCHHEIM, Program Director

### FACULTY

#### *EBS - PRIMARY APPOINTMENTS*

Leonard R. Brand  
H. Paul Buchheim  
Benjamin Clausen  
Stephen G. Dunbar  
Raul Esperante  
Ronald Nalin  
Kevin E. Nick

#### *SECONDARY APPOINTMENTS*

Ronald L. Carter  
V. Leroy Leggitt  
Samuel Soret

#### *ADJUNCT FACULTY*

M. Awramik  
Doug Britton  
H. Thomas Goodwin

The specific research and academic interests and strengths of the faculty are in:

- vertebrate paleontology, taphonomy, philosophy of science
- limnogeology, sedimentology, paleoenvironments
- biostratigraphy, terrestrial paleoecology
- tropical marine and intertidal ecology and marine invertebrate ecophysiology, comparative physiology
- animal behavior and distribution
- paleomagnetism and sedimentology geographic information analysis and technology
- igneous petrology, nuclear physics, and geophysics
- hydrogeology and environmental geology
- vertebrate paleontology and biogeography

### **EARTH SCIENCE—PH.D.**

The School of Science and Technology's Department of Earth and Biological Sciences offers the program leading to a Doctor of Philosophy degree in earth science. Emphasis is on research and courses in sedimentology, paleontology, and paleobiology that prepare the student to understand the history of the earth and life, its geological context, and the science involved in deciphering this history. Students are encouraged to think independently and to consider various approaches to understanding earth history. Areas of curricular strength and research emphases include sedimentology, limnogeology, paleontology,

paleoenvironments, paleoecology, and taphonomy. Research in paleontology can also be pursued through the Master of Science degree curriculum in geology and the Doctor of Philosophy degree curriculum in biology.

## Objectives

The School of Science and Technology's Earth Science Program strives to:

1. Instill in students the values of honesty, scientific integrity, careful research, and critical, independent thinking.
2. Provide the tools and intellectual environment in which earth scientists can attain their highest potential in scholarship, research, and teaching.
3. Challenge graduate students to consider the relationship among science, faith, and societal responsibility.

## Learning outcomes

1. Demonstrate advanced breadth and depth of knowledge in earth science.
2. Demonstrate the ability to plan and carry out independent research.
3. Demonstrate written and oral communication skills, and the integration of technology in communication.
4. Demonstrate ability to analyze and synthesize previous knowledge.
5. Demonstrate a professional aptitude and attitude.
6. Demonstrate critical evaluation skills in relation to faith and science and to public interest issues.

## Student financial aid

Assistantships for research and/or teaching are available from the Department of Earth and Biological Sciences on a competitive basis. Further information can be obtained by contacting the department at <ebs@llu.edu>. Qualified students are also encouraged to seek fellowships from federal and private agencies with the help of their advisor.

## General requirements

For information about requirements and practices to which all graduate students are subject, the student should consult relevant sections of this CATALOG, as well as general information pertinent to the School of Science and Technology.

## Admission

The successful applicant must meet the general admission requirements of the University and the School of Science and Technology, as outlined in this CATALOG. Applicants must take the general GRE examination and achieve an acceptable score (the subject GRE is not required). International students may be required to take the TOEFL examination. Contact this department or refer to this CATALOG for details. Recommended G.P.A. in a previous M.S. degree program is at least 3.5. Expected undergraduate preparation includes physical geology, mineralogy, sedimentology, stratigraphy, igneous and metamorphic petrology, structural geology, geological field mapping, historical geology, two quarters of college mathematics (including calculus), and one year each of general biology, general physics, and general chemistry. Some of these courses may be taken during residence at Loma Linda University, with approval of the admissions committee.

To apply for admission to the program, go to the LLU Web site at <llu.edu/central/apply>. Students may also contact the department at <ebs@llu.edu>.

## Application time

Applications are accepted at any time. However, it is recommended that applications for Fall Quarter be submitted by March. Financial aid decisions will be made in early April.

## Curriculum

The following constitutes the curriculum for the Doctor of Philosophy degree in earth science.

A minimum of 72 quarter units of academic credit for courses, seminars, and research beyond the master's degree is required (including at least 55 at or above the 500 level); that is, a minimum of 120 units beyond the baccalaureate degree, including the following required courses:

Major		Units
GEOL 555	Carbonate Geology	4.0
GEOL 556	Paleoenvironments	4.0
GEOL 565	Analysis of Sedimentary Rocks	4.0
GEOL 566	Sedimentary Processes	4.0
GEOL 567	Stratigraphy and Basin Analysis	4.0
GEOL 607	Seminar in Geology	each quarter in residence; 1 unit per quarter
GEOL 617	Proposal Writing and Grantsmanship	2.0
GEOL 558	Philosophy of Science (4)	One course required: GEOL 558 required except for students who have taken GEOL 475 or equivalent
GEOL 559	Philosophy of Science and Origins (1)	
Totals		26.0

During the undergraduate or graduate program		Units
GEOL 431	Geochemistry	Required
ENVH 521	Cartography and Map Design (2)	Choose one GIS course
ENVH 522	Principles of Geographic Information Systems and Science (3)	
ENVH 524	GIS Software Applications and Methods (3)	
ENVH 535	Integration of Geospatial Data in GIS (2)	
ENVH 536	Spatial Analytic Techniques and GIS (3)	
BIOL 426	Invertebrate Paleontology (4)	Choose two paleontology courses
BIOL 427	Vertebrate Paleontology (4)	
BIOL 444	Paleobotany (4)	
GEOL 525	Paleopalynology (4)	
GEOL 545	Taphonomy (4)	
STAT 509	General Statistics (4)	Choose one course to be approved by PhD committee
STAT 525	Applied Multivariate Analysis (3)	
Totals		16.0-19.0

<b>Religion</b>		Units
RELE 5__	Graduate-level Ethics	3.0
RELR 5__	Graduate-level Relational	3.0
RELT 5__	Graduate-level Theological	3.0
Totals		9.0

**Electives**

Additional courses required by the student's guidance committee to complete total required units		Units
____ __	Elective	18.0-69.0
Totals		—

**Research**

4 units minimum; will be graded each quarter and can be repeated for additional credit		Units
GEOL 699	Dissertation Research 4 minimum	4.0
Totals		4.0
<b>Overall Totals</b>		<b>72.0-120.0</b>

**Geographic information systems (GIS)**

Skill in use of GIS is becoming more critical in many areas of geological study. Up to 12 units of GIS can be taken as part of the Ph.D. degree curriculum. Students wishing to complete the GIS certificate will need to take an additional 12 units of GIS. Financial aid will not be available for the additional 12 units; students will need to pay the tuition.

**Seminar attendance requirements**

All graduate students in residence must register for and attend Seminars [GEOL 607] each quarter at Loma Linda University.

**Research proposal**

Students are urged to select a research project early in their program, in consultation with a faculty member approved by the department. A written research proposal and oral defense of the student's proposed research should be completed by the end of the third quarter of study. A comprehensive plan for completion of the degree will be approved at this time.

**Advancement to candidacy**

Students may apply for advancement to candidacy by completing Form A, which requires:

1. Completing all deficiencies and corequisites.
2. Selecting a research committee.
3. Completing an approved written research proposal and budget.
4. Passing the oral defense of the research proposal.
5. Being recommended by the program faculty (should be completed by the end of the third quarter of study).

**Registration and tuition after normative time**

The program design is for Ph.D. degree students to finish in the normative time of four years. In certain circumstances students may require more time for completion. Students who are past the normative time for completing their degree must register for two units without a tuition waiver each quarter until they complete their degree. After their normative time, students may request a one-year grace period that must be approved by the department faculty.

**Professional development**

Ph.D. degree students are expected to publish papers, present papers at scientific meetings, and submit research grant proposals.

**Dissertation**

The written thesis must demonstrate the completion of significant, original research and must be written in the format of an appropriate scientific journal where the manuscript is likely to be submitted for publication. At least one manuscript from the dissertation must be submitted for publication before the Ph.D. degree will be granted.

**Defense of dissertation**

An oral presentation and defense of the thesis, including final oral examination on the student's field of study, are required.

**Teaching experience**

Teaching is recommended during at least one quarter. This experience may be obtained through laboratory teaching or it may include presenting several lectures for a course, in consultation with the student's major professor and the course instructor.

**Comprehensive examination**

Oral and written comprehensive examinations are given near completion of the formal course work. The purpose is to measure the student's knowledge of his/her field of study and his/her ability to find, understand, and synthesize the research literature on a topic. The written examination consists of preparing a publishable review or concept paper on a topic selected and evaluated by the student's committee. Subsequent to the written examination, the oral examination covers the student's field of study.

**Varied course offerings**

In addition to the primary offerings of the department, the student, with committee approval, may take courses in other departments as part of the graduate work—according to special interests and needs.

**Rosario Beach summer courses**

In cooperation with the Walla Walla University Marine Station at Anacortes, Washington, facilities are available for marine courses and research by students of this program.

## Environmental Sciences—ST

B.S.

RICARDO A. ESCOBAR III, Program Director

### FACULTY

#### *EBS - PRIMARY APPOINTMENTS*

Leonard R. Brand  
H. Paul Buchheim  
Benjamin L. Clausen  
Stephen G. Dunbar  
Ricardo A. Escobar III  
Raul Esperante  
William K. Hayes  
Kevin E. Nick  
Timothy Standish

#### *SECONDARY APPOINTMENTS*

Ronald L. Carter  
W. William Hughes  
V. Leroy Leggitt  
Samuel Soret  
Seth Wiafe

The Department of Earth and Biological Sciences (EBS) in the School of Science and Technology offers a program leading to a Bachelor of Science degree in environmental sciences (ENVS). This program builds upon a strong interdisciplinary breadth in natural, physical, and earth systems sciences to help understand the effect of human activities on environmental sustainability and management. In addition, since understanding the environment has become highly dependent on advanced technology, students will learn to use marketable geospatial applications, such as: geographic information systems (GIS), remote sensing, computer systems modeling, and global positioning systems (GPS). These tools will help students address environmental problems, such as: climate change, biodiversity decline, groundwater and soil contamination, use of natural resources, waste management, sustainable development, and air and noise pollution. Students have a choice of advanced expertise in one of the following concentration areas: conservation biology and biodiversity, environmental geology, or health geographics. Lastly, this program will encourage students to develop critical thinking skills, healthy lifestyles, and service-oriented attitudes that are necessary to develop effective and ethical solutions to environmental problems on a local and global scale.

### LEARNING OUTCOMES

- Demonstrate breadth and depth of knowledge of earth's environment by understanding the dynamic and interdependent nature of each of earth's component systems (atmosphere, hydrosphere, biosphere, and geosphere).

- Demonstrate the ability to critically evaluate the relation of science and faith within an environmental context.
- Demonstrate written, technical, oral, and problem-solving skills necessary to collect, analyze, and share environmental data with scientific and public communities.
- Demonstrate awareness of the professional and academic opportunities in the environmental science field, as well as knowledge of concurrent environmental science research.
- Obtain an understanding of the human and natural causes to some of Earth's environmental problems and learn how the environmental scientist addresses them.

## **ADMISSION REQUIREMENTS**

The B.S. degree student in the Environmental Sciences (ENVS) Program will generally take the first two years of required corequisite course work (96-105 units) at any accredited community college or university, and the last two years of the ENVS curriculum at Loma Linda University. Also, students may obtain early entrance with the approval of the Earth and Biological Sciences Department after completing at least 48 quarter units of corequisites at a college of their choice. Students accepted early will concurrently take course work at a nearby community college in order to complete their outstanding corequisite requirements. All students seeking admission into the Environmental Sciences Program must have a 2.5 G.P.A. and three letters of recommendation from faculty members at the institutions previously attended.

## **SEMINAR ATTENDANCE REQUIREMENTS**

All students must register for and attend seminars each quarter while at Loma Linda University.

## **EMPLOYMENT OPPORTUNITIES**

Career options in the field of environmental sciences are diverse and abundant. The Environmental Sciences Program prepares students for entry-level jobs in environmental sciences or GIS fields. Graduates may pursue jobs in the public sector through local, state, and federal agencies such as U.S. Fish and Wildlife Service, U.S. Geological Survey, and Department of Fish and Game. In the private sector, graduates may seek jobs in environmental consulting firms, foundations, and organizations. Some examples of career paths that environmental science graduates pursue include environmental engineering, science and social policy; a wide variety of natural resources management fields, such as soil science, forestry, agriculture, watershed science, range management, wildlife conservation, recreation resources, land management, and ecology; landscape architecture, conservation science, geographic information science (GIS), climatology, diverse health sciences; as well as public policy, law, or planning careers.

Environmental scientists may also become involved through employment or volunteering with nonprofit organizations such as Adventist Development and Relief Agency (ADRA) International and help world populations learn how to use the earth's resources to their advantage in a sustainable manner.

## **PREPARATION FOR TEACHING**

A student preparing to teach at the elementary or secondary level will need to complete the requirements for a teaching credential, in addition to the environmental sciences major. The student should consult the undergraduate program director for further information. General elective units can be used for education courses.

## PREPARATION FOR ADVANCED PROGRAMS

Because of the strong foundation in the natural and physical sciences acquired in the Environmental Sciences Program, students have the option of applying to a variety of graduate programs; as well as medical, dental, and engineering programs. In most cases, these programs would require full-year courses in general biology, general chemistry, general physics, and organic chemistry. One or more courses in calculus may also be required. Students are highly encouraged to contact their prehealth or graduate program of choice early in their major to ensure they meet specific course requirements.

## ENVIRONMENTAL INTERNSHIP

The Environmental Sciences Program offers students the opportunity to engage in "hands-on" application of fundamentals learned in course work by enrolling in ENV 487. With the supervision of a faculty advisor, students will develop an academic component of the internship and will be permitted to earn up to 8 units of general elective credit towards the B.S. degree. All internship appointments are subject to Environmental Scientist Program director approval.

## UNDERGRADUATE RESEARCH

Following approval of an academic advisor and research professor, students interested in field research may gain training and experience in one of the three concentration areas offered by the program. Under supervision of a research professor, students will develop a project within the context of environmental conservation, health, or sustainability in an effort to find new solutions to environmental problems.

## HONORS PROGRAM

Students who have a G.P.A. of 3.0 or above, a sponsoring faculty member, and an approved research proposal may apply to be accepted in the environmental sciences honors program. The honors student must register for at least 2 units of undergraduate research, conduct original research under a faculty member's direction, submit a written undergraduate thesis, and give a public oral presentation.

## FINANCIAL AID

Scholarships and discounts for earth and biological science undergraduate students in the Department of Earth and Biological Sciences include:

Tuition rate in Geology or Environmental Sciences programs—B.S.: \$274/unit; 12-18 units—\$3,288 per quarter.

1. Academic scholarships
  - a. Scholarships based on test results
    - a. American College Test (ACT) score of 30 or above: \$1,600 (or 16 percent of tuition). For a student who maintains a cumulative G.P.A. of at least 3.5; renewable for successive years.
    - b. Scholastic Aptitude Test (SAT)
      - a. National Merit Finalist Scholarship covers 100 percent tuition
      - b. National Merit Semifinalist Scholarship covers 34 percent tuition
      - c. National Merit Commended Scholarship covers 20 percent tuition

Student must maintain a 3.5 cumulative G.P.A. renewable for successive years. If a student qualifies for both an ACT and an SAT scholarship, the scholarship with the highest dollar value will apply.

- b. Renewable G.P.A. scholarships (eligibility based on G.P.A. at the end of previous academic year)
- G.P.A. between 3.75 and 4.00, \$1,480 per year (or 15 percent of tuition)
  - G.P.A. between 3.50 and 3.74, \$1,180 per year (or 12 percent of tuition)
  - G.P.A. between 3.25 and 3.49, \$900 per year (or 9 percent of tuition)

If a student is eligible for a National Merit Scholarship and/or an ACT scholarship and a G.P.A.scholarship, the scholarship with the highest dollar value will apply.

## 2. Guidelines

- All scholarships or other financial awards cannot exceed costs for tuition and fees.
- If a student qualifies for more than one scholarship or reduced tuition award, the award with the largest dollar value applies.
- Scholarship or tuition reduction will be applied as a credit to the student's tuition account at the rate of one-third of the total per quarter, and is available to full-time students only.
- Loss of scholarship money may result when a student does not maintain the minimum cumulative G.P.A. required by the particular scholarship.
- The last day of final tests for the first quarter that a student is enrolled at LLU is the deadline for verifying with Student Financial Services that the student qualifies for a scholarship for the academic year.
- The scholarships and reduced tuition award listed here apply only to students enrolled in undergraduate programs in the Department of Earth and Biological Sciences.

Note: Determination of the amount of scholarships and awards at Loma Linda University is influenced by FAFSA data. State and federal grants, as well as other grants and subsidies, will be applied before Loma Linda University scholarships and discounts; therefore, some students may be eligible to receive only a portion of their scholarship award.

## **ENVS REQUIRED COREQUISITE COURSES**

Freshman and sophomore year corequisite courses are not offered at Loma Linda University and should be taken at any accredited college prior to (or during) enrollment at this university. Students approved for early enrollment may take some of their outstanding corequisites concurrently with courses offered at this University. See admissions section above for conditions of early acceptance. A total of 192 units is required for the B.S. degree.

## **Required units and residence requirement**

All unit requirements listed are quarter units. Minimum requirements include one year of full-time residence in Loma Linda University, completing 32 of the last 46 units, or a minimum of 45 total units of

course work for the degree at Loma Linda University. If the student has attended an institution that does not give bachelor's degrees, a maximum of 105 quarter units of transfer credit can be from a two-year junior or community college.

Please note: Grades of C- and below are not accepted for credit.

### REQUIRED GENERAL EDUCATION COURSES (44-48)

The University CATALOG contains a full description of the general education requirements.

(Some may be taken at LLU)

English composition (complete sequence that meets baccalaureate requirements)	9.0-13.0
Religion (minimum 4 units for each 28 units enrolled in an SDA college)	0-8.0
Personal health or nutrition	2.0
Physical education (two physical activities)	1.0
Social Sciences (e.g. anthropology, economics, geography, political science, psychology, sociology, etc.)	12.0
Humanities (a course from three of the following areas: civilization/history, fine arts, literature, modern language, performing/visual arts [4 units maximum], or philosophy)	12.0-20.0

### REQUIRED COGNATE COURSES (31)

(Not offered at LLU unless specified)

College algebra	4.0
Statistics (offered at LLU)	3.0

General biology and general chemistry are required for the major. General physics is recommended as a science cognate. All three courses are required by premedicine and some other preprofessional and graduate programs (see previous section on Preparation of Advanced Programs for more on requirements).

General biology	Two of the three full-year sequences are required	12.0
General chemistry		12.0
General physics		12.0

### ENVS MAJOR REQUIREMENTS

Environmental science major courses		Units
ENVH 414	Introduction to Environmental Health	3.0
ENVH 422	Principles of Geographic Information Systems	4.0
ENVH 424	Desktop GIS Software Applications	4.0
ENVH 434	Advanced GIS Software Applications	3.0
ENVS 401	Earth System Science and Global Change	4.0
ENVS 455	Environmental Law and Regulation	4.0
ENVS 485	Seminar in Environmental Sciences (1.0)	6.0
GEOL 475	Philosophy of Science and Origins	4.0
Totals		32.0

**CONCENTRATION - CONSERVATION BIOLOGY AND BIODIVERSITY**One concentration required Units

BIOL 415	Ecology	Required	4.0
BIOL 406	Marine Biology (3)	Choose remaining units from these electives	16.0
BIOL 409	Mammalogy (4)		
BIOL 439	Behavioral Ecology (4)		
BIOL 449	Biodiversity and Conservation (3)		
BIOL 456	Techniques in Vertebrate Ecology (3)		
BIOL 515	Biogeography (3)		
BIOL 517	Ecological Physiology (5)		
Totals			20.0

**CONCENTRATION - ENVIRONMENTAL GEOLOGY**One concentration required Units

GEOL 316	Mineralogy (4)	Choose 6 units	6.0
GEOL 416	Sedimentology and Stratigraphy (8)		
GEOL 424	Structural Geology (4)		
GEOL 443	Historical Geology (4)		
GEOL 456	Field Methods of Geologic Mapping (4)		
GEOL 204	Physical Geology		4.0
GEOL 431	Geochemistry		4.0
GEOL 464	Environmental Geology		3.0
GEOL 465	Hydrogeology		4.0
Totals			21.0

**CONCENTRATION - Health geographics**One concentration required Units

ENVH 423	Practical Issues in GIS (4)	Choose 6 units	10.0
ENVH 437	GIS in Public Health (2)		
STAT 417	Biomedical Data Management I (4)		
STAT 464	Survey and Advanced Research Methods (4)		
ENVH 421	Cartography and Map Design		3.0
ENVH 435	Sources, Capture, and Integration of GIS Data		3.0
ENVH 436	Spatial Analysis with GIS		4.0
Totals			20.0

**Religion**Choose at least one course from each prefix Units

RELE 4__	Upper Division Ethics	Environmental Ethics recommended	2.0-4.0
RELR 4__	Upper Division Relational		2.0-4.0
RELT 406	Adventist Beliefs and Life (2 to 3)	One course required	2.0
RELT 423	Loma Linda Perspectives (2 to 3)		
RELT 436	Adventist Heritage and Health (2 to 3)		
RELT 437	Current Issues in Adventism (2 to 3)		
Totals			

**Required environmental sciences electives**

Selected from the Environmental Sciences concentration areas

Units

GEOL ___	Geology	Courses selectred from any of rthe Environmental Sciences concentration areas. A minimum of one course from each non-concentration area is required.	14.0
Totals			10.0

**General electives**

Any undergraduate courses taught at Loma Linda University or other regionally accredited college to meet the 192-unit total requirement

Units

___ ___	Elective		—
Totals			—
<b>Overall Totals</b>			<b>192.0</b>

## Family Counseling—ST

Certificate (postbaccalaureate)

MARY E. MOLINE, Program Director

### FACULTY

Winetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

### DEPARTMENT

The Family Counseling Program is housed in the Department of Counseling and Family Sciences, along with master's degree programs in child life, counseling, family studies, marital and family therapy; as well as doctoral programs in family studies and marital and family therapy.

### Mission statement

The Family Counseling Program is consistent with Loma Linda University's vision of transforming lives through whole person health care. The mission of the program is to bring health, healing, wholeness, and hope to individuals, families, and communities through education, research, clinical training, and community service. The Family Counseling Program accomplishes this by addressing relational needs and concerns of individuals and families over the life course in the contexts of communities and global society.

### FAMILY COUNSELING—CERTIFICATE

The certificate in family counseling is offered by the School of Science and Technology through the Marital and Family Therapy Program and is designed for individuals who find a significant part of their work directed toward dealing with relationship problems of individuals, families, and children. It is for those professionals who would like to gain family counseling skills but who do not desire to complete another degree or earn a clinical license.

The program will help students acquire theoretical and systemic knowledge about relationships, families, and children; as well as develop practical skills applicable to both their professional and personal lives. It is designed for people who have a wide range of experiences, backgrounds, and goals. Physicians, ministers, nurses, teachers, chaplains, counselors, EAP counselors, social workers, school counselors, childcare workers, drug counselors, lawyers, and others in related professions can enhance their effectiveness through this program. Paid paraprofessionals—such as group home workers—and

volunteers for counseling organizations can also benefit from a knowledge of family counseling techniques. People involved in the business world, such as supervisors, managers, and personnel department employees, can also benefit from the improvement of interpersonal and family skills offered through the program.

The on-campus program can be completed in two quarters (Fall and Winter).

### Admission

Applicants to the certificate program must meet the School of Science and Technology admission requirements and must have a bachelor's degree from an accredited university or college (Official transcripts are evidence of degrees and courses completed).

Students must have a cumulative grade point average of 2.7 or above (on a 4.0 scale). Special consideration may be given to students with grade point averages as low as 2.5 if the last 45 units are equal to an average G.P.A. of at least a 2.7. In addition, applicants must provide evidence of emotional stability, academic ability, and maturity.

### Certificate requirements

To earn the certificate, students must successfully complete 27 quarter units, including 19 core units and 8 units of electives. It is possible to complete the certificate in two academic quarters. No clinical experience is required, but students may use their electives to become exposed to clinical modalities. This certificate does not assist the student in applying for or obtaining a clinical license.

### Learning outcomes

1. Students will demonstrate awareness of contextual issues in the field of marital and family therapy,
2. Students will gain an understanding of how to apply their knowledge of contextual issues to their field of study/work.

Required		Units
FMST 514	Cross-cultural Counseling and Family Values	2.0
MFAM 515	Crisis Intervention and Client Centered Advocacy	3.0
MFAM 535	Case Presentation and Professional Studies	4.0
MFAM 551	Family Therapy: Foundational Theories and Practice	3.0
MFAM 553	Family Systems Theory	3.0
Totals		15.0

### Electives

As approved by adviser		Units
MFAM ___	Marital and Family	9.0
Totals		9.0

### Religion

		Units
RELR 5__	Graduate-level Relational (3)	Choose one course 3.0
RELR 564	Religion, Marriage, and the Family (3)	
Totals		3.0
<b>Overall Totals</b>		<b>27.0</b>

# Family Life Education—ST

Certificate (postbaccalaureate)

CURTIS A. FOX, Program Director

## FACULTY

Winetta Baker

Ian P. Chand

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

## DEPARTMENT

In addition to the certificate program in family life education, the M.A. and Ph.D. degree curricula in family studies are housed in the Department of Counseling and Family Sciences. This department also offers other graduate programs in child life (M.S.), counseling (M.S.), and marital and family therapy (M.S., Ph.D., and D.M.F.T.); as well as a number of graduate certificate programs for both degree and nondegree students.

## FAMILY LIFE EDUCATION—CERTIFICATE

The certificate in family life education is designed for persons who wish to have basic knowledge and skills in the delivery of family services using a family life education methodology instead of, or in addition to, a therapeutic methodology. This program is often sought by persons who do not wish to pursue a master's degree in family studies or a related field, but who wish to have academic qualifications to practice in that field. Students are provided with an understanding of the structure and functioning of the family as a social institution from a systems perspective and with the delivery skills required in a teaching format.

Historically, this certificate has been pursued by persons who are established professionals in their field who wish to have some academic emphasis in the area of family life education. Teachers, nurses, marital and family therapists, and pastors are examples of such persons.

The Family Life Education Program meets the course requirements of the National Council on Family Relations for certified family life educator (CFLE). More information on becoming certified by the National Council on Family Relations can be found in the organization's official Web site at <[ncfr.org](http://ncfr.org)>.

## Admission

Applicants to the certificate program must meet the School of Science and Technology admission requirements. In addition to evidence of emotional stability and maturity, the following requirements must be met:

- Completed Loma Linda University application.
- Four-year baccalaureate degree (B.A. or B.S., or equivalent) from an accredited college or university with a 3.0 G.P.A.
- Official transcripts of scholastic record showing appropriate preparation, in grades and content.
- Personal interviews with two of the program faculty.
- If English is not the student's first language, a minimum score of 213 for the computer test and 550 for the pencil test on the Test of English as a Foreign Language (TOEFL).
- If the student is not a citizen or permanent resident of the U.S., presentation of a valid student visa.

## Learning objectives

1. Student will meet professional standards in basic content areas for certification in family life education.
2. Student will know the difference between family life education and therapy and will be able to deliver services using family life education methodologies.
3. Student will establish ethical guidelines for the practice of family life education and will maintain professional identity as a family life educator.

## Curriculum

The curriculum is composed of 27 quarter units and may be completed in one year (attending full time) or extended over several years of part-time studies. The program is structured to accommodate part-time and nontraditional students.

Required		Units
FMST 514	Cross-cultural Counseling and Family Values	2.0
FMST 515	Professional Issues in Family-Life Education	3.0
FMST 524	Family Resource Management	2.0
FMST 528	Parenting	2.0
FMST 529	Family Life Education	3.0
FMST 614	Family Communication	3.0
MFAM 547	Social Ecology of Individual and Family Development	3.0
MFAM 553	Family Systems Theory	3.0
MFAM 674	Human Sexual Behavior	3.0
RELR 564	Religion, Marriage, and the Family	3.0
Totals		27.0
<b>Overall Totals</b>		<b>27.0</b>

## Family Studies—ST

M.A., Ph.D.

CURTIS A. FOX, Program Director

### FACULTY

Winetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

### DEPARTMENT

The M.A. and Ph.D. degree curricula in family studies are housed in the Department of Counseling and Family Sciences. Two additional doctoral programs in marital and family therapy are offered in the department; however, these degrees are clinical degrees, whereas the family studies degree is nonclinical. The department also offers programs in child life (M.S.), counseling (M.S.), and marital and family therapy (M.S., Ph.D., and D.M.F.T.); as well as a number of graduate certificate programs for both degree and nondegree students.

### Mission statement

With its emphasis on whole person care, Loma Linda University acknowledges the interrelationship of all aspects of human life and is committed to human beings' mental, physical, social, and spiritual well-being. The life of the University is shaped by its seven core values: compassion, integrity, excellence, freedom, justice, purity, and humility. The Department of Counseling and Family Sciences supports the mission of the University and seeks to reach out with care and compassion to individuals and families from all communities to facilitate greater wholeness on the journey of life.

### The discipline

Family studies refers to the academic study of marriage and family living and focuses on the whole body of research on the social institution of the family. The family is studied from the perspectives of psychology, sociology, anthropology, biology, history, politics, religion, and law. This field of study is often associated with acquiring knowledge and skills to understand families better and be able to serve these families better, thus promoting greater stability and well-being. The Ph.D. degree is the highest level of academic preparation in the field.

## Certificates

The Department of Counseling and Family Sciences offers certificate programs that can be combined with master's or doctoral degrees offered in the department to broaden a student's counseling skills and marketability. Students wishing to add specializations in the following areas must formally apply and be accepted into the desired certificate program(s). Prior to application, the student is advised to consult with the program coordinator.

- Child Life Specialist Certificate
- Clinical Mediation Certificate
- Drug and Alcohol Counseling Certificate
- Family Counseling Certificate
- Family Life Education Certificate
- Medical Family Therapy Certificate
- School Counseling Certificate: California Pupil Personnel Services Credential (PPS)—open only to M.S. degree students in counseling and in marital and family therapy

## FINANCIAL AID

Students who are accepted into the program may apply for financial aid through the University's Student Financial Aid Office. In some cases when funds are available, students may qualify for graduate research or teaching assistantships. The Student Financial Aid Office may be contacted by mail or telephone at:

Student Financial Aid Office  
Student Services  
Loma Linda University  
Loma Linda, CA 92350  
909/558-4509

## FAMILY STUDIES—M.A.

### Career options

The M.A. degree in family studies is designed to prepare students to work in applied settings, such as family services agencies, schools, churches, and other community-based programs; as well as in private practice using family life education methodology as the means of intervention for effecting changes in family rules, roles, and relationships. Students will acquire greater knowledge of individual development and family dynamics, increase their skills as family life educators, and/or secure important knowledge and skill to augment their present career. The M.A. degree in family studies is often pursued by students who are seeking graduate level preparation for doctoral studies in the family sciences.

### Degree approval and certification

The M.A. degree in family studies meets the highest standards and quality in the field. This program supports the standard curriculum of the National Council on Family Relations (NCFR) and prepares graduates to become certified family life educators (CFLE). Earning the M.A. degree guarantees quick processing of the application for this credential. Earning the CFLE credential is desirable since many

agencies and educational institutions require this certification when considering potential employees. Further information on securing the CFLE designation may be found on the Web site of the National Council on Family Relations at <ncfr.org>.

### **Professional training**

In addition to the courses of instruction required for the successful completion of the M.A. degree in family studies, there is also a service-learning component that is important in shaping the student's knowledge and experience in the field. This component includes 100 hours of internship experience. This internship requires direct involvement in an organization for which the provision of services to families is at the forefront. The student is expected to engage in exercises such as program planning, service delivery, and/or evaluation of family life education programs. This experience is designed to create sensitivities to family needs, provide practical experience in family life programming, and enable students to have a competitive edge in the work world. Upon approval from the director of the program, this learning experience may be completed at two different sites.

### **M.A./Ph.D. degree option**

The M.A./Ph.D. degree option—essentially a combination of the two degree programs—in family studies is available. Application to this program may be made after the completion of a bachelor's degree (B.A. or B.S.) from an accredited institution. The student will complete 126 units of course work for this program. The M.A. degree will be awarded to the student after the successful completion of the basic department requirements. The program allows for the transfer of all courses from the M.A. degree that are required for the Ph.D. degree.

The student will not be required to take FMST 505, FMST 506, FMST 698, or RELR 564. These courses will be substituted by the doctoral level courses in research methods (FMST 604, FMST 605), dissertation research (FMST 699), and religion (9 units).

Should a student fail to make satisfactory progress toward the doctoral degree requirements, s/he will be advised by the department faculty to complete the required courses for the M.A. degree if possible, prior to termination from the Ph.D. degree program.

### **Admission requirements**

Acceptance to the M.A. degree curriculum in family studies requires that the applicant meet the admission requirements of the School of Science and Technology. The applicant must submit a completed application to the School of Science and Technology, as well as show evidence of scholastic ability and emotional stability. If accepted, the student will begin his/her program in the Fall Quarter, but s/he may petition to begin at another quarter of the academic year.

Below is a list of additional admission requirements:

- Minimum grade point average of 3.0 (4.0 scale) in bachelor's degree course work for at least the final 45 units prior to graduation.
- Health clearance.
- A background check (required before matriculation to the program).
- Official transcripts on file.
- Three letters of recommendation, as specified.
- Statement of intent.
- Interview with department faculty as scheduled (on-campus group interviews are scheduled for mid-March and mid-May; other on-campus and phone interviews are scheduled individually).

- If English is not the student's first language, a minimum score of 213 for the computer test and 550 for the paper-and-pencil test on the Test of English as a Foreign Language (TOEFL).
- If the student is not a citizen or permanent resident of the U.S., a valid student visa.

### **Learning outcomes**

1. Students will develop and maintain professional identity as graduate level persons in family studies.
2. Students will demonstrate critical skills in evaluating the current and ongoing issues and theories in the field of human development and family studies.
3. Students will be proficient in family service practice skills using family life education methodologies.
4. Students will be conversant with legal and ethical issues as family scientists in the areas of teaching, research, and service.
5. Students will have skills in research, program evaluation, and program development.
6. Students will have critical thinking and writing skills appropriate to the field of family science.

### **Curriculum**

The curriculum for the M.A. degree curriculum in family studies includes 54 units of course work and may be completed in one-and-one-half-to-two years of full-time study. Students have up to five years to complete the degree. The program is structured to accommodate part-time and nontraditional students.

### **FAMILY STUDIES—PH.D.**

#### **Family studies and career options**

The Ph.D. degree in family studies is designed to prepare highly skilled persons to work in academe as teachers and researchers and/or to work in applied settings—such as family services agencies, schools, churches, and other community-based programs—as well as in private practice settings as family life consultants or family life educators. Students are able to acquire sophisticated knowledge of individual and family development and increase their skills as family life educators.

In addition to the opportunity to interact with state-of-the-art information on marital and family living, the Department of Counseling and Family Sciences offers individual attention because of a low student-to-teacher ratio, a collaborative research and learning environment, an opportunity to individualize the program of study, a choice of emphasis consistent with the student's career goals, and practical experience in areas of career interest.

#### **Goals of the Ph.D. degree in family studies**

The Ph.D. degree in family studies at Loma Linda University represents the highest level of academic training for family scientists and provides a family systems approach to observing, understanding, and analyzing close relationships and families using the tools of family science. This nonclinical degree, which is based on a scientist-professional model, aims to prepare academicians, researchers, service administrators, and providers in family services organizations.

The Ph.D. degree curriculum will equip students with four major skills:

1. Acquisition, integration, and impartation of substantive and theoretical areas of human and family development.

2. Use of statistics and research methodologies to conduct empirical research on individuals, families, and other close relationships.
3. Use of strategies to build individual and family competence informed by family science scholarship.
4. Mastery of assessment and evaluation skills to measure treatment and program outcomes and effectiveness.

### **Degree approval and certification**

The Ph.D. degree is the highest level of academic preparation in family studies. This University's Ph.D. degree meets the highest standards and quality in the field. It supports the standard curriculum of the National Council on Family Relations (NCFR) and prepares graduates to become certified family life educators (CFLE) by the National Council on Family Relations. Completion of the Ph.D. degree curriculum guarantees quick processing of the NCFR application for the certificate in family life education. Earning the CFLE credential is desirable since many agencies and educational institutions require this certification when considering potential employees. Further information on securing a CFLE designation may be found on the Web site of the National Council on Family Relations at <[ncfr.org](http://ncfr.org)>.

### **Service learning**

In addition to the courses of instruction required for the successful completion of the Ph.D. degree in family studies, there is a service-learning component that is very important in the student's professional formation in the field. This component of the program includes 300 hours of internship experience—which requires direct involvement in teaching, research, or the provision of family services through an organization that serves the needs of families. The internship is designed to provide learning experiences consistent with the student's career interests or goals. Teaching experiences are expected to be at the tertiary educational level in areas of family life or family services. A research internship will consist of active immersion in the research process, leading to the submission of at least one paper for publication. A family service internship may include activities such as program planning, service delivery, grant writing, program evaluation, and/or other related activities. This experience is designed to create sensitivities to family needs, provide practical experience in family life programming, and give students a competitive edge in the work world. Upon approval from the program director in the student's department, this learning experience may be completed at two different sites.

### **Admission requirements**

Admission to the Ph.D. degree curriculum in family studies in the Department of Counseling and Family Sciences remains competitive. Each year, only a small number of applicants will be admitted. If accepted, students are expected to begin their studies in the Fall Quarter, but they may petition the department to begin at another quarter of the academic year. The requirements for admission include a completed application to the School of Science and Technology. In addition, each applicant must show evidence of scholastic ability and emotional stability. Students will be considered for admission after the successful completion of a bachelor's or master's degree in any field. Below is a list of other admission requirements:

- Minimum G.P.A. of 3.3 in undergraduate degree or graduate degree
- Official academic transcripts
- Three letters of recommendation
- Competitive GRE scores

- Personal essay
- Formal interview with department faculty
- Successful completion of an undergraduate course in statistics
- Acceptable TOEFL score if English is the applicant's second language
- Background check (prior to matriculation)

The final decision for admission to the Ph.D. degree curriculum is based on a comprehensive assessment of academic history (G.P.A.), GRE scores, performance at the interview, and letters of reference. The final decision on admission is made by the dean of the School of Science and Technology.

Students with a B.A. degree in family studies or a related field may also apply for admission to the combined degrees M.A./Ph.D. curriculum in family studies.

### **Learning outcomes**

1. Students will have professional identity as doctoral level family scientists.
2. Students will be grounded in the theoretical and philosophical foundations of the field of family science and be conversant with the ongoing developments in family theories.
3. Students will be able to critique and evaluate the current and ongoing issues in the field of human development and family studies.
4. Students will be conversant with legal and ethical issues as a family scientist in the areas of teaching, research, and service.
5. Students will become adept in family service practice skills.
6. Students will contribute to the body of knowledge in family social science.
7. Students will have sophisticated knowledge and skills as researchers in the field of family science.

### **Curriculum**

The curriculum for the Ph.D. degree in family studies includes 104 units of course work and may be completed in three-to-four years of full-time post-master's study. Students who do not have a solid grounding in family science will be offered a number of prerequisite courses necessary for building a foundation for later advanced courses.

### **Concentrations**

All students in the doctoral program must declare a concentration, which will include 12 units of course work in a specific area that gives depth and breadth to their work and informs their future academic or career interest. Three concentrations are offered by the Department of Counseling and Family Sciences: family, systems, and health; school consultation; and systems consultation and professional relations. Students who wish to do another concentration may petition the department faculty through the program director for variance.

<b>Major</b>		<b>MA</b>	<b>PhD</b>
FMST 504	Advanced Family Studies		4.0
FMST 514	Cross-cultural Counseling and Family Values	2.0	
FMST 515	Professional Issues in Family-Life Education	3.0	3.0
FMST 518	Advanced Theories in Child Development		3.0
FMST 519	Teaching in Higher Education		2.0
FMST 524	Family Resource Management	2.0	2.0
FMST 526	Marriage and the Family	3.0	3.0
FMST 528	Parenting	2.0	2.0
FMST 529	Family Life Education	3.0	3.0
FMST 684	Doctoral Seminar		1.0
MFAM 515	Crisis Intervention and Client Centered Advocacy	3.0	
MFAM 545	Gender Perspectives	2.0	
MFAM 547	Social Ecology of Individual and Family Development	3.0	
MFAM 553	Family Systems Theory	3.0	
MFAM 568	Groups: Process, and Practice	3.0	
MFAM 638	Family Therapy and Chemical Abuse	3.0	
MFAM 674	Human Sexual Behavior	3.0	
Totals		35.0	23.0

<b>Religion</b>		<b>MA</b>	<b>PhD</b>
RELE 5__	Graduate-level Ethics		3.0
RELR 535	Spirituality and Mental Health		3.0
RELR 564	Religion, Marriage, and the Family	3.0	
RELT 615	Seminar in Philosophy of Religion		3.0
Totals		3.0	9.0

<b>Research</b>		<b>MA</b>	<b>PhD</b>
FMST 505	Social Research Methods: Quantitative	3.0	
FMST 506	Advanced Social Research Methods	3.0	
FMST 601	Statistics I		4.0
FMST 602	Statistics II		4.0
FMST 603	Statistics III		4.0
FMST 604	Advanced Qualitative Methods		4.0
FMST 605	Advanced Quantitative Methods		4.0
FMST 608	Analysis and Presentation Issues in Research		3.0
FMST 668	Qualitative Research Practicum		2.0
FMST 697	Research		3.0
FMST 698	Project or Thesis	3.0	
Totals		9.0	28.0

**Electives**

Units may be chosen from among various courses offered by the department, or from other departments, depending on professional interest or need

		MA	PhD
___	Elective	4.0	
Totals		4.0	—

**Practicum**

Units do not count toward total units required for the degree

		MA	PhD
FMST 695	Internship in Family Studies (1.0-4.0)	2.0	
Totals		—	—

**CONCENTRATION - Family, Systems, and Health**

Choose one concentration. This concentration prepares marital and family therapists to work with issues related to health and illness in medical settings and/or in collaboration with other health care professionals. The concentration includes opportunities to work in the primary care LLU clinics to get life experience with patients, doctors, and other health care professionals (Family Medicine and SACH); as well as the opportunity to work with some specific health-related research projects.

		MA	PhD
MFTH 534	Family Therapy and Medicine		3.0
MFTH 544	Health and Illness in Families		3.0
MFTH 564	Social Context of Health		3.0
MFTH 637	Special Projects in Health and Illness in Families		1.0
Totals		—	—

**CONCENTRATION - School Consultation**

Choose one concentration. The school consultation concentration broadens the systematic work of professionals in marital and family therapy or family studies to include more knowledgeable consultation with school administrators, teachers, counselors, and psychologists regarding the well-being of children, adolescents, and college or university students in educational environments. Doctoral students may select 12 units of study for this concentration from the list of courses below.

		MA	PhD
COUN 574	Psychological Foundations of Education (4.0)	—	—
COUN 576	Exceptional and Medically Challenged Children (3.0)		
COUN 577	Assessment in Counseling (3.0)		
COUN 578	College and Career Counseling (3.0)		
COUN 678	Consultation and Program Evaluation (3.0)		
COUN 679	Professional School Counseling (3.0)		
Totals		—	—

**CONCENTRATION - Systems Consultation and Professional Relations**

Choose one concentration

		<b>MA</b>	<b>PhD</b>
MFTH 528	Organizations: Structure, Process, and Behavior		3.0
MFTH 555	Organizational Development and Change		3.0
MFTH 556	Management Consulting and Professional Relations		3.0
MFTH 557	Organizational Assessment		3.0
Totals		—	—
<b>Overall Totals</b>		<b>51.0</b>	<b>72.0</b>

Course titles followed by a number in parentheses indicate a variable unit course or a course that is to be repeated one or more times until the total required units are reached. The number inside the parentheses is the unit value of the course. The number in the column is the total units required for the degree curriculum.

## Geology—ST

B.S., M.S.

KEVIN E. NICK, Program Director for B.S. degree

H. PAUL BUCHHEIM, Program Director for M.S. degree

### FACULTY—B.S.

#### *EBS—PRIMARY APPOINTMENTS*

Leonard R. Brand

Paul Buchheim

Benjamin L. Clausen

Stephen G. Dunbar

Raul Esperante

James L. Gibson

Ronald Nalin

Kevin E. Nick

#### *SECONDARY APPOINTMENTS*

V. Leroy Leggit

#### *ADJUNCT FACULTY*

Douglas R. Britton

Thomas Goodwin

### FACULTY—M. S.

#### *PRIMARY APPOINTMENTS*

Leonard R. Brand

H. Paul Buchheim

Ben Clausen

Stephen G. Dunbar

Raul Esperante

Ronald Nalin

Kevin E. Nick

#### *SECONDARY APPOINTMENTS*

V. Leroy Leggitt

#### *ADJUNCT FACULTY*

Stanley M. Awramik

Douglas R. Britton

H. Thomas Goodwin

## **GEOLOGY—B.S.**

The Department of Earth and Biological Sciences in the School of Science and Technology offers a program leading to the Bachelor of Science degree in geology. This program provides the student with a field-oriented education, emphasizing the application of geological principles in interpreting data. Sedimentary geology, paleontology, and environmental geology are areas of emphasis within the department.

### **Objectives**

The integrated core course sequence of the geology degree provides students with a general background in geology as preparation for a career or graduate studies in stratigraphy, sedimentology, paleontology, and environmental geology. Fieldwork is emphasized because it provides the link to basic geological data beyond the classroom and laboratory. Throughout the geology curriculum, students are taught to apply the scientific method to resolve geologic problems. Students are encouraged to consider multiple working hypotheses during this process.

### **Learning outcomes**

1. Demonstrate knowledge of the composition and structure of the earth, geological processes, and earth and planetary models.
2. Demonstrate skill in finding reference materials and collecting and presenting field and laboratory data.
3. Demonstrate written, analytical, and oral skills with the integration of technology in communication.
4. Demonstrate ability to analyze and synthesize previous knowledge.
5. Demonstrate a professional aptitude and attitude.
6. Demonstrate critical evaluation skills in relating faith, science, and public interest issues.

### **Admission**

A student pursuing a Bachelor of Science degree in geology will take the first two years of general education and corequisite science courses at any accredited institution; and the last two years of geology curriculum at Loma Linda University. Admission requirements for the B.S. degree in geology are a 2.5 G.P.A. during the first two years of course work, and letters of recommendation from two faculty at the institutions previously attended. The degree requirements below include a list of the courses that should be taken during the first two years as preparation for the geology curriculum at Loma Linda University.

To apply for admission to the program, applicants must log on to the LLU Web site at <llu.edu/central/apply>. It is also recommended that applicants contact the department at <ebs@llu.edu>.

### **Application time**

Applications are accepted at any time. However, it is recommended that applications for Fall Quarter be submitted by March. Financial aid decisions will be made in early April.

### **Scholarships and discounts for earth and biological science undergraduate students**

Tuition rate in Geology or Environmental Sciences programs (B.S.): \$274/unit; 12-18 units—\$3,288 per quarter.

Tuition rate in Geology or Environmental Sciences programs (B.S.): \$274/unit; 12-18 units—\$3,288 per quarter.

## 1. Academic scholarships

### a. Scholarships based on test results

- a. American College Test (ACT) score of 30 or above: \$1,600 (or 16 percent of tuition). For a student who maintains a cumulative G.P.A. of at least 3.5; renewable for successive years.
- b. Scholastic Aptitude Test (SAT)
  - a. National Merit Finalist Scholarship covers 100 percent tuition
  - b. National Merit Semifinalist Scholarship covers 34 percent tuition
  - c. National Merit Commended Scholarship covers 20 percent tuition

Student must maintain a 3.5 cumulative G.P.A. renewable for successive years. If a student qualifies for both an ACT and an SAT scholarship, the scholarship with the highest dollar value will apply.

### b. Renewable G.P.A. scholarships (eligibility based on G.P.A. at the end of previous academic year)

- G.P.A. between 3.75 and 4.00, \$1,480 per year (or 15 percent of tuition)
- G.P.A. between 3.50 and 3.74, \$1,180 per year (or 12 percent of tuition)
- G.P.A. between 3.25 and 3.49, \$900 per year (or 9 percent of tuition)

If a student is eligible for a National Merit Scholarship and/or an ACT scholarship and a G.P.A. scholarship, the scholarship with the highest dollar value will apply.

## 2. Guidelines

- All scholarships or other financial awards cannot exceed costs for tuition and fees.
- If a student qualifies for more than one scholarship or reduced tuition award, the award with the largest dollar value applies.
- Scholarship or tuition reduction will be applied as a credit to the student's tuition account at the rate of one-third of the total per quarter, and is available to full-time students only.
- Loss of scholarship money may result when a student does not maintain the minimum cumulative G.P.A. required by the particular scholarship.
- The last day of final tests for the first quarter that a student is enrolled at LLU is the deadline for verifying with Student Financial Services that the student qualifies for a scholarship for the academic year.
- The scholarships and reduced tuition award listed here apply only to students enrolled in undergraduate programs in the Department of Earth and Biological Sciences.

Note: Determination of the amount of scholarships and awards at Loma Linda University is influenced by FAFSA data. State and federal grants, as well as other grants and subsidies, will be applied before Loma Linda University scholarships and discounts; therefore, some students may be eligible to receive only a portion of their scholarship award.

## Employment

A baccalaureate degree in geology prepares a student to enter graduate programs in geology or paleontology, or for employment in environmental and energy-related industries; or (with the necessary education courses) for teaching in secondary schools. Most employment opportunities in industry, research, or college teaching require a graduate degree.

## Preparation for teaching

In addition to the geology major, a student preparing to teach at the elementary or secondary level will need to complete the requirements for a teaching credential. The student should consult the Geology Program undergraduate director for further information. Education courses will count towards general studies requirement.

## Honors program

Students may apply and be accepted into the geology honors program if they meet the following requirements: a G.P.A. of 3.0 or above, a sponsoring faculty member, and an approved research proposal. Honors students must register for at least 2 units of undergraduate research, conduct original research under a faculty member's direction, submit a written undergraduate thesis, and deliver a public oral presentation.

## Graduate programs

The Department of Earth and Biological Sciences offers a Master of Science degree in geology and a Doctor of Philosophy degree in earth science. This program's emphasis is on: sedimentary geology, paleontology, and environmental geology. A Master of Science degree and a Doctor of Philosophy degree in biology are also available.

## General education requirements

The information below provides a summary of the University's general education requirements for undergraduate students. For a complete description of Loma Linda University's general education requirements and criteria, the student should refer to the Division of General Studies section in this CATALOG.

(to be taken at any college)

### **Domain 1: Religion and Humanities (20 quarter units minimum)**

#### *Humanities (12 quarter units minimum)*

Choose courses from three of the following areas: civilization/history, fine arts (art history and music history), literature, philosophy, and performing/visual arts (not to exceed 4 quarter units).

#### *Religion*

An applicant who has attended an Adventist college or university is required to have taken four quarter units of religion from an Adventist institution for each year of attendance at an Adventist college or university. Up to 8 quarter credits may apply towards the 20 credits needed in Domain 1. If the applicant has not attended an Adventist institution, there are no religion units required. In either case, however, the applicant must have completed 20 quarter/14 semester units in Domain 1: Humanities and Religion.

**Domain 2: Scientific Inquiry and Analysis (40-52 quarter units)**

*Natural Sciences (12 units minimum, extra units count toward Domain 5 and the total general studies requirement)*

- Mathematics, including calculus (8-12 units)
- Statistics (4 units)
- General chemistry with laboratory—one full year, complete sequence
- General physics with laboratory—one full year, complete sequence
- Courses in genetics and ecology, or general biology with laboratory (8 units)

*Social Sciences (12 units minimum)*

- One course dealing with human diversity (e.g., cultural anthropology)
- Choose remaining units from the following areas: geography, economics, political science, psychology, sociology, etc.)

**Domain 3: Communication (9-13 quarter units)**

- English composition (complete sequence)
- Elective areas may include courses in computer information systems, critical thinking, and public speaking.

**Domain 4: Health and Wellness (2-6 quarter units)**

- Two activity courses in physical education
- Personal health or nutrition

**Domain 5: Electives**

Electives from the previous four domains may be selected to complete the general education minimum requirements of 68 quarter units.

**Required units and residence requirement**

Minimum requirements include one year of full-time residence in Loma Linda University, completing 32 of the last 48 units, or a minimum of 45 total units of course work for the degree at Loma Linda University. If the student has attended an institution that does not grant bachelor's degrees, a maximum of 105 quarter units of transfer credit can be transferred from a two-year junior or community college.

Please note: Grades of C- and below are not accepted for credit.

**Seminar attendance requirements**

All students must register for and attend Seminars (GEOL 485) for each quarter of residence at this University.

**Rosario Beach summer courses**

In cooperation with the Walla Walla University Marine Station at Anacortes, Washington, facilities are available for marine courses and research by students of this program.

**Major**

Units

GEOL 204	Physical Geology	4.0
GEOL 316	Mineralogy	4.0
GEOL 317	Igneous and Metamorphic Petrology	4.0
GEOL 416	Sedimentology and Stratigraphy	6.0
GEOL 424	Structural Geology	4.0
GEOL 431	Geochemistry	4.0
GEOL 443	Historical Geology	4.0
GEOL 456	Field Methods of Geologic Mapping	4.0
GEOL 475	Philosophy of Science and Origins	4.0
GEOL 485	Seminar in Geology (1.0)	3.0
Totals		41.0

**Religion**

Choose at least one course from each prefix

Units

RELE 4__	Upper division Ethics	3.0	
RELR 4__	Upper division Relational	3.0	
RELT 406	Adventist Beliefs and Life (2)	One course required	2.0
RELT 423	Loma Linda Perspectives (2)		
RELT 436	Adventist Heritage and Health (2)		
RELT 437	Current Issues in Adventism (2)		
Totals		8.0	

**Geology electives**

Must include one paleontology course

Units

GEOL 325	Rocky Mountain Field Geology (2 to 3)	Choose from this list	20.0
GEOL 326	Geology of Southern California (3 to 4)		
GEOL 426	Invertebrate Paleontology (6)		
GEOL 427	Vertebrate Paleontology (6)		
GEOL 444	Paleobotany (6)		
GEOL 448	Field Seminar in Historical Geology (4)		
GEOL 455	Modern Carbonate Depositional Systems (3)		
GEOL 464	Environmental Geology (3)		
GEOL 465	Hydrogeology (4)		
GEOL 484	Readings in Geology (1 to 4)		
GEOL 486	Research and Experimental Design (4)		
GEOL 487	Field Geology Studies (1 to 6)		
GEOL 488	Topics in Geology (1 to 4)		
GEOL 489	Readings in Paleontology (1 to 4)		
GEOL 495	Special Projects in Geology (1 to 4)		
GEOL 497	Undergraduate Research (1 to 4)		
Totals		20.0	

**General electives**

Any undergraduate courses taught at Loma Linda University or other regionally accredited college to meet the 192-unit total requirement

		Units
___	Elective	—
Totals		—
<b>Overall Totals</b>		<b>192.0</b>

**GEOLOGY—M.S.**

The Department of Earth and Biological Sciences in the School of Science and Technology offers the Master of Science degree in geology. Research and course work emphasize field and laboratory studies in sedimentology, paleontology, paleoenvironmental reconstruction, paleoecology, and taphonomy. Areas of curriculum strengths include sedimentary geology, paleontology, and environmental geology. Research in paleontology may also be pursued through the M.S. and Ph.D. degree curricula in biology, and through the Ph.D. degree curriculum in earth science.

**Program objectives**

The Geology Program focuses on field-oriented geology, particularly sedimentology, stratigraphy, and paleontology. The integrated core course sequence provides students with the tools to conduct research in the subdisciplines of sedimentology, paleontology, or environmental geology. Fieldwork is emphasized because it provides a first-hand experience with geological phenomena that cannot be satisfactorily grasped or understood solely from classroom or laboratory study. Throughout the geology curriculum, students are encouraged to develop an open-minded and investigative approach in the application of the scientific method to the resolution of geologic problems. Consideration of multiple working hypotheses is encouraged.

The Geology Program aims to instill in students the values of honesty, scientific integrity, careful research, and independent critical thinking; provide the tools and intellectual environment in which geologists can attain their highest potential in scholarship and research; and challenge graduate students to consider the relationships among science, faith, and societal responsibility.

**Learning outcomes**

1. Demonstrate advanced breadth and depth of knowledge in earth science.
2. Plan and carry out independent research.
3. Demonstrate written and oral communication skills, and the integration of technology in communication.
4. Demonstrate ability to analyze and synthesize previous knowledge.
5. Demonstrate a professional aptitude and attitude.
6. Demonstrate critical evaluation skills in relation to faith, science, and public interest issues.

**Financial aid**

Research and teaching assistantships are available from the Department of Earth and Biological Sciences on a competitive basis. Further information can be obtained by contacting the department at <ebs@llu.edu>. Qualified students are also encouraged to seek fellowships from federal and private agencies with the help of their advisors.

## Application

Applications are accepted at any time. However, it is recommended that applications for Fall Quarter be submitted by March. Financial aid decisions will be made in early April.

To apply for admission to the program, applicants must log on to the University Web site at <llu.edu/central/apply>. It is also recommended that applicants contact the department at <ebs@llu.edu>.

## Admission

Our admission standards include an undergraduate G.P.A. of at least 3.0. Applicants must also take the general GRE examination and achieve an acceptable score. International students may be required to take the TOEFL examination. Contact the department or search this CATALOG for details. Acceptable undergraduate preparation is a bachelor's degree and must include the following required corequisites (in quarter units):

Biology (zoology, botany, ecology or general biology) (highly recommended, not required)

General chemistry (full year with laboratory)

Physics (full year with laboratory)

Mathematics including calculus

Statistics

Some corequisites may be taken during residence at Loma Linda University, with approval of admission committee.

## Curriculum

**Two-year track**, for students with an undergraduate degree in geology

A minimum of 48 quarter units, including 36 at or above the 500 level, constitutes the curriculum for the Master of Science degree in geology. In addition to the general School of Science and Technology requirements, the following courses are required:

### Cognates

The following courses are usually taken during the undergraduate program. However, they may be completed during the graduate program, since students with a variety of majors (including science and some non-science majors) are encouraged to enter the MS in geology. Courses do not apply toward graduate credit:

		Units
GEOL 204	Physical Geology	4.0
GEOL 316	Mineralogy	4.0
GEOL 317	Igneous and Metamorphic Petrology	4.0
GEOL 416	Sedimentology and Stratigraphy	6.0
GEOL 424	Structural Geology	4.0
Totals		—

### Cognates

The following courses are usually taken during the undergraduate program. However, they may be completed during the graduate program and may apply toward the M.S. degree.

		Units
GEOL 431	Geochemistry	4.0
GEOL 443	Historical Geology	4.0
GEOL 456	Field Methods of Geologic Mapping	4.0
Totals		12.0

<b>Major</b>			Units
GEOL 556	Paleoenvironments		4.0
GEOL 565	Analysis of Sedimentary Rocks		4.0
GEOL 566	Sedimentary Processes		4.0
GEOL 567	Stratigraphy and Basin Analysis		4.0
GEOL 607	Seminar in Geology	each quarter in residence; 1 unit per quarter	—
GEOL 617	Proposal Writing and Grantsmanship		2.0
GEOL 558	Philosophy of Science (4)	One course required: GEOL 558 required except for students who have taken GEOL 475 or equivalent	4.0
GEOL 559	Philosophy of Science and Origins (1)		
BIOL 426	Invertebrate Paleontology (4)	Choose two paleontology courses	8.0
BIOL 427	Vertebrate Paleontology (4)		
BIOL 444	Paleobotany (4)		
GEOL 545	Taphonomy (4)		
<b>Totals</b>			<b>30.0</b>

<b>Religion</b>			Units
REL_ 5__	Graduate-level Religion		3.0
<b>Totals</b>			<b>3.0</b>

<b>Research</b>			Units
GEOL 698	Thesis Research (1 to 8)	4 units minimum; will be graded each quarter and can be repeated for additional credit	4.0
<b>Totals</b>			<b>4.0</b>
<b>Overall Totals</b>			<b>49.0</b>

### Other requirements

The remainder of the student's program will be planned in consultation with the major professor and graduate advisory committee. In addition to course work, students are expected to attend all program seminars while in residence, fulfill research and thesis expectations, and successfully pass a final oral examination.

### Seminar attendance requirements

All graduate students in residence must register for and attend Seminars (GEOL 607) each quarter at this University.

### Registration and tuition after normative time

Students who are past the normative time for completing their degree must register for two units without a tuition waiver each quarter until they complete their degree. After the normative time, students may request a one-year grace period that must be approved by the department faculty.

**Research proposal**

Students are urged to select a research project early in their program, in consultation with a faculty member approved by the department. A written research proposal and an oral defense of the student's proposed research should be completed by the end of the third quarter of study. A comprehensive plan for completion of the degree will be approved at this time.

**Advancement to candidacy**

Students may apply for advancement to candidacy by completing Form A, which requires:

1. completing all deficiencies and prerequisites.
2. selecting a research committee.
3. receiving approval of the written research proposal.
4. passing the oral defense of the research proposal.
5. being recommended by the program faculty (should be completed by the end of the third quarter of study).

**Thesis**

The written thesis must demonstrate the completion of significant, original research and must be written in the format of an appropriate scientific journal.

**Defense of thesis**

An oral presentation and defense of the thesis are required. This includes final oral examination on student's field of study.

**Rosario Beach Summer courses**

In cooperation with the Walla Walla University Marine Station at Anacortes, Washington, facilities are available for marine courses and research by graduate students of this department.

## Gerontology—ST

M.S.

CARRIE ESKAY, Program Director

### FACULTY

A complete list of part-time and voluntary faculty can be viewed on the department's Web site.

The population explosion of older adults has generated increasing interest in the field of gerontology. Gerontology is the multidisciplinary-multidimensional study of aging and aging processes. It combines the study of physical, mental, social, and spiritual changes that affect individuals as they age. Emphasis is placed on the knowledge and skills required for competent practice, with considerable attention given to understanding the social, cultural, and economic factors that affect services for this population.

### MISSION

The mission of the Gerontology Program is to provide graduate level education for future and current professionals in gerontology who are dedicated to enhancing the lives of older adults through advanced interventions at the micro, macro, and mezzo levels of practice.

### PROGRAM OBJECTIVES

- Students will demonstrate the ability to integrate human behavior and developmental theories of aging, incorporating a biopsychosocial-spiritual orientation to geriatric practice.
- Students will demonstrate the ability to use research in evaluating the effectiveness of practice and programs in achieving intended outcomes for older adults.
- Students will demonstrate the ability to integrate into practice an understanding of the life experiences and unique needs of older adults belonging to specific racial, ethnic, socioeconomic groups; of men and women; and of those with different sexual orientations.
- Students will demonstrate knowledge of professional ethics to assist older adults who have diverse cultural, spiritual, and ethnic values and beliefs.
- Students will demonstrate the ability to complete a comprehensive assessment of biopsychosocial-spiritual factors that affect older adults' well-being.
- Students will demonstrate knowledge of the policies that shape and regulate the continuum of care and services available to older adults.
- Students will demonstrate knowledge of the importance of the current issues in gerontology and the importance of the relationship of gerontology to other disciplines and professions, such as social work, psychology, medicine, nursing, and public health.

### GENERAL OVERVIEW

The 48-unit program begins with 26 units of core course work required for all students. Courses during the first year of study are divided into four professional areas: social science theory, religion and ethics, practice, and research methods. At the end of the first year, the student selects a concentration area (policy, planning, and administration; or clinical services) requiring 14 units of concentration-specific course work.

Regardless of the concentration students choose, they are given the option of either a thesis or a nonthesis (professional practicum).

1. Thesis: Students who choose the thesis option complete 6 research-related units and 4 units of selectives.
2. Nonthesis: Students choosing the internship option complete 1 unit of practical orientation, 540 hours of integrated practicum and seminar, and 9 units of didactic selectives.

## CONCENTRATION DESCRIPTION

*Policy, planning, and administration:* Students opting for the policy, planning, and administration concentration gain knowledge and skills in the public administration, planning, and coordination of services for older adults. Students acquire an appreciation for the unique policy and systems structure influencing the delivery of services to older adults. Within this framework, students develop an understanding of the issues and challenges in creating and sustaining responsive systems of care for older adults and their families.

*Clinical services:* Students opting for the clinical services concentration develop knowledge and skills in locating and providing resources, services, and opportunities for older adults and their families; as well as acquiring knowledge that supports enhancing the problem-solving and coping skills of older adults and their caregivers. Students gain an appreciation for the social support factors and community systems that create opportunities or exacerbate problems in daily living. Students develop an understanding of the issues that impact the creation of effective systems of care and responsive social policies.

Both concentrations emphasize a thoughtful reflection about the multidimensional issues in gerontology that will provide students with a deeper understanding of policy, administration, and practice issues affecting the field.

## PREREQUISITE

A balance of course work in three liberal arts areas:

Humanities (e.g., history, philosophy, literature, art, music, etc.)	20.0-24.0
English and Communication Skills (e.g., oral and written communication media, etc.)	9.0-13.0
Natural and Social Sciences (e.g., mathematics, human biology, physiology, psychology, sociology, anthropology, human development, ethnic studies, economics, political science or government, etc.)	24.0-32.0

Students not meeting the minimum number of units in any of the foregoing areas are required to complete additional course work prior to enrolling in the related M.S.W. degree classes.

*Please note:* All prerequisite requirements must be completed before advancement to candidacy (prior to beginning the advanced curriculum).

Unit values represent the quarter system of measurement. Content from multiple courses may be used to meet most requirements.

## ADMISSION REQUIREMENTS

This program follows the admission requirements of the School of Science and Technology, as follows:

1. Applicants must demonstrate satisfactory performance on the Graduate Record Examination (GRE). For admission with regular status, satisfactory performance is defined as a minimum

combined verbal and quantitative score of 1000 and an analytical writing score of 4.0. Students submitting lower scores may be considered for provisional status.

*or*

The applicant must demonstrate satisfactory performance on a critical essay examination (CEE) administered by the Department of Social Work and Social Ecology under the guidance of the School of Science and Technology. For admission with regular status, satisfactory performance for the CEE is defined as a minimum pass rate of 75 percent.

2. Applicants must demonstrate satisfactory adherence with the minimum academic and professional compatibility criteria established by the program, which includes—
  - a. A cumulative grade point average of 3.0 or above (on a 4.0 scale). Special consideration may be given to applicants with grade point averages as low as 2.75 if the last part of their college work shows significant improvement.
  - b. Evidence of professional compatibility, personal qualifications, and motivation to complete a graduate program by obtaining a passing score on the admissions interview with the program's admissions committee.
 

Evaluation criteria for the interview include:

    - verbal communication skills,
    - critical thinking ability,
    - values congruent with the profession of gerontology,
    - appreciation for human diversity,
    - evidence of reflective learning, and
    - comportment.
  
3. Submission of a completed application, including a personal statement, application fee, all college and/or university transcripts, and three letters of recommendation (one from an academic source and one from a work supervisor preferred).

## CURRICULUM

The 48-unit curriculum for the Master of Science degree in gerontology provides the mix of academic, experiential, and research activities essential for M.S. degree students.

Students must maintain a grade point average of 3.0 (or a letter grade of B on a 4.0 scale); and meet the knowledge, skill, and professional performance competencies outlined by the program.

Students must also maintain a B- (2.7) or better in all required (core) courses, and a minimum of C (2.0) in all selective courses. Courses with grades falling below the standards set for required and selective courses must be repeated. Per University policy, a student cannot repeat more than two courses during his/her graduate program. Students are financially responsible for the cost of repeating courses when grades do not meet the minimum standards.

<b>Social science theory</b>		<b>Non-thesis</b>	<b>Thesis</b>
GERO 615	Economics and Management Issues of Older Adult Services	4.0	4.0
GERO 617	Bio-psycho-social-spiritual Theories of Aging	4.0	4.0
Totals		8.0	8.0

<b>Clinical practice</b>		<b>Non-thesis</b>	<b>Thesis</b>
GERO 515	Diversity and Aging	3.0	3.0
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services	3.0	3.0
Totals		6.0	6.0

<b>Religion, philosophy, and ethics</b>		<b>Non-thesis</b>	<b>Thesis</b>
Choose one course			
RELE 524	Bioethics and Society	4.0	4.0
RELR 568	Care of the Dying and Bereaved	4.0	4.0
Totals		4.0	4.0

<b>Social research methods</b>		<b>Non-thesis</b>	<b>Thesis</b>
SOWK 547	Research Methods I	3.0	3.0
SOWK 549	Research Methods II	3.0	3.0
Totals		6.0	6.0

<b>CONCENTRATION - Policy, planning, and administration</b>		<b>Non-thesis</b>	<b>Thesis</b>
Choose one concentration			
SOWK 673	Program Planning and Evaluation	3.0	3.0
SPOL 588	Special Topics in Social Policy and Social Research	3.0	3.0
	Topic: Policy and Administration in Aging Services		
PUAD 678	Public Administration Management (3.0)	8.0	8.0
SOWK 672	Theories of Organizations and Systems (3.0)		
SOWK 676A	Human Resources Planning and Development (3.0)		
SOWK 676B	Human Resources Planning and Development Seminar (3.0)		
Totals		14.0	14.0

<b>CONCENTRATION - Clinical services</b>		<b>Non-thesis</b>	<b>Thesis</b>
Choose one concentration			
SOWK 654A	Therapeutic Interventions with Older Adults I	3.0	3.0
SOWK 654B	Therapeutic Interventions with Older Adults II	3.0	3.0
HPRO 548	Community and Domestic Violence (3.0)	8.0	8.0
MFAM 638	Family Therapy and Chemical Abuse (2.0)		
NUTR 536	Nutrition and Aging (2.0)		
PSYC 685	Drug Addiction and Therapy (2.0)		
PSYC 686	Child, Partner, and Elder Abuse (2.0)		
SOWK 648	Co-occurring Diagnosis: Substance Abuse with Mental Illness (2.0)		
SOWK 659	Interventions with Persons with Severe Mental Illness (2.0)		
Totals			

**General selectives**

Other courses may be approved for elective credits in consultation with the faculty advisor and in accordance with University policies for academic variances

			<b>Non-thesis</b>	<b>Thesis</b>
GERO 599	Directed Study/Special Project (1.0)		9.0-10.0	4.0
HPRO 584	Aging and Health (3.0)			
SOWK 649	Social Work and Health Care (2.0)			
SOWK 681	Health and Mental Health Policy and Services (2.0)			
SOWK 683	Advanced Policy Analysis (3.0)			
SOWK 684	Advanced Policy Projects (2.0)			
Totals			9.0-10.0	4.0

			<b>Non-thesis</b>	<b>Thesis</b>
<b>Other</b>				
GERO 757A	Professional Practicum and Seminar (3.0)	Professional practicum and seminar units are not calculated into degree units. Students pay program fees for professional practicum units instead of tuition. Practicum and seminar hours: 480 + 60.	—	—
GERO 757B	Professional Practicum and Seminar (3.0)			
GERO 757C	Professional Practicum and Seminar (3.0)			
SOWK 578	Field Orientation (1.0)			
SOWK 697	Applied Research (2.0)			4.0
SOWK 698	Thesis			2.0
Totals			—	6.0
<b>Overall Totals</b>			<b>48.0</b>	<b>48.0</b>

## Marital and Family Therapy—ST

M.S.

MARY E. MOLINE, Program Director

### FACULTY

Carmen Arth (Canada)

Winetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Lori Gray (Canada)

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

### DEPARTMENT

The Marital and Family Therapy Program is housed in the Department of Counseling and Family Sciences, along with master's degree curricula in child life, counseling, and family studies; and doctoral degree curricula in family studies and marital and family therapy. The program at Loma Linda University is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

### Mission, Vision, and Values

The program's *mission*: Educating MFT students to provide effective and competent care to diverse families in local, national, and international communities.

The program's *vision*: MFT students will learn how to "make diverse families whole." Families include; single parent, step, foster, intact, and families headed by grandparents from a variety of cultural backgrounds.

The program has adopted the five Loma Linda University *values* as central to its view of education:

*Compassion*—The sympathetic willingness to be engaged with the needs and sufferings of others.

Among the most memorable depictions of compassion in Scripture is the story of the Good Samaritan.

*Integrity*—The quality of living a unified life in which one's convictions are well-considered and match one's actions. Integrity encompasses honesty, authenticity, and trustworthiness.

*Excellence*—The commitment to exceed minimum standards and expectations.

*Freedom*—The competency and privilege to make informed and accountable choices and to respect the freedom of others. God has called us not to slavery but to freedom.

*Justice*—The commitment to equality and to treat others fairly, renouncing all forms of unfair discrimination.

## **MARITAL AND FAMILY THERAPY—M.S.**

The Master of Science degree curriculum in marital and family therapy is designed to give students a broad academic background; as well as professional practice for working with individuals, couples, and families in a variety of settings. These include but are not limited to, medical, legal, educational, mental health, managed care, church setting, and private practice.

### **Accreditation**

The program offered by Loma Linda University is fully accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COMAFTE), the accrediting body for the American Association for Marriage and Family Therapy (AAMFT). The commission functions on a national basis to ensure that academic and clinical training programs adhere to the standards of the profession.

### **Licensure and program accreditation**

Marriage and family therapy is established in California by law as a profession requiring state licensure. Persons who desire to enter the profession must have the academic and clinical preparation and must pass written licensing examinations. The master's degree program at Loma Linda University provides the academic requirements to meet the California licensing standards according to Business and Professions Code 4980.36 and 4980.37 ([www.bbs.ca.gov](http://www.bbs.ca.gov)). Clinical license requirements vary by state and will require additional hours of supervised clinical practice.

### **Conduct or disciplinary actions**

The applicant should view "instruction for completing application for registration as a marriage and family intern" at the Board of Behavioral Science Examiner's Web site for possible issues that may prevent the student from obtaining a marriage and family therapy license in the state of California. One should not apply to the program if s/he has any of the convictions or disciplinary actions cited.

### **Certificate**

The Department of Counseling and Family Sciences offers certificate programs that can be combined with master's or doctoral degrees offered in the department to broaden students' counseling skills and marketability. Students wishing to add specializations in the following areas must formally apply and be accepted into the desired certificate program (s). Prior to application, students are advised to consult the program coordinator.

- Child Life Specialist Certificate
- Clinical Mediation Certificate
- Drug and Alcohol Counseling Certificate
- Family Counseling Certificate
- Family Life Education Certificate
- Medical Family Therapy Certificate
- School Counseling Certificate: California Pupil Personnel Services Credential (PPS)

### **Combined degrees**

The Department offers a combined degree in marital and family therapy with clinical ministry (M.S./M.A.).

## **Clinical training**

In addition to successful completion of 90 quarter units of academic course work, students in the Marital and Family Therapy Program must complete field experience at clinical placement sites. Upon completion of 18 quarter units, the student will be evaluated by all the teaching faculty to determine if s/he can continue the program and/or be permitted to enter the clinical phase of the program. Students have numerous choices of placement sites across southern California in which to gain required clinical experience. These sites include community mental health centers, private and public agencies, school and hospital settings, and the department's counseling and family sciences clinic. Some stipends are available for trainees. The clinical training includes a seven-quarter practicum sequence and supervision of trainees at a clinical site.

Students must take 16 units of practicum. A minimum of 500 direct client contact hours and 100 direct supervision hours are required. Of the direct client contact hours, at least 250 hours must be with couples and families. Of the direct supervision hours, at least 50 hours must be with raw data (video, audio, and live supervision). For every week in which clients are seen, the student must have at least one hour of individual supervision. The ratio of supervision hours to treatment hours must not be less than one hour of supervision to five hours of clinical contact. Students enrolled in the program should consult the clinical training manual regarding clinical training requirements

## **Admission requirements**

Applicants to the M.S. degree program in marital and family therapy at Loma Linda University must meet the School of Science and Technology admission requirements outlined in this CATALOG and give evidence of academic ability, emotional stability, and maturity.

Students wishing to apply for master's degree course work must in this program must complete their baccalaureate course work at a regionally accredited school prior to application and provide applicable transcripts and/or syllabi. In addition to completing the required application forms, students should provide character and academic references.

## **General admission information**

Students are admitted in the Autumn and Winter quarters. With special permission, a student may enter Spring or Summer quarter. Applicants must have a bachelor's degree in any field from a regionally accredited institution. Additional admission requirements include:

- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's course work for at least the final 45 units prior to graduation.
- Health clearance.
- A background check (required before matriculation to the program).
- Official transcripts on file.
- Three letters of recommendation, as specified.
- A personal statement that addresses career objectives, personal interest in marital and family therapy, rationale for choosing to attend Loma Linda University, how life experiences have influenced applicant's choice to enter the field, and additional thoughts the applicant deems important.
- Interview with department faculty as scheduled. On-campus group interviews are scheduled during Winter and Spring quarters; other on-campus and phone interviews are scheduled individually.

- If English is not the student's first language, a minimum score of 213 for the computer test and 550 for the pencil test on the Test of English as a Foreign Language (TOEFL).
- If the student is not a citizen or permanent resident of the U.S., a valid student visa.

### **Degree completion**

The M.S. degree program in marital and family therapy may be completed in either two years of full-time study or three years of part-time study. Students have up to five years to complete the degree. In order to maintain full-time status, students must take a minimum of 8 units during the Fall, Winter, Spring, and Summer quarters. Mostly, first-year students attend classes on Tuesday and Thursday; and second year students attend classes on Monday and Wednesday. Full-time employment is discouraged when a student is enrolled for full-time study. Clinical traineeships are usually on the days students are not in class. In order to participate in June commencement exercises, students must complete all 500 required clinical hours and the 90 units of required courses.

### **Degree requirements**

Requirements for the Master of Science degree in marital and family therapy from Loma Linda University and from Canadian University College include the following:

- Residence of at least two academic years.
- A minimum of 90 quarter units of graduate work, which includes credit received for core courses, electives, and a 3-unit religion course.
- Clinical training in marriage and family counseling. A minimum of 500 direct client contact hours and 100 direct supervision hours are required. Of the direct client contact hours, at least 250 hours must be with couples and families. Of the direct supervision hours, at least 50 hours must be with raw data (video, audio, and live supervision). For every week in which clients are seen, the student must have at least one hour of individual supervision. The ratio of supervision hours to treatment hours must not be less than one hour of supervision to five hours of clinical contact. Students enrolled in the program should consult the clinical training manual regarding clinical training requirements.
- Successful completion of a written comprehensive examination (taken before advancement to candidacy) and an oral examination (taken at the end of the program).
- To be counted toward the graduate degree, foreign language courses must be numbered at 400 and above.

### **Counseling and Family Sciences Clinic**

Loma Linda University Counseling and Family Sciences (CFS) Clinic, formerly known as the Marriage and Family Therapy (MFAM) Clinic, is operated by the Department of Counseling and Family Sciences. The clinic is located on the second floor of the Loma Linda University Behavioral Health Institute (BHI) as one of the participating academic clinics. The BHI is an innovative endeavor undertaken by Loma Linda University to offer community members easy access to all behavioral health disciplines in one location. The second floor is the location for an integrated, interdisciplinary clinic staffed by students and residents from psychiatry, psychology, social work, child life, counseling, and marriage and family therapy.

### **Financial assistance**

Students accepted into the Marital and Family Therapy Program may receive financial assistance through the MFT Stipends Award; merit-based awards, such as teaching fellowships and a variety of

research and student service assistantships; or through need-based financial aid, such as a loan or the University's work-study program. On a limited basis, students receive financial assistance during their clinical traineeship. Students must apply for financial aid by writing to:

Student Financial Aid Office  
Student Services  
Loma Linda University  
Loma Linda, CA 92350  
909/558-4509

### **Stipend award**

The LLU MFT Stipend Program, an educational stipend program, is intended to help support efforts to develop curricula and methods of teaching that appropriately integrate theory and practice; and promote the values of wellness, recovery, and resilience as expressed in the Mental Health Services Act; to help support efforts to increase consumer and family member employment in the public mental health workforce; and to help support efforts to contribute to a diverse, culturally sensitive and competent public mental health workforce.

### **Educational outcomes**

The program's educational outcomes include program outcomes and student learning outcomes. These outcomes are congruent with the University's and program's missions and appropriate to the profession of marriage and family therapy.

#### **1. Program Outcomes**

Program outcomes integrate this University's commitment to diversity and quality training of health care professionals with the need for diverse master's level practitioners in the field of MFT. These outcomes are as follows:

- a. Prepare students to engage in the MFT profession by being eligible for MFT licensure in California, with a 65 percent to 80 percent pass rate for students who sit for the examination; and by being eligible for membership in AAMFT.
- b. Maintain a 75 percent to 90 percent graduation rate.
- c. Provide a learning environment and resources that allow students to collaborate with other health care providers and multiple community services (or contexts).
- d. Graduate a diverse student population who are prepared to practice in the field of marriage and family therapy.

#### **2. Student Learning Outcomes**

LLU emphasizes whole person care. Each of the seven student learning outcomes for the M.S. degree program in MFT supports this mission with a specific emphasis on advancing systems/relational theory and practice in diverse societal contexts. The student will learn to promote the emotional health and well-being of individuals, couples, families, organizations, and communities. Upon completion of the program, the student will have achieved the following learning outcomes, which will be evaluated as follows:

- a. Student will be able to apply a systemic framework to his/her clinical practice as a marital and family therapist.
- b. Student will be able to identify him-/herself as a systemic marital and family therapy trainee.
- c. Student will be familiar with a variety of MFT therapies and demonstrate clinical language and practices that enable him/her to work with diverse populations within a multidisciplinary context.
- d. Student will be able to demonstrate the ability to analyze and present a clinical case using one of the major MFT models.
- e. Student will demonstrate awareness of contextual issues in therapy such as gender, religion/spirituality, sexual orientation, age, and socioeconomic status.
- f. Student will be knowledgeable of the legal and ethical standards relevant to the field of marital and family therapy and apply his/her knowledge to their clinical practice.
- g. Student will be qualified to apply for internship status and subsequent licensure as an MFT professional aligned with practice standards.

**Graduate writing**

Units

STCJ 515	Researching and Writing Graduate Level Papers	2.0
Totals		2.0

**Theoretical foundations**

Units

MFAM 551	Family Therapy: Foundational Theories and Practice	3.0
MFAM 552	Couples Therapy: Theory and Practice	3.0
MFAM 553	Family Systems Theory	3.0
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3.0
Totals		12.0

**Clinical knowledge**

Units

MFAM 515	Crisis Intervention and Client Centered Advocacy	3.0
MFAM 524	Psychopharmacology and Medical Issues	3.0
MFAM 528	Culture, Socioeconomic Status, and Therapy	3.0
MFAM 556	Psychopathology and Diagnostic Procedures	3.0
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process	3.0
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3.0
MFAM 624	Individual and Systems Assessment	3.0
MFAM 638	Family Therapy and Chemical Abuse	3.0
MFAM 644	Child Abuse and Family Violence	3.0
MFAM 674	Human Sexual Behavior	3.0
Totals		30.0

**Individual development and family relations**

Units

COUN 675	Dynamics of Aging	1.0
MFAM 547	Social Ecology of Individual and Family Development	3.0
MFAM 584	Advanced Child and Adolescent Problems	3.0
Totals		7.0

**Professional identity and ethics**

Units

MFAM 535	Case Presentation and Professional Studies	4.0
MFAM 614	Law and Ethics	3.0
Totals		7.0

**Supervised clinical practice**

700-numbered courses do not count toward total units required for the degree

Units

MFAM 536	Case Presentation Seminar and Documentaion	3.0
MFAM 537	Case Presentation Seminar	3.0
MFAM 635	Case Presentation Seminar	2.0
MFAM 636	Case Presentation Seminar	2.0
MFAM 637	Case Presentation Seminar	2.0
MFAM 731	Clinical Training (6.0)	—
MFAM 732	Clinical Training (9.0)	—
Totals		12.0

**Religion**

Units

RELR 564	Religion, Marriage, and the Family	3.0
Totals		3.0

**Group**

Units

MFAM 568	Groups: Process, and Practice	3.0
Totals		3.0

**Research**

Units

MFAM 501	Research Tools and Methodology: Quantitative	3.0
MFAM 502	Research Tools and Methodology: Qualitative	3.0
Totals		6.0

**Electives**

One course in theory required.

Units

COUN 574	Psychological Foundations of Education (4)	Choose 8 units	8.0
COUN 575	Counseling Theory and Applications (3)		
COUN 576	Exceptional and Medically Challenged Children (3)		
COUN 577	Assessment in Counseling (3)		
COUN 578	College and Career Counseling (3)		
COUN 678	Consultation and Program Evaluation (3)		
COUN 680	Field Experience in Counseling (3 to 18)		
FMST 524	Family Resource Management (2)		
MFAM 516	Play Therapy (2)		
MFAM 525	Therapeutic Group (2)		
MFAM 526	Theory and Practice of Group Counseling (3)		
MFAM 527	Training/Supervision Workshop in Group Counseling (3)		
MFAM 538	Theory and Practice of Conflict Resolution (2)		

MFAM 539	Solution-Focused Family Therapy (2)		
MFAM 544	Family and Divorce Mediation (4)		
MFAM 548	Men and Families (2)		
MFAM 549	Christian Counseling and Family Therapy (2)		
MFAM 555	Narrative Family Therapy (2)		
MFAM 557	Object Relations Family Therapy (2)		
MFAM 559	Cognitive-Behavioral Couples Therapy (2)		
MFAM 565	Advanced Bowen Theory and Practice (2)		
MFAM 566	Psychopathology and Diagnostic Procedures: Personality (2)		
MFAM 569	Advanced Group Therapy (2)		
MFAM 585	Internship in Family Mediation (1 to 4)		
MFAM 605	Gestalt Family Therapy (2)		
MFAM 606	Emotionally Focused Couples Therapy (2)		
MFAM 615	Reflective Practice (2)		
MFAM 659	Current Trends (2)		
MFAM 664	Experiential Family Therapy (2)		
MFAM 665	Structural and Multidimensional Family Therapy (2)		
MFAM 670	Seminar in Sex Therapy (2)		
MFAM 675	Clinical Problems in Marriage and Family Therapy (1)		
MFAM 694	Directed Study: Marriage and Family (1)		
MFAM 695	Research Problems: Marriage and Family (1)		
Totals			8.0

**Post-master's courses**

Not applicable to degree program

Units

MFAM 651	AAMFT-Approved Supervisor Training	3.0
MFAM 704	Marital and Family Therapy State Board Written Examination Review	2.0
MFAM 744	Clinical Internship	1.0
Totals		—
<b>Overall Totals</b>		<b>90.0</b>

# Marital and Family Therapy—ST

Ph.D., D.M.F.T.

CARMEN KNUDSON-MARTIN, Ph.D. Program Director

DOUGLAS HUENERGARDT, D.M.F.T. Program Director

## FACULTY

Winetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

A complete list of program instructors can be viewed online at <[llu.edu/science-technology/cfs](http://llu.edu/science-technology/cfs)>.

## DEPARTMENT

The Ph.D. degree in marital and family therapy and the D.M.F.T. (Doctor of Marital and Family Therapy) degree are two of the three doctoral degrees housed in the Department of Counseling and Family Sciences. The department also offers a Ph.D. degree in family studies; along with master's degrees in family therapy, child life, family studies, and counseling.

## Mission statement

The Ph.D. degree curriculum in marital and family therapy and the D.M.F.T. degree curriculum are consistent with Loma Linda University's vision of transforming lives through whole person health care. The mission of these curricula is to bring health, healing, wholeness, and hope to individuals, families, and communities through education, research, clinical training, and community service. The Ph.D. degree curriculum accomplishes this by preparing scientist-practitioners who will advance the body of knowledge through which marital and family therapists promote the health and well-being of individuals, couples, families, and communities. The D.M.F.T. degree curriculum accomplishes this by focusing on developing, evaluating, and administering intervention programs that benefit individuals, couples, families, and communities.

## The marriage and family therapy profession

Marriage and family therapy is a distinct mental health profession based on the premise that relationships are fundamental to the health and well-being of individuals, families, and communities. Marriage and family therapists (MFTs) evaluate and treat mental and emotional disorders and other health and behavioral problems; and address a wide array of relationship issues within the context of families and larger systems. The federal government has designated marital and family therapy a core

mental health profession—along with psychiatry, psychology, social work, and psychiatric nursing. All fifty states also support and regulate the profession by licensing or certifying marriage and family therapists.

### **Accreditation**

Loma Linda University's academic programs are accredited by the Western Association of Schools and Colleges (WASC). The Ph.D. degree in marital and family therapy and the D.M.F.T. degree curricula are accredited by the Commission on Accreditation of Marriage and Family Therapy Education (COAMFTE), the accrediting body associated with the American Association for Marriage and Family Therapy. COAMFTE accreditation means that students meet national standards for marriage and family therapy education. This accreditation facilitates graduates' eligibility to practice in California as well as across the country. Additional information about COAMFTE-accredited programs can be found online at <aamft.org>.

### **Licensure**

Marriage and family therapy is established in California by law as a profession requiring state licensure. Persons who desire to enter the profession must have the proper academic and clinical preparation and must pass two licensing examinations. The Ph.D. degree in marital and family therapy and the D.M.F.T. degree curricula at Loma Linda University are designed to fulfill the academic requirements that meet the California licensing standards according to Business and Professions Code 4980.38 for those students who have not previously met these requirements.

### **Certificates**

The Department of Counseling and Family Sciences offers certificate programs that can be combined with the Ph.D. or D.M.F.T. degrees to broaden a student's marital and family therapy skills and marketability. Students wishing to add specializations in the following areas must formally apply and be accepted into the desired certificate program(s). Prior to application, the student is advised to consult with the coordinator of the certificate program.

- Child Life Specialist Certificate
- Clinical Mediation Certificate
- Drug and Alcohol Counseling Certificate
- Family Counseling Certificate
- Family Life Education Certificate
- Medical Family Therapy Certificate
- School Counseling Certificate: California Pupil Personnel Services Credential (PPS) (open to counseling and MFT students only)

### **Core ideas guiding the marriage and family therapy doctoral programs**

*Relational systems:* People are best understood within the cultural, spiritual, and relational systems in which they are embedded. Change, therefore, occurs in the context of family, community, and interpersonal relationships. This program focuses on both the structured relational patterns of communication and interaction and on the systems of meaning that define and shape these patterns.

*Wholeness:* The program encourages wholeness by attending to the physical, mental, social, and spiritual dimensions of human experience. These dimensions reciprocally interact at every level.

*Social forces:* The program is guided by a belief that social contexts and processes influence meanings, values, and people's understandings of self, family, and others. Particular emphasis is placed on:

- research focusing on social forces relevant to the distinctive multicultural mix of families in the southern California region;
- the interrelationship between faith and family relationships throughout the world, and
- the effects of the changing health care system and of medical technology; as well as
- collaboration among education, family, work, and legal systems.

*Healing power of relationships:* As people become more connected to each other and their communities, the potential for growth and healing are enhanced and the opportunity for making positive contributions maximized. Students are encouraged to develop their therapeutic relationship and community involvement skills such that they can cocreate an environment of safety, respect, compassion, openness, and community participation.

*Diversity:* Congruent with an appreciation of the importance of social forces is an interest in and respect for the diverse experiences and perceptions of human beings. Different social contexts—such as race, ethnicity, religion, gender, and socioeconomic status—result in a wide variety of meanings and behavior patterns in marriages, families, and intimate relationships. The program seeks to create a diverse mix of students and faculty, and to challenge all who are involved to learn from the richness of multiple perspectives.

*Empirical process:* The program encourages clinical work and theory development grounded in an empirical understanding of human experience. Students are offered the opportunity to develop their capacities to utilize inductive and deductive reasoning; as well as objectivity, subjectivity, and intersubjectivity in therapy, program development, and evaluation, and research.

*Education and prevention:* Connections at family, school, and community levels are important components of resilience. The program emphasizes helping individuals and families access their relational competencies as an important part of prevention, as well as the resolution of their current difficulties.

*Spirituality:* This program sees spirituality as central to wholeness and healing. Students are encouraged to integrate their practices of faith with their professional work. The program places strong emphasis on active demonstration of moral and ethical principles as exemplified by, but not limited to, Judeo-Christian teachings.

*Worldwide focus:* The mission of the program reaches beyond the local and national community to the international community. This includes collaboration with people from other nations and cultures to promote mutual understanding, resolve problems, and strengthen families.

## **MARITAL AND FAMILY THERAPY—PH.D.**

The Ph.D. degree in marital and family therapy follows the scientist-practitioner model in which students are expected to develop expertise in both research and clinical practice. The 108-unit curriculum requires a minimum of three-to-four years of full-time study for completion—including two-to-three years of course work, 1000 hours of face-to-face client contact, a dissertation, and supervised professional development experiences. The purpose of the curriculum is to develop family therapy scholars-practitioners who will advance theory, research, clinical practice, and teaching in the field of marital and family therapy. Students will be prepared for academic and clinical training positions in universities and postgraduate institutes. Ph.D. degree students develop expertise in conducting original research from quantitative, qualitative, and mixed method approaches.

### **Interim master's degree**

The Ph.D. degree with interim master's degree requires 175 units. This combined degree program is for selected advanced students whose master's degree is not in marital and family therapy (or equivalent) or for students currently enrolled in COAMFTE-accredited master's programs. A minimum of five years of full-time study is required to complete the program with an interim master's degree.

### **Concentrations**

All Ph.D. degree marriage and family therapy students must complete a 12-unit concentration. The following are pre-approved concentrations:

- Families, systems, and health
- Family studies
- Systems consultation and professional relations
- School consultation

### **Student learning outcomes**

1. Students will develop a professional identity as doctoral level marital and family therapists aligned with national practice standards.
2. Students will become adept in systems/relational practice, demonstrating sophistication as a scientist-practitioner.
3. Students will be able to analyze, synthesize, and critique MFT theory, human development, and family science literatures to advance and integrate research, theory, and practice in the field.
4. Students will demonstrate knowledge and skills as researchers in the field of marital and family therapy.
5. Students will be responsive to the societal, cultural, and spiritual contexts in which health and well-being are embedded.
6. Students will develop an ethical consciousness that guides their practice in aspects of professional work.

### **Admission requirements**

The Ph.D. degree curriculum represents advanced study over and above a standard master's degree curriculum in the field. Admission is based on an integrated evaluation of the following criteria:

1. Five-page personal essay (see application for department guidelines).
2. M.S. degree in marital and family therapy, or equivalent.
3. Grade point average (3.3 minimum.)
4. Structured oral interview with department (one day).
5. Three letters of reference (two academic and one professional).
6. Curriculum vita (preferred but not required).
7. GRE scores (taken within the past five years)
8. Students for whom English is a second language—TOEFL, 550 (pencil test) or 213 (computer score).
9. Official transcripts for all college and graduate course work.
10. Background check prior to matriculation.

The admissions committee uses the above criteria to evaluate applicants on each of the following equally weighted criteria:

1. Academic preparedness
2. Professional preparedness for doctoral study
3. Research potential
4. Ability to work with diversity
5. Clinical skills

### **Corequisite**

Student transcripts will be evaluated on a course-by-course basis for the following areas of corequisite study. A plan of study incorporating these standard master's degree level courses is available for students who have not completed these corequisites:

Theoretical knowledge in family systems/relational therapy	8.0
Clinical knowledge in marital and family therapy	16.0
Individual development and family relations	8.0
Additional study in the three areas above	4.0
Professional issues and ethics in marital and family therapy	4.0
Research	4.0
Additional related study	4.0
<b>TOTAL MINIMUM APPROVED COREQUISITE COURSES</b>	<b>48.0</b>

### **Financial assistance**

Students who are accepted into the Ph.D. degree curriculum in marital and family therapy may apply for a variety of work-study and department-funded research, teaching, and administrative assistantships awarded by the Department of Counseling and Family Sciences. They may also apply for need-based financial aid, such as a loan or other work-study programs on campus. Departmental awards are contingent on the availability of funds. Students accepted into the Ph.D. degree curriculum in marital and family therapy are eligible and encouraged to apply for the AAMFT minority fellowships. See <aamft.org> for information.

Students may apply for financial aid by writing to:

Student Financial Aid Office  
 Student Services  
 Loma Linda University  
 Loma Linda, CA 92350  
 909/558-4509

### **Knowledge and skills promoted**

#### **Theory and practice**

Students study the work of the original thinkers in marital and family therapy, as well as the most recent developments in the field—such as social constructionism and evidence-based practice. They will develop a critical understanding of the theoretical and philosophical foundations of marital and family

therapy; critically examine the interrelationships between sociohistorical factors, family structures and relationships, and clinical approaches; be conversant in the current issues in the field; and contribute to the discourse regarding them. They will use this knowledge to advance the field of family therapy.

### **Personal development**

The program encourages students to develop a clear understanding of themselves, and it invites reflection and consideration of the impact of their personal values, social positions, and contexts on their clinical and scholarly practices. Students are supported in the development of their strengths as they create an epistemological framework and ethical consciousness to guide their research and practice.

### **Practice and supervisory skills**

Students will apply a critical understanding of theory to the practice of marital and family therapy at the family, community, and societal levels—drawing on the core modalities of the field. They will develop sophistication in their personal clinical skills, supervisory skills, and skills for active multisystemic involvement.

### **Research skills**

Students will develop skills and a critical understanding of the process of research and evaluation related to families and marital and family therapy. This includes the ability to apply research findings to clinical practice and to utilize research findings in creative ways for the benefit of the general population. Ph.D. degree students will develop expertise in quantitative, qualitative, and mixed methods research approaches, leading to publication in scholarly journals and presentations at professional conferences.

The list of required courses follows the description of the D.M.F.T curriculum.

## **MARITAL AND FAMILY THERAPY—D.M.F.T.**

The D.M.F.T. degree curriculum adopts the practitioner-administrator-evaluator approach and focuses on applied skill development for use in clinical practice and administrative positions. The 102-unit D.M.F.T. degree curriculum requires a minimum of three-to-four years of full-time study for completion—including two-to-three years of course work, 1000 hours of direct client contact, a doctoral project, and supervised professional development experience. The goal of the curriculum is to prepare students to apply evidence-based standards to the systemic/relational principles of marriage and family therapy as they design, evaluate, and administer programs that impact a clinical population.

### **Interim master's degree**

A student may matriculate into the D.M.F.T. degree curriculum with the goal of earning an interim master's degree. This curriculum requires 169 units. The program is for selected advanced students whose master's degree is not in marital and family therapy (or equivalent) or for students currently enrolled in COAMFTE-accredited master's degree programs. A minimum of five years of full-time study is required to complete the program with an interim master's degree.

### **Concentrations**

All D.M.F.T. degree students must complete a 12-unit concentration. The following are pre-approved concentrations:

- Systems consultation and professional relations
- Family studies

- Families, systems, and health
- School consultation

### **Student learning outcomes**

1. Students will develop a professional identity as doctoral level marital and family therapists aligned with national practice standards.
2. Students will become adept in systems/relational practice, demonstrating sophistication as therapists, program developers, evaluators, and administrators of marital and family therapy services.
3. Students will be able to use marital and family therapy, human development, and family science literatures to design and evaluate programs, clinical protocols, organizational structures, and service delivery processes.
4. To further benefit families and communities, students will demonstrate the ability to use research and evaluation methodologies to improve human service program performance and outcomes.
5. Students will be responsive to the societal, cultural, and spiritual contexts in which health and well-being are embedded.
6. Students will develop an ethical consciousness that guides their practice in all aspects of professional work.

### **Admission requirements**

The Doctor of Marital and Family Therapy degree curriculum represents advanced study over and above a standard master's degree curriculum in the field. Admission is based on an integrated evaluation of the following criteria:

1. Five-page personal essay (see application for department guidelines).
2. M.S. degree in marital and family therapy, or equivalent.
3. Grade point average.
4. Structured oral interview with department (one day).
5. Three letters of reference (two academic and one professional).
6. Curriculum vita.
7. Critical essay examination (administered by the department).
8. Acceptable TOEFL scores, if English is a second language.
9. Official transcripts of all college and graduate study.
10. Background check prior to matriculation.

### **Corequisite**

Students are expected to have basic academic preparation before entering the D.M.F.T. degree curriculum. If a student is deficient in courses, such as those listed below, a plan of study incorporating these courses will be developed to give the student a solid grounding in the foundations of the field. Transcripts will be evaluated to determine readiness or deficiency in previous course work. These courses will be regarded as corequisites in that the student will be able to incorporate them into his/her curriculum.

Theoretical knowledge in family systems/relational therapy	8.0
Clinical knowledge in marital and family therapy	16.0
Individual development and family relations	8.0
Additional study in the three preceding areas	4.0
Professional issues and ethics in marital and family therapy	4.0
Research	4.0
Additional related study	4.0

### **Financial assistance**

Students who are accepted into the Doctor of Marital and Family Therapy degree curriculum may apply for a variety of work-study and departmentally funded assistantships. They may also apply for need-based financial aid, such as loans or other work-study programs on campus. Departmental awards are contingent on the availability of funds. Students accepted into the D.M.F.T. degree curriculum are eligible and encouraged to apply for AAMFT minority fellowships. See <aamft.org> for information.

Students may apply for financial aid by writing to:

Student Financial Aid Office  
 Student Services  
 Loma Linda University  
 Loma Linda, CA 92350  
 909/558-4509

### **Knowledge and skills promoted**

#### **Theory and practice**

Students study the work of the original thinkers in marital and family therapy, as well as the most recent developments in the field—such as social constructionism and evidence-based practice. D.M.F.T. degree students will develop skills in applying marriage and family therapy principles and frameworks to public and private clinical practice settings. They will develop a critical understanding of the theoretical and philosophical foundations of marriage and family therapy, be conversant with the current issues in the field, and use this knowledge to develop programs and services.

#### **Personal development**

The program encourages students to develop a clear understanding of themselves and invites reflection and consideration of the impact of their personal values, social positions, and contexts on their clinical, administrative, and program development practices. Students are supported in the development of their strengths as they create an epistemological framework and ethical consciousness that guide their approach to professional practice in their lives.

#### **Practice and supervisory skills**

Students will apply an in-depth understanding of theory to the practice of marital and family therapy interventions and program activities at the family, community, and societal levels—drawing on the core marriage and family therapy frameworks. They will develop sophistication in clinical, administrative, and supervisory skills necessary for multisystemic engagement.

### Evaluation skills

Students will develop skills and understanding of the process of evaluation research related to marital and family therapy programs and services. This includes the ability to apply research findings to clinical practice and to utilize research findings in creative ways for the benefit of the general population.

D.M.F.T. degree students will focus on evaluation of program performance and outcomes in practice-based settings.

Theory and practice		DMFT	Interim	
			PhD	MS
MFTH 504	Advanced Theory in Marital and Family Therapy		4.0	
MFTH 506	Clinical 1--Cybernetics	3.0	3.0	
MFTH 507	Clinical 2--Meaning	3.0	3.0	
MFTH 508	Clinical 3--Natural Systems	3.0	3.0	
MFTH 509	Clinical 4--Clinical Issues	3.0	3.0	
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	3.0		
MFTH 527	Advanced Legal and Ethical Issues	3.0		
Totals		18.0	16.0	—

Individual development and family relations		DMFT	Interim	
			PhD	MS
MFTH 505	Advanced Family Studies	4.0	4.0	
Totals		4.0	4.0	—

Supervision		DMFT	Interim	
			PhD	MS
MFTH 501	Supervision in Marital and Family Therapy	2.0	2.0	
MFTH 502	Advanced Supervision in Marital and Family Therapy	2.0	2.0	
Totals		4.0	4.0	—

Program development and administration		DMFT	Interim	
			PhD	MS
MFTH 524	Administration in Marital and Family Therapy	3.0		
MFTH 624	Program Development for Families and Communities	3.0		
MFTH 625	Grant Writing	3.0		
MFTH 626	Program Evaluation and Monitoring	3.0		
MFTH 627	Advanced Program Development and Evaluation (2.0)	4.0		
Totals		16.0	—	—

<b>Spirituality</b>			<b>DMFT</b>	<b>PhD</b>	<b>Interim MS</b>
RELE 5__	Graduate-level Ethics (3.0)	Choose one course	3.0	3.0	—
RELE 505	Clinical Ethics (3.0)				
REL_ 5__	Graduate-level Religion	May choose from RELR 535, RELT 615, or RELE 500 level or higher			3.0
RELR 535	Spirituality and Mental Health		3.0	3.0	
RELT 615	Seminar in Philosophy of Religion		3.0	3.0	
Totals			9.0	9.0	3.0

<b>Research</b>			<b>DMFT</b>	<b>PhD</b>	<b>Interim MS</b>
MFTH 601	Statistics I		4.0	4.0	4.0
MFTH 602	Statistics II			4.0	
MFTH 603	Statistics III			4.0	
MFTH 604	Advanced Qualitative Methods		4.0	4.0	4.0
MFTH 605	Advanced Quantitative Methods		4.0	4.0	4.0
MFTH 606	Research in MFT: Overview and Critique		4.0	4.0	4.0
MFTH 607	Computer		1.0	1.0	
MFTH 608	Analysis and Presentation Issues in Research			3.0	
MFTH 668	Qualitative Research Practicum			2.0	
Totals			17.0	30.0	16.0

<b>Dissertation/Doctoral project</b>			<b>DMFT</b>	<b>PhD</b>	<b>Interim MS</b>
MFTH 695	Project Research (1.0-12.0)		12.0		
MFTH 698	Dissertation Research (1.0-10.0)			20.0	
Totals			12.0	20.0	—

<b>Professional development and practice</b>			<b>DMFT</b>	<b>PhD</b>	<b>Interim MS</b>
700-numbered courses do not count in total graduate units required for the degree					
MFTH 634	Practicum in Marital and Family Therapy (2.0)		6.0	6.0	4.0
MFTH 694	Doctoral Seminar (1.0)		1.0	1.0	
MFTH 785	Professional Clinical Training in MFT (1.5-3.0)	1000 hours	—	—	
MFTH 786	Professional Development Proposal (—)		—	—	
MFTH 786A	Professional Development in Marital and Family Therapy (1.5-12.0)	36 non-academic units	—	—	
Totals			7.0	7.0	4.0

<b>Electives</b>			<b>DMFT</b>	<b>PhD</b>	<b>Interim MS</b>
Choose one concentration (see choices below) for a minimum of 12 units					
___ __	Elective	In addition to units required for the concentration	3.0	6.0	
Totals			3.0	6.0	—

**CONCENTRATION - Family Studies**

Choose one concentration. The family studies concentration focuses on the knowledge regarding family and child development that provides the theoretical basis for family interventions and programs. Students also may select from a variety of courses to enhance their skills in family life education and/or therapy.

		DMFT	PhD	Interim MS
FMST 518	Advanced Theories in Child Development	3.0	3.0	
FMST 526	Marriage and the Family	3.0	3.0	
CHLS 507A	Aspects of Illness and Disease (3.0)	Choose 6 units	6.0	6.0
CHLS 507B	Aspects of Illness and Disease (3.0)			
CHLS 508	Grief and Loss (3.0)			
COUN 576	Exceptional and Medically Challenged Children (3.0)			
FMST 524	Family Resource Management (2.0)			
FMST 525	Sociology of the Family (2.0)			
FMST 528	Parenting (2.0)			
FMST 529	Family Life Education (3.0)			
MFAM 548	Men and Families (2.0)			
MFTH 514	Child and Family Therapy (2.0)			
MFTH 515	Couple and Sex Therapy (3.0) (2.0) (-)			
MFTH 516	Divorce and Remarriage (2.0)			
MFTH 519	Teaching in Higher Education (2.0)			
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing (3.0)			
MFTH 544	Health and Illness in Families (3.0)			
Totals				

**CONCENTRATION - Family, Systems, and Health**

Choose one concentration. This concentration prepares marital and family therapists to work with issues related to health and illness in medical settings and/or in collaboration with other health care professionals. The concentration includes opportunities to work in the primary care LLU clinics to get life experience with patients, doctors, and other health care professionals (Family Medicine and SACH); as well as the opportunity to work with some specific health-related research projects.

		DMFT	PhD	Interim MS
MFTH 534	Family Therapy and Medicine	3.0	3.0	
MFTH 544	Health and Illness in Families	3.0	3.0	
MFTH 564	Social Context of Health	3.0	3.0	
MFTH 637	Special Projects in Health and Illness in Families	3.0	3.0	
Totals		12.0	12.0	—

**CONCENTRATION - School Consultation**

Choose one concentration. The school consultation concentration broadens the systematic work of professionals in marital and family therapy or family studies to include more knowledgeable consultation with school administrators, teachers, counselors, and psychologists regarding the well-being of children, adolescents, and college or university students in educational environments. Doctoral students may select 12 units of study for this concentration from the list of courses below.

			DMFT	PhD	Interim MS
COUN 574	Psychological Foundations of Education (4.0)	Choose 12 units	12.0	12.0	—
COUN 576	Exceptional and Medically Challenged Children (3.0)				
COUN 577	Assessment in Counseling (3.0)				
COUN 578	College and Career Counseling (3.0)				
COUN 678	Consultation and Program Evaluation (3.0)				
COUN 679	Professional School Counseling (3.0)				
Totals			12.0	12.0	—

**CONCENTRATION - Systems Consultation and Professional Relations**

Choose one concentration

			DMFT	PhD	Interim MS
MFTH 528	Organizations: Structure, Process, and Behavior		3.0	3.0	
MFTH 555	Organizational Development and Change		3.0	3.0	
MFTH 556	Management Consulting and Professional Relations		3.0	3.0	
MFTH 557	Organizational Assessment		3.0	3.0	
Totals			12.0	12.0	—

**Additional required courses to earn interim master's degree**

For students who already hold a master's degree in another field or are currently enrolled in a COAMFTE accredited master's degree in family therapy

			DMFT	PhD	Interim MS
MFAM 674	Human Sexual Behavior (3.0)	Choose one course (required for MFT licensure in California)	—	—	3.0
MFTH 515	Couple and Sex Therapy (3.0)				
COUN 675	Dynamics of Aging				1.0
MFAM 515	Crisis Intervention and Client Centered Advocacy				3.0
MFAM 524	Psychopharmacology and Medical Issues				3.0
MFAM 528	Culture, Socioeconomic Status, and Therapy				3.0
MFAM 535	Case Presentation and Professional Studies				4.0
MFAM 536	Case Presentation Seminar and Documentaion				3.0
MFAM 537	Case Presentation Seminar				3.0
MFAM 547	Social Ecology of Individual and Family Development				3.0
MFAM 551	Family Therapy: Foundational Theories and Practice				3.0
MFAM 552	Couples Therapy: Theory and Practice				3.0
MFAM 553	Family Systems Theory				3.0
MFAM 556	Psychopathology and Diagnostic Procedures				3.0
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice				3.0
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process				3.0

MFAM 568	Groups: Process, and Practice			3.0
MFAM 584	Advanced Child and Adolescent Problems			3.0
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race			3.0
MFAM 614	Law and Ethics			3.0
MFAM 624	Individual and Systems Assessment			3.0
MFAM 635	Case Presentation Seminar			2.0
MFAM 638	Family Therapy and Chemical Abuse			3.0
MFAM 644	Child Abuse and Family Violence			3.0
Totals		—	—	67.0

#### Additional required courses for MFT licensure in California

For doctoral students who have not previously met academic requirements for MFT licensure.

Units are in addition to overall total required for the degree.

			DMFT	PhD	Interim MS
MFAM 614	Law and Ethics (3.0)	Choose one course	—	3.0	—
MFTH 527	Advanced Legal and Ethical Issues (3.0)				
MFAM 674	Human Sexual Behavior (3.0)	Choose one course	3.0	3.0	—
MFTH 515	Couple and Sex Therapy (3.0)				
COUN 675	Dynamics of Aging		1.0	1.0	
FMST 518	Advanced Theories in Child Development		3.0	3.0	
MFAM 515	Crisis Intervention and Client Centered Advocacy		3.0	3.0	
MFAM 524	Psychopharmacology and Medical Issues		3.0	3.0	
MFAM 536	Case Presentation Seminar and Documentaion		3.0	3.0	
MFAM 537	Case Presentation Seminar		3.0	3.0	
MFAM 547	Social Ecology of Individual and Family Development		3.0	3.0	
MFAM 556	Psychopathology and Diagnostic Procedures		3.0	3.0	
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process		3.0	3.0	
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race		3.0	3.0	
MFAM 635	Case Presentation Seminar		2.0	2.0	
MFAM 638	Family Therapy and Chemical Abuse		3.0	3.0	
MFAM 644	Child Abuse and Family Violence		3.0	3.0	
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing			3.0	
MFTH 564	Social Context of Health		3.0	3.0	
Totals			42.0	48.0	—
<b>Overall Totals</b>			<b>102.0</b>	<b>108.0</b>	<b>90.0</b>

An interim master's degree will be awarded after students have completed:

- 90 units, including all required master's level units,
- 30 doctoral level units,
- An objective comprehensive examination, and
- 500 hours of direct client contact under an AAMFT-approved supervisor.

All doctoral requirements remain the same.

## Natural Sciences—ST

M.S.

LEONARD R. BRAND, Ph.D., Program Director

### FACULTY

#### *PRIMARY APPOINTMENTS*

Leonard R. Brand  
H. Paul Buchheim  
Benjamin L. Clausen  
Stephen G. Dunbar  
Raul Esperante  
William K. Hayes  
Ronald Nalin  
Kevin E. Nick  
Timothy Standish

#### *SECONDARY APPOINTMENTS*

Ronald L. Carter  
Samuel Soret

The Natural Sciences Program leads to the Master of Science degree. Course work is selected from the allied fields of biology, paleontology, geology, earth systems science, and geographic information systems. Areas of curriculum strength include ecology, genetics, systematics, sedimentary geology, paleontology, environmental geology, earth systems science, and GIS.

### OBJECTIVES

Students completing the Master of Science degree in natural sciences will be:

1. Fluent in the fundamental concepts of biology, geology, GIS, and earth systems science.
2. Qualified to seek endorsement for subject teaching in secondary education and will be competent in either biological science or geoscience.
3. Effective in written and oral communication.
4. Familiar with the scientific method, hypothesis testing, and deductive reasoning.
5. Familiar with key issues related to the integration of faith and science.
6. Qualified to seek employment in K-12 teaching or civil or public service, or will be satisfied that the degree met other personal or professional development objectives.

### PROGRAM FEATURES

The Natural Sciences Program emphasizes ecology-oriented areas of biology and field-oriented geology—particularly sedimentology, stratigraphy, and paleontology. Fieldwork is emphasized because it provides a first-hand experience with biological and geological phenomena that cannot be satisfactorily grasped or understood solely from classroom or laboratory study. Throughout the natural sciences curriculum, students are encouraged to develop an open-minded and investigative approach in the

application of the scientific method to the resolution of biological and geologic problems. Consideration of multiple working hypotheses is encouraged. The goal is to prepare students for effective careers in teaching or government.

## LEARNING OUTCOMES

1. Demonstrate breadth of knowledge in natural sciences.
2. Demonstrate written and oral communication skills and integrate technology in communication.
3. Demonstrate ability to analyze and synthesize previous knowledge.
4. Demonstrate a professional aptitude and attitude.
5. Demonstrate critical evaluation skills in relating faith and science with public interest issues.

## ADMISSION

Applicants must meet the general School of Science and Technology admission requirements. Acceptable undergraduate preparation includes a bachelor's degree in biology, geology, chemistry, physics, or other degree with typical biology and geology prerequisites. In addition, it must include two quarters of college mathematics (calculus recommended); one-year courses in biology, chemistry, and physics; and courses in general ecology and physical geology. Some of these courses may be taken during residence at this University, with approval of the admissions committee.

An undergraduate G.P.A. of at least 2.75 is expected. Applicants must take the general GRE examination and achieve an acceptable score (the subject GRE is not required). International students may be required to take the TOEFL examination. Applicants should contact this department or search this CATALOG for details.

## APPLICATION

Applications are accepted at any time. However, it is recommended that applications for the Fall Quarter be submitted by March. To apply for admission to the program, applicants must log onto the University Web site at <llu.edu/central/apply>. It is also recommended that applicants contact the department at <ebs@llu.edu>.

## CURRICULUM

A minimum of 50 quarter units, including 34 at or above the 500 level, constitutes the curriculum for the Master of Science degree program in natural sciences. In addition to the general requirements of the School of Science and Technology, the following courses are required. Undergraduate courses must be at the 400 level:

Major			Units
GEOL 416	Sedimentology and Stratigraphy		6.0
BIOL 558	Philosophy of Science (4)	Choose one course	4.0
GEOL 558	Philosophy of Science (4)		
BIOL 607	Seminar in Biology (1)	Choose one course	3.0
GEOL 607	Seminar in Geology (1)		
BIOL 616	Research and Experimental Design (2)	Choose one course	2.0
GEOL 616	Research and Experimental Design (2)		

BIOL 426	Invertebrate Paleontology (4)	Choose one geology or paleontology course	3.0-4.0
BIOL 427	Vertebrate Paleontology (4)		
BIOL 444	Paleobotany (4)		
GEOL 545	Taphonomy (3)		
BIOL 505	Marine Biology (4)	Choose one ecology or conservation course	3.0-4.0
BIOL 515	Biogeography (3)		
BIOL 539	Behavioral Ecology (4)		
BIOL 546	Techniques in Vertebrate Ecology (3)		
BIOL 549	Biodiversity and Conservation (3)		
Totals			21.0-23.0

<b>Religion</b>		Units
REL_ 5__	Graduate-level Religion	3.0
Totals		3.0

<b>Electives</b>		Units
____	Elective Selected in consultation with the student's faculty advisor	26.0-28.0
Totals		26.0-28.0
<b>Overall Totals</b>		<b>50.0</b>

## PROJECT

As part of the core curriculum, the student will complete a project, in consultation with the advisor, involving 4 units of registration in research or special projects.

## OTHER COURSES

Courses beyond the core will be selected in consultation with the student's faculty advisor.

## SEMINAR ATTENDANCE REQUIREMENTS

All graduate students in residence must register for and attend Seminars (BIOL or GEOL 607) each quarter at Loma Linda University.

## FINAL EXAMINATIONS

Students are expected to pass a written comprehensive examination during their penultimate quarter in residence.

## ADVANCEMENT TO CANDIDACY

Students may apply for advancement to candidacy by completing Form A, which requires:

- Completing all deficiencies and corequisites.
- Completing an approved written project proposal.
- Passing the written comprehensive examination.
- Being recommended by the program faculty (should be completed by the end of the third quarter of study).

**ROSARIO BEACH SUMMER COURSES**

In cooperation with the Walla Walla University Marine Station at Anacortes, Washington, facilities are available for marine courses and research by graduate students of Loma Linda University School of Science and Technology's Department of Earth and Biological Sciences.

## Program Evaluation and Research—ST

Certificate (postbaccalaureate)

BEVERLY J. BUCKLES, Program Director

### FACULTY

Beverly J. Buckles  
 Kimberly Freeman  
 Sigrid James  
 Dianna Simon  
 Ignatius Yacoub

### ADJUNCT FACULTY

Emily Ascencio  
 Siddharth Swaminathan

The graduate-level certificate in program evaluation and research is designed for the working professional who needs research skills to conduct program evaluation and outcome assessments. Students who complete this program will develop competencies in design and implementation of program evaluations in health care, human services, criminal justice, and economic development. The certificate may be combined with other graduate degrees offered by Loma Linda University or may be taken on its own by nondegree-seeking students. Students in the evaluation research certificate program are expected to have completed some undergraduate work in statistics and social research design. Students lacking appropriate preparation may be required to take necessary courses prior to admission to the program.

Students interested in applying for admission to the graduate certificate in program evaluation and research should contact the Department of Social Work and Social Ecology in the School of Science and Technology.

Required		Units
PSYC 501	Advanced Statistics I	4.0
PSYC 502	Advanced Statistics II	4.0
PSYC 503	Advanced Multivariate Statistics	4.0
SPOL 654	Research Methods I	4.0
SPOL 655	Research Methods II	4.0
Totals		20.0

Theory elective		Units
SPOL 614	Social Science Concepts II (4)	Choose one course 4.0
SPOL 615	Economic Theory and Social Policy (4)	
SPOL 624	Nature/Society Thought and Social Policy (4)	
Totals		4.0

<b>Research elective</b>			Units
SPOL 664	Applied Research for Social Policy (2)	Choose one course	2.0-4.0
SPOL 665	Information Technologies and Decision Science (4)		
Totals			2.0-4.0
<b>Religion</b>			Units
RELE 5__	Graduate-level Ethics (3)	Choose one course	3.0
RELR 528	Christian Citizenship and Leadership (3)		
Totals			3.0
<b>Overall Totals</b>			<b>29.0-31.0</b>

### **ADDITIONAL REQUIREMENTS**

Students should serve as project directors or codirectors of a selected program evaluation research project for a minimum of one term; and submit an approved written report of the project.

G.P.A. of 3.0 or higher in graduate study.

## Psychology – ST

Psy.D., Ph.D.

LOUIS JENKINS, Chair

ADAM ARECHIGA, Director of Psy.D. Clinical Training

DAVID VERMEERSCH, Director of Ph.D. Clinical Training

### FACULTY

Adam Arechiga

Hector Betancourt

Kendal C. Boyd

Paul Haerich

Richard Hartman

Sylvia Herbozo

Louis Jenkins

Kelly R. Morton

Jason Owen

Susan Ropacki

David A. Vermeersch

### LLU ASSOCIATE FACULTY

Jerry W. Lee

Helen Marshak

### MISSION STATEMENT

The mission of Loma Linda University is "to make man whole." The mission, in concert with the University's values of compassion, integrity, excellence, freedom, justice, purity, and humility, provide the context within which the psychology curricula are conducted.

The School of Science and Technology's Department of Psychology offers a combination of innovative training opportunities in clinical psychology. The Doctor of Psychology (Psy.D.) and the Doctor of Philosophy (Ph.D.) degrees in clinical psychology are offered and are APA accredited. A combined degrees program—Psy.D./Dr.P.H.—is offered for programs within the school. Other combined degrees programs—Ph.D./M.A. and Psy.D./M.A. in biomedical and clinical ethics—are offered in coordination with the School of Religion.

The Ph.D. degree in clinical psychology has been informed by the traditional scientist-practitioner model, which emphasizes training in research and clinical practice. The Psy.D. degree, influenced by the practitioner-scholar model, emphasizes training in clinical practice based on the understanding and application of scientific psychological principles and research. The Psy.D./Dr.P.H. combined degrees program combines training in psychology and health sciences to prepare individuals who will be qualified in the application of psychology to health promotion, preventive medicine, and health care; as well as for clinical practice and research.

The specific objective of the APA-accredited Ph.D. degree program in clinical psychology is to train its students to be scientist-practitioners—which, according to the Loma Linda University Ph.D. clinical model, means that they will be given

- a solid academic foundation (minimum accepted grade is B or Satisfactory (S)),
- high-level training in the empirical methods of science so that they are capable of conducting independent and original research,
- the skills to be highly competent clinicians for whom research and practice constantly inform each other, and
- preparation for academic careers,

Among the outcomes measures used to determine the clinical Ph.D. degree program's success in achieving the above-mentioned objectives are the following:

1. Academic foundations course evaluations and successful completion of the comprehensive examination.
2. Training in empirical methods of science—master's degree thesis; a doctoral degree dissertation; presentations, publications, and grants; research and teaching assistantships; teaching positions in area colleges/universities; and membership in scientific/professional organizations.
3. Clinical skills—ongoing clinical evaluations, the quality and type of internships obtained, and successful passing of the clinical comprehensive examination and national licensing examination.

The specific objective of the APA-accredited Psy.D. degree program is to train students to be practitioner-scholars, which according to the Loma Linda University model, means that they will be given:

- a solid academic foundation (minimum accepted grade is B or Satisfactory (S)),
- the highest level of clinical skills, and
- the ability to apply research relevant to clinical issues and cases

Among the outcomes measures used to determine the Psy.D. degree program's success in achieving the above-mentioned objectives are the following:

1. Academic foundations course evaluations and the comprehensive examination.
2. Clinical skills, ongoing clinical evaluations, the quality and type of internships obtained, and the clinical proficiency examination.
3. Application of research design and methods appropriate to the doctoral project; involvement in community-based program development, evaluation, and consultation; membership in professional organizations; and passing the national licensing examination.

The Psychology Program emphasizes research and practice based on the scientific principles and methods of psychology and related disciplines. This emphasis takes place within the context of an approach to human health and welfare that is consistent with the institutional motto, "To make man whole." A systematic attempt is made, through the wholeness component of the curriculum, to promote an understanding of human behavior in relation to the psychological, physical, spiritual, and social/cultural aspects of being human. In this way, the Psychology Program provides, in addition to the traditional training, a positive environment for the study of cultural, social, and spiritual issues relevant to psychological research and practice in contemporary American society and around the world.

## GENERAL REQUIREMENTS

### Doctoral degrees

The following general requirements apply to doctoral degrees in the clinical psychology program. Note that the first three sections—foundations, methodology, and wholeness care—are referred to as the core curriculum.

### Comprehensive examination

The comprehensive examination has three parts: Part I. 200-item objective test covering all foundation courses; Part II. written clinical examination; and Part III. a written psychological test report that must be taken after completing the core curriculum and minimum specialty area course work. This examination, which will normally occur after the second year of study, is intended to evaluate the candidate's general knowledge and understanding of the various areas of psychological science, as well as his/her ability to integrate and use such knowledge for developing research and application. The comprehensive examination is taken prior to application for the internship and is intended to demonstrate the student's highest level of competency up to that time. This will include demonstrating skill in:

1. conceptualizing the present problem;
2. obtaining information regarding personal history, interpersonal functioning, and present status;
3. synthesizing psychodiagnostic data;
4. justifying diagnostic impressions;
5. applying relevant research to treatment planning;
6. formulating a comprehensive treatment plan;
7. engaging in effective intervention and evaluating treatment progress and outcome;
8. professional, legal, and ethical psychological science;
9. foundations of psychological science;
10. psychological report writing.

## PSYCHOLOGY—PSY.D.

### Admission

Applicants must meet the requirements of the School of Science and Technology and the Faculty of Graduate Studies: minimum undergraduate G.P.A. of 3.0; GRE with verbal and quantitative scores totaling the 100th percentile, with the lowest score at the 35th percentile; and a minimum writing score of 4.0. These criteria represent the minimum for applicants to be given consideration.

### Doctoral research

A doctoral project is required of all students in the Psy.D. degree program. This project involves research generally of an applied nature, either qualitative or quantitative; and must be developed in consultation with the student's supervisory committee.

### Course requirements

In preparation for doctoral research, students must complete PSYC 504 Research Methods in Clinical Psychology. In addition, students will complete a doctoral project and PSYC 696 Psy.D. Research (proposal preparation through final defense) for a total of 8 units. Completion of the doctoral project will be submission of Form D.

**Area of concentration (12)**

Ph.D. and Psy.D. degree students will complete 12 units in an area other than their major concentration relevant to psychological research and therapy. The area of concentration and the courses to be included must be approved by the department.

Examples of possible areas of minor concentration include, but are not limited to: health psychology (or related areas, such as preventive care or health promotion and education); psychology and religion; social psychology and culture; child clinical psychology; and neuropsychology

**Proposal**

A formal proposal must be submitted to and approved by a faculty supervisory committee.

**Defense**

Upon completion of the doctoral project, a public defense before the supervisory committee is required.

**Advancement to candidacy**

Students may apply for doctoral candidacy upon successful completion of:

- the core curriculum (Parts I, II, III),
- minimum specialty course work,
- the practicum (PSYC 781-787)
- the comprehensive examination; and
- the doctoral project proposal, which is accepted and recommended by the faculty.

**PSYCHOLOGY—PH.D.****Admission**

Applicants must meet the requirements of the School of Science and Technology and the Faculty of Graduate Studies: a minimum undergraduate G.P.A. of 3.0; GRE with verbal and quantitative scores totaling the 100th percentile, with the lowest score at the 35th percentile and a minimum writing score of 4.0. These criteria represent the minimum for applicants to be considered.

**Clinical emphasis**

The course of study for the Doctor of Philosophy degree with a clinical emphasis includes a minimum of 204 units of academic credit. In addition to the general requirements and the clinical curriculum detailed above, the student will complete the requirements that follow.

**Area of concentration (12)**

Ph.D. and Psy.D. degree students will complete 12 units in an area other than their major concentration relevant to psychological research and therapy. The area of concentration and the courses to be included must be approved by the department.

Examples of possible areas of minor concentration include, but are not limited to: health psychology (or related areas, such as preventive care or health promotion and education); psychology and religion; social psychology and culture; child clinical psychology; and neuropsychology.

## Thesis and doctoral dissertation

A doctoral dissertation is required of all students in the Ph.D. degree curriculum in clinical psychology. The study should involve an original research contribution to the field and must be developed in consultation with the student's supervisory committee.

In preparation for the doctoral dissertation, students must complete PSYC 503 Advanced Multivariate Statistics; 13 units of PSYC 595 Directed Research; and a thesis. These units normally will be completed by the beginning of the third year of study. Students will complete a thesis prior to beginning the dissertation. Completion of the thesis will be submission of Form D. The dissertation proposal cannot be defended until Form D is submitted for the thesis.

## Advancement to candidacy

Students may apply for doctoral candidacy upon:

- completion of the core curriculum (Parts I, II, III);
- completion of minimum specialty course work;
- completion of the practicum (PSYC 782-785);
- successful completion of comprehensive examination;
- completion of a thesis and submission of Form D,
- acceptance of the doctoral dissertation proposal; and
- recommendation of the faculty.

## Course requirements

In preparation for the dissertation, candidates must complete at least 30 units of doctoral research, PSYC 697. Students will complete a doctoral dissertation. Completion of the dissertation will be submission of Form D.

## Graduation requirements

- successful completion of all course work;
- successful completion of a thesis and dissertation;
- submission of an article for publication;
- successful completion of a predoctoral examination.

## Defense

Upon completion of the doctoral dissertation, a public defense before the supervisory committee is required.

### Core Curriculum I: Foundations of psychological science

		MA	PsyD	PhD
PSYC 524	History, Systems, and Philosophy of Psychology	2.0	2.0	2.0
PSYC 545	Cognitive Foundations	4.0	4.0	4.0
PSYC 551	Psychobiological Foundations	4.0	4.0	4.0
PSYC 564	Foundations of Social and Cultural Psychology	4.0	4.0	4.0
PSYC 575	Foundations of Human Development	4.0	4.0	4.0
PSYC 591	Colloquia (1.0) <span style="float: right;">One unit each year for three years.</span>	1.0	3.0	3.0
Totals		19.0	21.0	21.0

**Core Curriculum II: Quantitative psychology research methodology**

		MA	PsyD	PhD
PSYC 501	Advanced Statistics I	4.0	4.0	4.0
PSYC 502	Advanced Statistics II	4.0	4.0	4.0
PSYC 503	Advanced Multivariate Statistics	4.0		4.0
PSYC 504	Research Methods for Clinical Psychologists	M.A./PsyD	4.0	4.0
PSYC 505	Research Methods in Psychological Science	M.A./PhD.	4.0	4.0
PSYC 511	Psychometric Foundations	3.0	3.0	3.0
Totals		23.0	15.0	19.0

**Core Curriculum III: Wholeness**

		MA	PsyD	PhD
PSYC 526	Ethics and Legal Issues in Clinical Psychology	3.0	3.0	3.0
PSYC 554	Health Psychology		4.0	4.0
PSYC 567	Human Diversity		3.0	3.0
RELE 5__	Graduate-level Ethics (3.0)	Choose one course from each prefix. Only two courses required for MA degree	6.0	9.0
RELR 5__	Graduate-level Relational (3.0)			
RELT 5__	Graduate-level Theological (3.0)			
Totals		9.0	19.0	19.0

**Clinical psychology: General**

		MA	PsyD	PhD
PSYC 555	Psychopharmacology		2.0	2.0
PSYC 571	Adult Psychopathology	4.0	4.0	4.0
PSYC 681	Clinical Supervision and Consultation		2.0	2.0
PSYC 681L	Clinical Supervision and Consultation Laboratory		1.0	
PSYC 683	Management and Professional Practice		1.0	1.0
Totals		4.0	10.0	9.0

**Psychological assessment**

		MA	PsyD	PhD
PSYC 512	Assessment I		2.0	2.0
PSYC 512L	Assessment I, Practice Laboratory		1.0	1.0
PSYC 513	Assessment II		2.0	2.0
PSYC 513L	Assessment II, Practice Laboratory		1.0	1.0
PSYC 516	Neuropsychological Assessment III		2.0	2.0
PSYC 516L	Neuropsychological Assessment III Lab		1.0	1.0
Totals		—	9.0	9.0

<b>Psychological treatment</b>		<b>MA</b>	<b>PsyD</b>	<b>PhD</b>
PSYC 581	Psychological Treatment I: Behavioral and Cognitive Therapies		2.0	2.0
PSYC 581L	Psychological Treatment I: Behavioral and Cognitive Therapies Practice		1.0	1.0
PSYC 582	Psychological Treatment II: Psychodynamic Therapy		2.0	2.0
PSYC 582L	Psychological Treatment II: Psychodynamic Therapy Practice		1.0	1.0
PSYC 583	Psychological Treatment III: Humanistic/Phenomenological Approaches to Therapy		2.0	2.0
PSYC 583L	Psychological Treatment III: Humanistic/Phenomenological Therapy Practice		1.0	1.0
PSYC 584	Psychological Treatment IV: Conjoint and Group Psychotherapies		2.0	2.0
PSYC 584L	Psychological Treatment IV: Group Psychotherapies Practice		1.0	1.0
PSYC 676	Geropsychology (1.0)	Choose 6 units	—	6.0
PSYC 684	Human Sexual Behavior and Treatment (1.0)			
PSYC 685	Drug Addiction and Therapy (2.0)			
PSYC 686	Child, Partner, and Elder Abuse (2.0)			
Totals		—	18.0	18.0

<b>General electives</b>		<b>MA</b>	<b>PsyD</b>	<b>PhD</b>
PSYC 572	Child Psychopathology		2.0	2.0
PSYC 654	Behavioral Neurology		2.0	2.0
Totals		—	4.0	4.0

**Practicums and internships**

700-numbered courses do not count toward total graduate units required for the degree

		<b>MA</b>	<b>PsyD</b>	<b>PhD</b>
PSYC 721	Practicum Preparation I		3.0	3.0
PSYC 781	Internal Practicum (2.0)		8.0	8.0
PSYC 782	External Practicum I		4.0	4.0
PSYC 783	External Practicum II		4.0	4.0
PSYC 784	External Practicum III		4.0	4.0
PSYC 785	External Practicum IV		4.0	4.0
PSYC 798	Pre-Internship		4.0	
PSYC 799B	Internship (10.0)	10 units per quarter, total 40 units (2000 hours)	40.0	40.0
Totals		—	—	—

<b>Research</b>		<b>MA</b>	<b>PsyD</b>	<b>PhD</b>
PSYC 595	Directed Research			13.0
PSYC 597	Supervised Research (1.0)			8.0
PSYC 696	Psy.D. Doctoral Research		8.0	
PSYC 697	Doctoral Research (1.0-2.0)			30.0
Totals		—	8.0	51.0
<b>Overall Totals</b>		<b>51.0</b>	<b>104.0</b>	<b>150.0</b>

**PSYCHOLOGY—M.A**

A master's degree in psychology is available only to students enrolled in the Psy.D. or Ph.D. degree clinical curriculum, is part of the overall doctoral program, and does not require a thesis. Eligibility for the M.A. degree requires the student to complete 51 units of course work. The thesis and dissertation are requirements for the Ph.D. degree curriculum. The doctoral project is a requirement for the Psy.D. degree curriculum. The Department of Psychology does not admit students to an M.A.-only degree program. The M.A. degree is not formally awarded at commencement, e.g., student does not participate in the graduation exercise.

**Minimum required grade point average**

Students must maintain a minimum grade point average of B (3.0) in all courses required for the degree.

## School Counseling—ST

Certificate (post-master's), PPS credential in school counseling

*Meets requirements for California pupil personnel services (PPS) credential in school counseling (see also M.S. degree in counseling for PPS option)*

CHERYL J. SIMPSON, Program Director

### FACULTY

Winetta Baker

Ian P. Chand

Brian Distelberg

Curtis Fox

Barbara Hernandez

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard

Mary Moline

Cheryl Simpson

Randall Walker

Colwick Wilson

### DEPARTMENT

The School Counseling Program is one of two options in the Department of Counseling and Family Sciences leading to the California pupil personnel services (PPS) in school counseling credential. Credential requirements are embedded in the M.S. degree in counseling outlined in the Loma Linda University CATALOG. The second option for meeting all requirements for the California pupil personnel services (PPS) in school counseling credential is the School Counseling Certificate Program, which is open only to M.S. degree in marital and family therapy students. The PPS in school counseling is accredited by the California Commission on Teacher Credentialing (CTC) within the State Department of Education. Students enrolled in the M.S. degree in Marital and Family Therapy Program may earn this certificate (credential).

### Mission and vision statement

Mission: To facilitate wholeness by promoting health, healing, and hope to individuals, families, and communities through education, research, professional training, community service, and global outreach.

Vision: Transforming relationships.

### PROFESSIONAL SCHOOL COUNSELING

Professional school counseling emerged a century ago as communities of multigenerational families were transformed through war, urbanization, industrialization, immigration, compulsory education, increasing career choices, and other societal changes that brought about the need for mental health services. Providing counseling services through the schools was a logical extension of the family in the process known as "in loco parentis" while students are away from home and in the school's care. Throughout the United States, professional school counseling has continued to grow as an integral part of

the educational system. Its focus is threefold: 1) personal and social development of students, 2) students' academic achievement and success, and 3) students' career interests, exploration, and preparation. In addition to working with students on campus, professional school counselors serve as consultants for school administrators, faculty, staff, parents, community leaders, and other professionals who work with and for students. The role of professional school counselors varies with the district and grade levels ranging from preschool through college and university.

## **DEGREE AND CERTIFICATE REQUIREMENTS**

The certificate in school counseling is designed specifically for students in the M.S. degree in Marital and Family Therapy Program at Loma Linda University who wish to add the California pupil personnel services (PPS) in school counseling credential to their programs. All degree requirements and certificate requirements must be met and the degree awarded prior to recommendation for the PPS credential. Credential requirements are embedded in the degree requirements of the Counseling Program.

## **ACCREDITATION**

Loma Linda University's academic programs are accredited by the Western Association of Schools and Colleges (WASC). The pupil personnel services (PPS) credential curriculum in school counseling is accredited by the California Commission on Teacher Credentialing (CTC). Additional PPS information can be obtained by going to the CTC Web site at <[www.ctc.ca.gov](http://www.ctc.ca.gov)>.

## **CERTIFICATES**

The Department of Counseling and Family Sciences offers certificate programs that can be combined with master's or doctoral degrees offered in the department to broaden a student's counseling skills and marketability. Students wishing to add specializations in the following areas must formally apply and be accepted into the desired certificate program(s). Prior to application, the student is advised to consult the program coordinator.

- Child Life Specialist Certificate
- Clinical Mediation Certificate
- Drug and Alcohol Counseling Certificate
- Family Counseling Certificate
- Family Life Education Certificate
- Medical Family Therapy Certificate
- School Counseling Certificate: California Pupil Personnel Services (PPS) Credential (open only to M.S. degree in counseling and M.S. degree in marital and family therapy curriculum students)

## **PROFESSIONAL EXPERIENCE**

In addition to successful completion of the M.S. degree in marital and family therapy curriculum requirements and the school counseling certificate courses, students must complete supervised field experience in clinical and/or school settings. Each student is required to complete 100 clock hours of University-supervised practicum prior to placement in counseling field experience. Following practicum, students are required to complete 600 clock hours of counseling field experience in a minimum of two different settings, serving at least two different school grade levels. While enrolled in COUN 791-799 Field Experience in Counseling, students meet regularly for University supervision each week in COUN 681 Counseling Practicum and Seminar, as scheduled.

## ADMISSION REQUIREMENTS

Applicants to the School Counseling Certificate Program must meet the School of Science and Technology admission requirements, as outlined in the Loma Linda University CATALOG; and give evidence of academic ability, emotional stability, and personal maturity. Applicants who meet these requirements, as well as the published deadlines for the following terms, may be admitted during Fall, Winter, Spring, or Summer quarters. Additional admission requirements include:

- M.S. degree in marital and family therapy or concurrent enrollment. See program requirements elsewhere in this CATALOG.
- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's course work for at least the final 45 units prior to graduation.
- Health clearance.
- A background check.
- Official transcripts of all college or university credits.
- Three letters of recommendation, as specified (two letters for students already admitted in the MFT program).
- Written personal statement that addresses career objectives, personal interest in the counseling profession, rationale for choosing to attend Loma Linda University, how life experiences have influenced applicant's choice to enter the field, and additional thoughts the applicant deems important.
- Applicants for whom English is not their first language, a minimum score for the Test of English as a Foreign Language (TOEFL) of 213 on the computer administration of the test or a score of 550 for the pencil/paper administration.
- Applicants who are not citizens or permanent residents of the U.S., a valid student visa.
- Interview with department faculty, as scheduled. On-campus group interviews are scheduled for mid-March and mid-May; other on-campus and telephone interviews are scheduled individually.

## DEGREE AND CERTIFICATE REQUIREMENTS

The school counseling certificate is offered through Loma Linda University for the purpose of meeting all requirements for the California pupil personnel services (PPS) in school counseling credential. The credential is awarded by the Commission on Teacher Credentialing after all University certificate/credential/degree requirements are met and the master's degree is awarded. Requirements for the combined school counseling certificate/M.S. degree in marital and family therapy include:

- Residence of at least two academic years, including residence in the M.S. degree in marital and family therapy curriculum.
- Completion of M.S. degree in marital and family therapy curriculum requirements at Loma Linda University.

### School counseling certificate

- Passing score on all sections of the California Basic Education Skills Test (CBEST) prior to University recommendation to the California Commission on Teacher Credentialing (CTC) for the pupil personnel services (PPS) credential in school counseling.
- Counseling courses, as outlined in the curriculum.

- Certificate of clearance prior to field placement.
- Prefield practicum and field experience, as outlined in the curriculum.

### **Additional requirements: School counseling certificate**

Loma Linda University students in the M.S. degree in marital and family therapy curriculum may complete the School Counseling Certificate Program concurrently with their degree curriculum or following graduation. The application process for the certificate is separate, and acceptance is not automatic. Applicants whose master's in marital and family therapy degree was completed at another university must have their transcripts analyzed prior to enrollment in the School Counseling Certificate Program to determine whether there are deficiencies that need to be addressed.

### **FINANCIAL ASSISTANCE**

Students accepted into the Counseling Program may receive financial assistance through merit-based awards, teaching assistantships, research and student service assistantships; or through need-based financial aid, such as a loan or the University's work/study program. Students may apply for financial aid by writing to:

Student Financial Aid Office  
Student Services  
Loma Linda University  
Loma Linda, CA 92350  
909/558-4509

### **PROGRAM LEARNING OUTCOMES**

School Counseling Program students will:

1. Integrate counseling concepts and skills with a personal epistemology.
2. Demonstrate counseling interventions based upon a broad range of theoretical and legal/ethical frameworks through comprehensive written examination.
3. Develop identity as a professional school counselor through membership and participation in professional organizations.
4. Satisfactorily complete 600 clock hours of supervised practicum in counseling (200 of which may be supervised MFT clinical hours).
5. Meet all University qualifications for the California pupil personnel services (PPS) credential in school counseling, which is issued by the California Commission on Teacher Credentialing (CTC)

### **CURRICULUM**

The curriculum for the School Counseling Program combines specialization courses for the California pupil personnel services (PPS) credential in school counseling with the requirements for the M.S. degree in marital and family therapy outlined below.

<b>Required</b>		Units
COUN 574	Psychological Foundations of Education	3.0
COUN 575	Counseling Theory and Applications	3.0
COUN 576	Exceptional and Medically Challenged Children	3.0
COUN 577	Assessment in Counseling	3.0
COUN 579	Career Theories and Applications	4.0
COUN 678	Consultation and Program Evaluation	3.0
COUN 679	Professional School Counseling	3.0
COUN 681	School Counseling Practicum and Seminar	2.0
RELR 564	Religion, Marriage, and the Family	3.0
Totals		27.0

**Field Experience**

700-numbered courses do not count toward minimum units required for the certificate

		Units
COUN 781	School Counseling Field Experience (3)	—
COUN 782	School Counseling Field Experience (3)	—
COUN 783	School Counseling Field Experience (3)	—
COUN 784	School Counseling Field Experience (3)	—
Totals		—
<b>Overall Totals</b>		<b>27.0</b>

# Social Policy and Social Research—ST

Ph.D.

CHRISTIANE SCHUBERT, Ph.D., Program Director

## FACULTY

Beverly J. Buckles  
Kimberly Freeman  
Sigrid James  
Chris Schubert  
Ignatius Yacoub

A complete list of all part-time and voluntary faculty can be viewed on the department Web site.

The mission of the Social Policy and Research Program is to extend the distinctive principles of "whole person care" beyond the individual to include the care of communities and social institutions. The program's emphasis on an integrative approach to an advanced curriculum in social science, social policy, Christian ethics, and social research provides students with the theoretical and methodological knowledge and professional skills needed to conduct innovative and interdisciplinary research. Graduates of the program are prepared for advanced administrative and research roles in national and international health and human services, policy development and analysis, and education. Graduates of the Loma Linda University Social Policy and Social Research Program will demonstrate:

- Ability to integrate advanced concepts from social science theories, social ethics, and philosophy.
- Ability to utilize critical thinking to distinguish between the moral, ethical, and political differences that affect policies and their consequences.
- Understanding of the conceptual and analytical requirements of policy analysis through the integration of behavioral, political, economic, and social frameworks for understanding human conditions.
- Understanding of the process of defining policy problems, establishing criteria for policy choices, mapping alternative strategies, and applying appropriate analytical and research methods to policy questions.
- Ability to independently define research problems and formulate appropriate questions and hypotheses.
- Understanding of the rationale for particular qualitative and quantitative research methods and ability to select appropriate strategies for independent research and/or evaluation.
- Competence in utilizing different methods of collecting, recording, analyzing, and interpreting data.

## ADMISSION REQUIREMENTS

Admission to the program is governed by the policies and procedures established by the School of Science and Technology. Admission requirements include:

1. Master's degree from an accredited institution of higher education. Examples would include such disciplines as social work (M.S.W.), nursing (M.S.), business (M.B.A.), public health (M.P.H.), education (M.Ed.), and theology (M.Div.).
2. Evidence of adequate academic preparation in graduate education. This includes a minimum cumulative G.P.A. of 3.5 (on a 4.0 scale) for graduate/postgraduate work.
3. Strong intellectual abilities, including background in social sciences and statistics.
4. Evidence of research and policy interests that are compatible with the specialized emphases supported by the program faculty.
5. Professional experience and achievement that demonstrate the competence, motivation, organization, and leadership to complete doctoral education in a timely manner.
6. Personal interview.
7. Sample of writing in the form of a published article, academic or professional paper prepared for a research purpose, or an essay prepared for admission to the program.
8. Satisfactory performance on the Graduate Record Examination (GRE).
9. Curriculum vitae or other description of education and employment history.
10. Personal statement.
11. Application fee.
12. Three letters of recommendation (including one from an academic source and one from a work supervisor.)
13. All college and/or university transcripts.

In addition to the above criteria, the application process for the Ph.D. degree in social policy and social research utilizes a pooled application process by which the top candidates meeting the admissions criteria are selected. The number of new candidates admitted each year is also reviewed in light of the total number of students completing the program and the program's ability to support potential candidates in their area of interest.

## PROGRAM OF STUDY

The program is structured around four primary requirements: course work, comprehensive examination, applied research, and the dissertation.

### Social science theory and policy

Social science theory and policy		Units
SPOL 613	Social Science Concepts I	4.0
SPOL 614	Social Science Concepts II	4.0
SPOL 615	Economic Theory and Social Policy	4.0
SPOL 656	Organizational Theory and Policy	4.0
SPOL 658	Methods of Policy Analysis and Research	4.0
Totals		20.0

<b>Religion</b>		Units
RELT 557	Theology of Human Suffering	4.0
RELE 588	Explorers of the Moral Life	4.0
		Required of all Ph.D. degree students
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0
		Totals
		11.0

**Research methods, statistics, and information technology**

Choose one statistical sequence in consultation with advisor

		Units
SPOL 654	Research Methods I	4.0
SPOL 655	Research Methods II	4.0
SPOL 665	Information Technologies and Decision Science	4.0
STAT ____	Statistics	Advanced course in statistics or methods
PSYC 501	Advanced Statistics I (4)	Sequence 1
PSYC 502	Advanced Statistics II (4)	
PSYC 503	Advanced Multivariate Statistics (4)	
MFTH 601	Statistics I (4)	Sequence 2
MFTH 604	Advanced Qualitative Methods (4)	
MFTH 605	Advanced Quantitative Methods (4)	
		Totals
		28.0

**Applied/structured research and specialized electives**

		Units
____	Elective	10.0-16.0
SPOL 671	Applied/Structured Research I	2.0-4.0
SPOL 672	Applied/Structured Research II	2.0-4.0
SPOL 673	Applied/Structured Research III	2.0-4.0
		Totals
		10.0-22.0

**Dissertation research**

		Units
SPOL 681	Dissertation Proposal I	2.0
SPOL 682	Dissertation Proposal II	2.0
SPOL 683	Dissertation Proposal III	2.0
SPOL 697	Research	8.0
SPOL 699	Dissertation (4.0-12.0)	6.0
		Totals
		20.0
		<b>Overall Totals</b>
		<b>105.0</b>

**POLICY AND RESEARCH SPECIALIZATION**

Students admitted to the program have demonstrated evidence of policy and research interests that are compatible with the areas of expertise supported by program faculty. Information regarding faculty areas of expertise is available by contacting the program director. During the first year of study, students further define their interests through advisement. During the second year of study, after passing a comprehensive examination, students are assigned a research mentor who guides them in the development of an individualized program of applied research and policy activities. An applied research product is the result of this year-long activity. This applied activity provides the experience needed for beginning the dissertation process.

During the third year of the program, students are assigned a dissertation committee chair with whom they work closely to develop and defend a dissertation proposal following University guidelines. During the final year of study, students actively engage in dissertation research, culminating in the successful defense of their dissertation.

### **QUALIFYING EXAMINATION**

Students must pass a comprehensive examination. The comprehensive examination is administered at the completion of the core curriculum (typically during the Fall Quarter of the second year of the full-time curriculum).

### **CANDIDACY**

Students must successfully complete:

1. required course work,
2. the comprehensive examination,
3. the applied research requirements; and
4. the defense of the dissertation proposal before advancing to candidacy.

### **DISSERTATION**

The Ph.D. degree candidacy is spent in full-time dissertation research, culminating in the successful defense of the completed dissertation. Dissertation research for Ph.D. degree candidates follows University guidelines. Details regarding these requirements can be obtained from the program coordinator.

### **COMBINED DEGREES**

Students interested in completing a combined degrees curriculum with Social Policy and Social Research and Bioethics or Social Policy and Social Research and Social Work should refer to the Combined Degree Programs section of the CATALOG or contact the Department of Social Work and Social Ecology directly.

# Social Work—ST

M.S.W.

KIMBERLY FREEMAN, Ph.D., Program Director

## FACULTY

Beverly J. Buckles

Carrie Eskay

Kimberly Freeman

G. Victoria Jackson

Sigrid James

Viola Lindsey

Froylana Heredia-Miller

Ignatius I. Yacoub

A complete list of part-time and voluntary faculty can be viewed on the department Web site.

The profession of social work centers on the improvement of the quality of life for people and the enhancement of human potential for full, productive participation in society. With this philosophy at its core, the master's degree offered by the Social Work Program (M.S.W.) in the School of Science and Technology emphasizes an ecological perspective that focuses on the interaction of a person or system in relation to his/her environment. Reflecting this stance is Loma Linda University's motto, "To make man whole"; and its heritage as an international leader in the delivery of services in health care and related facilities. It is the combination of these influences that has guided the development of the foundation curriculum, professional concentrations, and selection of practicum sites for the Social Work Program.

## MISSION

The mission of the Social Work program at Loma Linda University is to provide graduate-level education that prepares competent, ethical, and compassionate social work professionals who possess the knowledge, values, attitudes, and skills necessary for a life dedicated to whole person care in advanced practice and to leadership in behavioral health institutions and agencies.

## GOALS

The goals of the Social Work Program (M.S.W. degree) are to:

- Provide a graduate curriculum that infuses the knowledge, ethics, values, and skills expected of professional social work practitioners.
- Provide a graduate curriculum that prepares students for global practice; and that develops competency in and respect for all aspects of human diversity, populations at risk, and the promotion of social and economic justice.
- Integrate throughout the graduate curriculum the research competencies that promote knowledge development and that equip students for advanced professional practice.
- Provide a graduate curriculum that develops social work leaders in both clinical and policy/planning/administration practice for work in behavioral health institutions and agencies.

- Provide curricular and cocurricular experiences that utilize strong linkages with behavioral health institutions, agencies, and the broader community for the purpose of transitioning students into professional roles, advanced practice, and lifelong learning.

## OBJECTIVES

The foundation and advanced program objectives for the M.S.W. degree are listed below. Overarching program objectives that apply to both the foundation and advanced curriculum are indicated with an asterisk (\*).

### Foundation program objectives

Program objectives related to goal 1 prepare M.S.W. degree graduates with the knowledge, ethics, values, and skills expected of professional social work practitioners. Graduates of the program will demonstrate the ability to:

- \*1.1. Apply critical thinking skills within the context of professional social work practice.
- \*1.2. Understand the value base of the profession and its ethical standards and principles, and practice accordingly.
- 1.3. Understand and interpret the history of the social work profession and its contemporary structures and issues.
- 1.4. Apply the knowledge and skills of a generalist social work perspective to practice with systems of all sizes.
- 1.5. Use theoretical frameworks supported by empirical evidence to understand individual development and behavior across the life span; and the interactions among individuals and between individuals and families, groups, organizations, and communities.
- 1.6. Analyze and evaluate social policies designed to resolve or prevent social and human problems, and formulate recommendations to improve social policies and service delivery systems.
- 1.7. Use effective communication skills differentially across client populations, with colleagues, and/or within communities.
- \*1.8. Use supervision and consultation appropriate to social work practice.
- 1.9. Identify organizational structures and service delivery systems, as well as the mechanisms required for organizational or systems change.

Program objectives related to goal 2 prepare M.S.W. degree graduates for global practice; and develop competency in and respect for all aspects of human diversity, for populations at risk, and for the promotion of social and economic justice. Graduates of the program will demonstrate the ability to:

- \*2.1. Understand the theories, forms, and mechanisms of oppression and discrimination; and apply strategies of advocacy and social change that advance social and economic justice.
- \*2.2. Practice without discrimination and with respect, knowledge, and skills related to clients—age, physical and mental ability, gender, transgender, sexual orientation, color, culture, race, ethnicity, national origin, religion, and spirituality.

Program objectives related to goal 3 prepare M.S.W. degree graduates to integrate research competencies that equip them for advanced professional practice. Graduates of the program will demonstrate the ability to:

- \*3.1. Evaluate research studies, apply research findings to practice, and evaluate their own practice interventions.

### **Advanced program objectives**

Program objectives related to goal 4 prepare M.S.W. degree graduates to be social work leaders in both clinical and policy/planning/administration practice for work in behavioral health institutions and agencies.

Specific to the clinical practice concentration, graduates of the Social Work Program will demonstrate the ability to:

- 4.1. Independently assess, diagnose, and treat clients—emphasizing evidence-based practices that reflect advanced social work practice in varying roles, agencies, and institutions.
- 4.2. Engage in self-critical analysis for the purpose of integrating therapeutic use of self with diverse client populations.

Specific to the policy, planning, and administration concentration, graduates of the Social Work Program will demonstrate:

- 4.3. Understanding of both the conceptual and analytical requirements of policy analysis used in considering human needs and applying policy choices that promote policy solutions.
- 4.4. Knowledge, values, and skills required of social work administrators—including the design, planning, implementation, and monitoring of effective service delivery systems in behavioral health institutions and agencies.

Program objectives related to goal 5 prepare M.S.W. degree graduates to use curricular and cocurricular experiences for the purpose of transitioning into professional roles, advanced practice, and lifelong learning. Graduates of the program will demonstrate the ability to:

- 5.1. Engage in cooperative and collaborative intradisciplinary and interdisciplinary practice.
- 5.2. Understand and prepare for leadership roles in the future.

### **ACCREDITATION**

The Social Work Program (M.S.W. degree) is accredited by the Council on Social Work Education to provide graduate-level social work education.

## PREREQUISITE

A balance of course work in three liberal arts areas:

Humanities (e.g., history, philosophy, literature, art, music, etc.)	20.0-24.0
English and Communication Skills (e.g., oral and written communication media, etc.)	9.0-13.0
Natural and Social Sciences (e.g., mathematics, human biology, physiology, psychology, sociology, anthropology, human development, ethnic studies, economics, political science or government, etc.)	24.0-32.0

Students not meeting the minimum number of units in any of the foregoing areas are required to complete additional course work prior to enrolling in the related M.S.W. degree classes.

Please note: All prerequisite requirements must be completed before advancement to candidacy (prior to beginning the advanced curriculum).

## ADMISSION REQUIREMENTS

Following are the admission requirements for the Social Work Program:

- Applicants must have a bachelor's degree from an accredited university or college (official transcripts are evidence of courses completed). The department assesses the liberal arts preparation of each of its applicants in the balance of course work, in three liberal arts (see Prerequisites).
- Applicants must submit a completed application—including a personal statement, application fee, all college and/or university transcripts, and at least three letters of recommendation (one from an academic source and one from a work supervisor).
- Applicants must meet the minimum academic and professional compatibility criteria established by the program.
- Applicants must have a cumulative grade point average of 3.0 or above (on a 4.0 scale). Special consideration may be given to applicants with grade point averages as low as 2.85 if the last part of their college work shows significant improvement. Applicants whose cumulative grade point average does not meet the minimum requirements stated above may receive further consideration for admission to the Social Work Program by providing a satisfactory GRE score, or two years of related employment and/or volunteer experiences. Work and volunteer experiences must be verified by employer/supervisor statements on official agency stationery. Further consideration will also be given to individuals who provide evidence of additional certifications and/or training that illustrate commitment to a career in social work. Anyone who is admitted to the Social Work Program with a cumulative G.P.A. below 3.0 will be required to participate in individualized academic assessment and a targeted learning assistance program.
- Applicants must show evidence of professional compatibility, personal qualifications, and motivation to complete a graduate program by obtaining a passing score on the admissions interview with the department's admissions committee. Evaluation criteria for the interview include:
  - verbal communication skills,
  - critical thinking ability,
  - values congruent with the social work profession,
  - appreciation of human diversity,

- evidence of reflective learning; and
- comportment.

No academic credit is given for life experience or previous work experience for any part for the Social Work Program.

## **CURRICULUM**

The 78-unit curriculum of the Social Work Program provides the mix of academic, experiential, and research experiences essential for M.S.W. degree students. Students must maintain a program grade point average of 3.0 (or a letter grade of B on a 4.0 scale) and meet the knowledge, skills, and professional performance competencies outlined by the program. The minimum acceptable grade for all courses is a B- (2.7). Courses with grades falling below the standards set for required and selective courses must be repeated. Students are financially responsible for the cost of repeating courses in which grades obtained do not meet the minimum standards.

## **GENERAL OVERVIEW**

The program begins with the professional foundation content (first-year courses) common to all graduate social work education. Courses during the first year of study are divided into five professional areas: human behavior in a cross-cultural environment, social welfare policy and services, practice theory and skills, social research, and field practicum. These five areas are strengthened by the integration of social work values and ethics, as well as knowledge of special populations (i.e., issues of gender, race, class, disability, and oppression). The advanced curriculum of the program is divided into four subdivisions:

1. Conjoining curriculum and processes—further integrating the foundational first year with the program's advanced curriculum;
2. Advanced curriculum nucleus—includes course work common to all second-year students;
3. Core courses of the two concentrations—clinical practice and policy, planning, and administration; and
4. Culminating curriculum and processes—a capstone academic experience that facilitates the final stage of reflection and review in the development of the scholar-practitioner.

Each of these four curricular subdivisions articulates through the progressive presentation and integration of knowledge, practice roles, and intervention modes to develop the depth and breadth of proficiency expected in advanced practice within health and mental health.

## **PROGRAM OPTIONS**

Alternate program options have been designed to address the varying needs of students. As such, the program offers a full-time, two-year option; a three-year, part-time option; and a four-year, part-time option.

## **APPROVAL OF COURSE TRANSFERS AND PRACTICUM ADVANCED STANDING FOR B.S.W. STUDENTS**

Students who have received a B.S.W. degree from a CSWE-accredited program within the past five years are supported in eliminating possible areas of redundancy in their education through (a) eligibility to transfer foundation course work and (b) consideration for practicum advanced standing.

These additional options for B.S.W. degree students recognize the accomplishments in knowledge and skills that individuals receiving a baccalaureate degree from an accredited social work program possess. As such, students are not admitted into the M.S.W. degree program with pre-approval of course transfers or practicum advanced standing. Instead, once students are accepted into either the full-time or one of the part-time options, those students meeting the designated degree requirements may apply for course transfers and evaluation of their practicum advanced standing. Receipt of course transfers and evaluation of practice maturity are treated as separate processes, as described below. Students should contact the department for more information.

## **TRANSFER STUDENTS**

Individuals transferring from other accredited M.S.W. degree programs may transfer units for didactic course work in accordance with University policy and program guidelines. Field practicum experiences are nontransferable.

## **PROFESSIONAL CONCENTRATIONS IN BEHAVIORAL HEALTH**

The Social Work Program offers two concentrations for professional practice, which are the focus of the second-year study: clinical practice; and policy, planning, and administration.

### **Clinical practice concentration**

The clinical practice concentration requires mastery of advanced practice roles, modalities of intervention, and methods used in clinical social work. Study is required regarding the integration of advanced practice theories, diagnostic assessment, problem-solving skills and techniques; as well as the impact of policy upon the availability of treatment, treatment modalities, and expectation of outcomes. Students' experiences and knowledge are expanded through the selection of practicum sites and selectives.

### **Policy, planning, and administration concentration**

The policy, planning, and administration concentration represents a specialized study designed to prepare students for administrative roles in behavioral health organizations and institutions. As such, this concentration focuses on giving students understanding and skills in establishing and maintaining systems of care to assist individuals, families, and groups managing health and illness in context of the life cycle, promoting social change in public systems of care, policy analysis, program planning and implementation, program evaluation, and human resources management. Students' experiences and knowledge are expanded through the selection of practicum sites and selectives.

## **CENTRAL ACADEMIC PROCESSES AND COGNATES**

### **Professional practica**

Professional practica experiences (field practica) are regarded as an integral part of the Social Work Program because these offer students opportunities to integrate and apply theoretical and research knowledge with social work practice and intervention skills in institutional or agency settings. Practica are designed (and selected) to provide maximum learning opportunities under the supervision of a qualified field instructor. As such, experiences are patterned to build upon one another—presenting the increasing challenges present in the continuum of generalist to advanced social work practice. Students complete 1,080 hours of field work in a qualified setting and 120 hours of concurrent integrated seminar for a total of 1,200 hours.

The emphasis of SOWK 757A,B,C Professional Foundation Practicum and Seminar (480 hours of practicum and 60 hours of seminar) is on achieving generalist social work knowledge, values, and skills—including developing rapport with agency personnel and clients, acquiring interviewing skills, and obtaining beginning-level psychosocial assessment and intervention capabilities. The content of the concurrent seminar further supports this perspective as it provides students with opportunities to integrate their practicum experiences with their developing professional identity.

The emphasis of SOWK 787A,B,C Advanced Professional Practicum and Seminar (600 hours of practicum and 60 hours of seminar) reflects students' choice of concentration and provides the depth and breadth of learning opportunities that underpin the acquisition of advanced practice capabilities. More specifically, advanced professional practica experiences are expected to promote increased insight and understanding of agency and/or client systems as these build on the professional foundation skills achieved during the first year of study.

## Research

The program includes completion of course work in applied research. An individually authored thesis option is available for students meeting program criteria. These study options aim to develop knowledge for the advancement of social work practice and provide guided experiences in the conduct of research applicable to a variety of professional and academic settings. Guidelines for these options are provided by the program.

## PROFESSIONAL PROCESSES AND COGNATES

Three academic review processes take place during the first year of the Social Work Program. These are:

1. M.S.W. degree advancement G.P.A.

The M.S.W. degree advancement G.P.A. provides an initial predictor used for gatekeeping. The first 12 units completed toward the M.S.W. degree, including units acquired during nonmatriculation, must be completed with a G.P.A. of 3.0. Students who fail to achieve at this level may be dismissed from school. Students receive orientation to the process and requirements of the M.S.W. degree advancement G.P.A. during the student orientation conducted prior to the Fall Quarter.

2. Qualifying review

When all foundation course work is completed, students are required to pass the program's qualifying review. The intent of this process is to:

- assist faculty and students in assessment of strengths and areas for improvement,
- provide feedback,
- foster an environment of self-evaluation, and
- encourage heightened participation in individualized academic development.

Ultimately, the results of this review help both the student and faculty to develop learning objectives for the concentration year. A specific orientation is held to explain the expectations, format, and scheduling of the qualifying review process.

3. Wholeness portfolio

All students complete a wholeness portfolio during the professional practicum and seminar experience. This review of the student's individualized objectives and professional development

begins during the first year of study and culminates during the second year of study as the student completes the final quarter of SOWK 787A,B,C. This experience emphasizes the student's plans for employment, lifelong learning, and integration of the core values of Loma Linda University; and is seen as a capstone academic experience that facilitates closure and the final stage of reflection and review in the development of the transitioning professional.

## COMBINED DEGREES

Students interested in completing a combined degrees curriculum with the Social Work and Gerontology programs or the Social Work and Criminal Justice programs should contact the Social Work Department directly.

### Required cognates

		Units
RELE 522	Bioethical Issues in Social Work	3.0
STCJ 515	Researching and Writing Graduate Level Papers	2.0
Totals		5.0

### Professional foundation courses

Courses eligible for waiver (unless otherwise noted) by students with a B.S.W. degree accredited by CSWE.

University policies regarding time limits for transfer credits apply.

			Units
SOWK 511	Human Behavior and Cross-cultural Environment I (3)	Sequence I: Human behavior and cross-cultural environment	6.0
SOWK 512	Human Behavior and Cross-cultural Environment II (3)		
SOWK 515	Social Policy I (3)	Sequence II: Social welfare policy and services	6.0
SOWK 615	Social Policy II (3)		
SOWK 547	Research Methods I (3)	Sequence III: Social research	6.0
SOWK 549	Research Methods II (3)		
SOWK 517	Foundation Practice I: Individuals (3)	Sequence IV: Practice	15.0
SOWK 518	Foundation Practice II: Groups (3)		
SOWK 519	Foundation Practice III: Organizations and Communities (3)		
SOWK 520	Foundation Practice IV: Families (3) <i>Not eligible for waiver.</i>		
SOWK 671	Foundation Practice V: Social Work Administration (3)		
SOWK 578	Field Orientation (1) <i>Not eligible for waiver.</i>	Sequence V: Field practicum; units not calculated into degree units	1.0
SOWK 757A	Professional Foundation Practicum and Seminar (3) <i>Hours: 160 + 20 Not eligible for waiver.</i>		

SOWK 757B	Professional Foundation Practicum and Seminar (3) <i>Hours: 160 + 20; Not eligible for waiver.</i>		
SOWK 757C	Professional Foundation Practicum and Seminar (3) <i>Hours: 160 + 20; Not eligible for waiver.</i>		
Totals			34.0

**Conjoining curriculum and processes**

Required of all students

Units

SOWK 613	Human Behavior in a Cross-cultural Environment III		4.0
SOWK 660	Advanced Theory and Practice with Ethnically Diverse Clients		3.0
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services		3.0
Totals			10.0

**ADVANCED CURRICULUM NUCLEUS**

Units

SOWK 695A	Advanced Research Methods (2)	Thesis option is available for students meeting program criteria	6.0
SOWK 695B	Advanced Research Methods (2)		
SOWK 695C	Advanced Research Methods (2)		
SOWK 787A	Advanced Professional Practicum and Seminar (4) <i>Hours: 200+20</i>	Units not calculated into degree units	—
SOWK 787B	Advanced Professional Practicum and Seminar (4) <i>Hours: 200 + 20</i>		
SOWK 787C	Advanced Professional Practicum and Seminar (4) <i>Hours: 200+20</i>		
Totals			6.0

**Concentration**

Take courses in one of the following two concentrations

Units

SOWK 661	Time-Limited Services and Interventions (3)	Clinical practice	12.0
SOWK 663	Advanced Social Work Practice with Individuals (3)		
SOWK 665	Advanced Social Work Practice with Groups (3)		
SOWK 667	Advanced Integrative Practice (3)		
SOWK 672	Theories of Organizations and Systems (3)	Policy, planning, and administration	—
SOWK 673	Program Planning and Evaluation (3)		
SOWK 676A	Human Resources Planning and Development (3)		
SOWK 683	Advanced Policy Analysis (3)		
Totals			12.0

**CULMINATING CURRICULUM AND PROCESSES**

Choose one course

Units

SOWK 675	Supervision	Clinical Concentration	3.0
SOWK 676B	Human Resources Planning and Development Seminar	Policy, Planning & Administration Concentration	3.0
Totals			3.0

**General selectives**

All students take a total of 8 units of selectives, including a 2-unit policy selective and 6 units from either of the following categories: population groups or problem areas. Students receiving specialized grant funding should check with program for additional requirements and/or restrictions on selective choices.

Units

SOWK 680	Children and Families Policies and Services (2)	All students must take one of these courses to meet the policy selective requirement	2.0		
SOWK 681	Health and Mental Health Policy and Services (2)				
GERO 515	Diversity and Aging (3)	Population groups - choose 6 units from this category or from problem areas	6.0		
MFAM 545	Gender Perspectives (2)				
MFAM 638	Family Therapy and Chemical Abuse (2)				
MFAM 644	Child Abuse and Family Violence (3)				
PSYC 686	Child, Partner, and Elder Abuse (2)				
SOWK 650	Children and Adolescents in Trauma (2)				
SOWK 651	Health Care Interventions with High-Risk Families and Communities (2)				
SOWK 653	Interventions with Special-Needs Children (2)				
SOWK 654A	Therapeutic Interventions with Older Adults I (3)				
SOWK 654B	Therapeutic Interventions with Older Adults II (3)				
SOWK 658	Children's Psychotherapy (2)				
CRMJ 518	Legal Discourse (2)			Problem areas - choose 6 units from this group or from population groups	—
CRMJ 519	Moot Court (2)				
CRMJ 520	Restorative Justice (3)				
MFAM 516	Play Therapy (2)				
MFAM 665	Structural and Multidimensional Family Therapy (2)				
PSYC 685	Drug Addiction and Therapy (2)				
SOWK 648	Co-occurring Diagnosis: Substance Abuse with Mental Illness (2)				
SOWK 649	Social Work and Health Care (2)				
SOWK 656	Religion and Spirituality in Direct Practice (2)				
SOWK 659	Interventions with Persons with Severe Mental Illness (2)				
SOWK 677	Advanced Integrative Seminar in Psychotherapy (2)				
SOWK 684	Advanced Policy Projects (2)				
SOWK 685	Understanding Global Cultures (2)				
Totals			8.0		
<b>Overall Totals</b>			<b>78.0</b>		

Please note: Students wishing to take courses that are not included in the above list of approved electives must obtain an academic variance through the department's Academic Standards Committee prior to enrolling in the course.

## **Social Work, Clinical—ST**

Ph.D.

BEVERLY J. BUCKLES, Program Director

### **FACULTY**

See Social Work M.S.W.

The School of Science and Technology's Department of Social Work and Social Ecology is an interdisciplinary academic unit committed to the University's mission of human wholeness and to the belief that one's fullest development is achieved when all aspects of an individual's life are in balance. Both conceptually and pragmatically, the programs in the Department of Social Work and Social Ecology are guided by an overarching ecological (bio-psycho-social-spiritual) perspective that employs scientific methods of problem analysis and program design. A key component in this framework is the importance of considering the relationships among behavioral, sociopolitical, economic, and environmental problems. The result is an interdisciplinary teaching, learning, and practice environment designed to create interventions that will improve the functions of individuals, families, groups, organizations, and communities. As such, priority has been given to creating an academic milieu favorable to educating competent, ethical, and compassionate professionals and scholars who are capable of respecting and addressing the needs of diverse populations.

### **MISSION AND OBJECTIVES**

This doctoral program aims to provide social workers with advanced knowledge to become researchers, educators, and clinicians capable of applying this knowledge to every practice context in professional clinical social work. It purposefully instills a high appreciation for knowledge development and dissemination; and demonstrates respect and appreciation for the needs and issues inherent in human diversity, promotion of social and economic justice, and at-risk clinical populations.

### **LEARNING OBJECTIVES**

1. Students will be able to apply multiple theoretical frameworks to explain intrapersonal and interpersonal factors underpinning the diagnosis and treatment of persons with severe mental illness and/or serious emotional disorders.
2. Students will demonstrate a comprehensive understanding of the assessment process and diagnostic schemata involving intrapersonal and interpersonal factors, cultural diversity, and environmental influences on client systems and treatment.
3. Students will be able to demonstrate the use of theory to develop research questions and hypotheses for empirical testing, and will possess an understanding of the conceptual nature of theory and the ways theory can be applied to the development of knowledge in clinical social work.
4. Students will be able to articulate the implications of empirical research findings within a theoretical framework, as well as the ability to discuss the implications of empirical research findings on theoretical relationships.
5. Students will demonstrate the ability to design and conduct a systematic, empirical, objective, public, and critical investigation of a clinical practice issue or problem.

6. Students will demonstrate a comprehensive understanding of how people learn and be able to translate this understanding into constructing and delivering appropriate didactic, interactive, and experiential teaching strategies used to teach advanced clinical practice and human behavior concepts.
7. Students will demonstrate current knowledge of the context of social work education (knowledge, values, and skills); and be able to articulate this information into an educational program design, curriculum development, and the delineation and assessment of student educational objectives for both undergraduate and graduate social work programs.

## **ADMISSION REQUIREMENTS**

The Clinical Social Work Program is open to students who demonstrate leadership and scholarly potential. Admission to the program is governed by the policies and procedures established by the School of Science and Technology. An admission committee of social work faculty oversees the admission process, reviews applications, and recommends students for admission to the program. Admission requirements to the doctoral program include:

- Master's degree in social work from an accredited institution of higher education.
- A minimum cumulative G.P.A. of 3.0 (4.0 scale) for graduate/postgraduate work.
- Commitment to advancing knowledge and research related to clinical social work.
- Professional experience and achievement that demonstrates competence, organization, leadership, and motivation to complete doctoral education in a timely manner.
- Personal interview; geographical circumstances may determine an individualized process.
- A sample of writing regarding a clinical treatment topic in the form of a published article, academic or professional research paper, or an essay prepared for admission to the program.
- Satisfactory performance on the Graduate Record Examination (GRE) defined as a minimum combined verbal and quantitative score of 1000, and an analytical writing score of 4.0 for admission with regular status. Students with lower scores may be considered for provisional status.
- Curriculum vitae or other description of education, employment history, and experience in clinical practice.
- Prerequisite preparation. If an applicant has not had adequate clinical treatment experience, additional clinical course work of 6-12 units will be required. (Students needing to meet this requirement take CSWK 688 Clinical Treatment Practicum.)

## **TRANSFER CREDITS**

As master's level clinical training is a prerequisite for admission to this program, transfer of previous course work is limited.

## **PROGRAM OF STUDY**

This program is structured around three primary requirements: course work, comprehensive examinations, and dissertation. The Ph.D. degree in clinical social work requires a minimum of 104 units beyond the M.S.W. degree. The curriculum is designed to accommodate the needs of college and university faculty. The program should be completed in three consecutive summers consisting of two six-week sessions. A more traditional curriculum model is also available that allows students to take some

research and ethics courses during the regular academic year. Students can obtain curriculum planning guides for both program options from the program coordinator. (Students should consult the program coordinator regarding curriculum modifications.)

## QUALIFYING EXAMINATION

Students must pass a comprehensive qualifying examination usually taken at the completion of all clinical course work.

## CANDIDACY

Students who successfully complete all course work, pass the qualifying examination, and successfully defend a dissertation proposal apply for Ph.D. degree candidacy. The candidacy period is spent in full-time dissertation research.

## DISSERTATION

The Ph.D. degree candidacy is spent in full-time dissertation research, culminating in the successful defense of the completed dissertation. Dissertation research for Ph.D. degree candidates follows University guidelines. Details regarding these requirements can be obtained from the program coordinator.

### Research methods, statistics

Units

CSWK 671	Research Orientation I	2.0
CSWK 672	Research Orientation II	2.0
CSWK 673	Research Orientation III	2.0
CSWK 681	Research Seminar I	2.0
CSWK 682	Research Seminar II	2.0
CSWK 683	Research Seminar III	2.0
CSWK 697	Research (4.0-8.0)	24.0
CSWK 699	Dissertation	12.0
PSYC 501	Advanced Statistics I	4.0
PSYC 502	Advanced Statistics II	4.0
PSYC 503	Advanced Multivariate Statistics	4.0
SPOL 654	Research Methods I	4.0
SPOL 655	Research Methods II	4.0
Totals		68.0

### Theory

Units

CSWK 676	Advanced Clinical Theory I: Psychoanalytic and Attachment	3.0
CSWK 677	Advanced Clinical Theory II: Ego Psychology, Self Psychology and Object Relations	3.0
Totals		6.0

<b>Clinical social work</b>		Units
CSWK 684	Advanced Developmental Psychopathology I: Children/Adolescents	3.0
CSWK 685	Advanced Developmental Psychopathology II: Adult Lifespan	3.0
CSWK 686	Advanced Clinical Practice: Clinical Assessment, Diagnosis, and Paradigms of Practice	3.0
CSWK 687	Methods of Teaching and Evaluation in Clinical Social Work Education	3.0
Totals		12.0

<b>Philosophy and clinical ethics</b>		Units
RELE 505	Clinical Ethics	4.0
RELR 535	Spirituality and Mental Health	4.0
RELT 5__	Graduate-level Theological	3.0
RELR 568	Care of the Dying and Bereaved (4)	Select one of these two courses
RELR 584	Culture, Psychology, and Religion (4)	
Totals		15.0

<b>Selectives</b>		Units	
AHCJ 556	Administration in Higher Education (3)	6.0	
CSWK 688	Independent Study in Clinical Social Work (1)		
GLBH 519	Principles of Disaster Management I (3)		
GLBH 547	Refugee and Displaced Population Health (3)		
GLBH 550	Women in Development (3)		
MFAM 548	Men and Families (2)		
MFAM 644	Child Abuse and Family Violence (3)		
MFAM 674	Human Sexual Behavior (3)		
PSYC 511	Psychometric Foundations (3)		
PSYC 512	Assessment I (2)		
PSYC 545	Cognitive Foundations (4)		
PSYC 556	Biofeedback (4)		
PSYC 567	Human Diversity (3)		
PSYC 604	Advanced Topics in Multivariate Analyses (2)		
RELR 525	Health Care and the Dynamics of Christian Leadership (3)		
SOWK 648	Co-occurring Diagnosis: Substance Abuse with Mental Illness (2)		
SOWK 677	Advanced Integrative Seminar in Psychotherapy (2)		
STAT 515	Grant- and Contract-Proposal Writing (3)		
Totals			6.0
<b>Overall Totals</b>			<b>107.0</b>

## Faculty of Graduate Studies

Dean's Welcome

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Graduate Degrees Overseen by the Faculty of Graduate Studies

## Dean's Welcome

We are very pleased that you have chosen to continue your education at Loma Linda University in a graduate program coordinated by the Faculty of Graduate Studies. The Faculty is an organization of scholars, scientists, and educators whose mission is to enhance the quality of research, scholarship, and discovery throughout the University. It cooperates with the eight schools in providing graduate programs that strive to meet the highest academic and intellectual standards.



Loma Linda University is a health sciences campus dedicated to creating learning environments that enable students to develop personal wholeness; to train for careers that serve local, national, and international communities; and to accept every person as having equal worth in the sight of God. Its mission is embodied in the Good Samaritan sculptures, a tableau that occupies a central position on the campus.

The Faculty of Graduate Studies encourages students to engage in original research and creative study that will expand opportunities for wholeness, service, and mutual respect. You will find vigorous academic programs among the degrees sponsored by the Faculty, studies that will stretch your mind and that will encourage you to expand the boundaries of knowledge, understand your world, and apply Christian principles to your life and profession.

Our faculty and staff are here to assist you as you prepare for a career of creative service. Feel free to contact us by email at <[graduatestudies@llu.edu](mailto:graduatestudies@llu.edu)> or by calling toll free 1/800/422-4LLU.

A handwritten signature in black ink, appearing to read 'Anthony J. Zuccarelli'. The signature is stylized with several overlapping loops and a cursive script.

Anthony J. Zuccarelli  
Dean, Faculty of Graduate Studies

## Foundations of Graduate Study

Recognizing the need to provide advanced education, the College of Medical Evangelists (CME) organized its School of Graduate Studies in 1954. The new school conferred a Ph.D. degree in 1958, the first Ph.D. to be awarded by a Seventh-day Adventist institution of higher education.

In 1961 when CME became Loma Linda University, the University assumed oversight of the graduate education conducted by La Sierra College in Riverside, California. By 1963, the School of Graduate Studies had been renamed the Graduate School—with a home in a new building, named Frederick Griggs Hall in honor of a former department chair. The two campuses comprising Loma Linda University—La Sierra and Loma Linda—were separated in 1990.

In 2005, the Graduate School was restructured as the Faculty of Graduate Studies. It continues to provide oversight of graduate programs, supported by other schools of the University; promotes and encourages independent judgment, mastery of research techniques, and contribution to scholarly communication; and relates intellectual achievements to the service of humankind.

### PHILOSOPHY

In the Faculty of Graduate Studies of Loma Linda University, the essential concern of both faculty and students is the quest for meaning. Because this quest is served by knowledge, graduate students are obliged to achieve both broad and detailed mastery of their field of study. They also participate with the faculty in the process by which knowledge is augmented.

### OBJECTIVES

The Faculty of Graduate Studies attempts to create an environment favorable to the pursuit of knowledge and meaning by:

1. Making available to graduate students who wish to study in a Seventh-day Adventist Christian setting the education necessary for scholarly careers in the sciences and the health professions.
2. Encouraging development of independent judgment, mastery of research techniques, and contribution to scholarly communication.
3. Relating intellectual achievement to the service of humankind.

## General Regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III gives the general setting for the programs of each school. The subject and unit requirements for admission to individual professional programs are also outlined in this section. It is important to review specific program requirements in the context of the general requirements applicable to all programs (Section II).

### APPLICATION AND ADMISSIONS

The program admissions committees of the University intend that an applicant to any of the schools is qualified for the proposed curriculum and is capable of profiting from the educational experience offered by this University. The admissions committees of the schools accomplish this by examining evidence of scholastic competence, moral and ethical standards, and significant qualities of character and personality. Applicants are considered for admission only on the recommendation of the program in which study is desired.

### SCHOLARSHIP

Applicants are expected to present an undergraduate record with a grade point average of B (3.0) or better in the overall program and in the major field. Some students with an overall grade point average between 2.5 and 3.0 may be admitted provisionally to graduate standing, provided the grades during the junior and senior years are superior or other evidence of capability is available. Foreign applicants are not eligible for provisional admission.

### FROM MASTER'S TO PH.D. DEGREE

#### **Bypassing master's degree**

A graduate student at this University may proceed first to a master's degree program. If at the time of application the student wishes to qualify for the Doctor of Philosophy degree program, this intention should be declared even if the first objective is to earn a master's degree.

If after admission to the master's degree program a student wishes to go on to the doctoral degree program, an application form should be submitted, along with letters of reference, to the dean(s) of the respective school(s). If the award of the master's degree is sought, the student will be expected to complete that degree before embarking on doctoral activity for credit. A student who bypasses the master's degree may be permitted, on the recommendation of the guidance committee and with the consent of the dean, to transfer courses and research that have been completed in the appropriate field, and that are of equivalent quality and scope, to his/her doctoral program.

## Student Life

The information on student life contained in this CATALOG is brief. The *Student Handbook*—which more comprehensively addresses University and school expectations, regulations, and policies—is available to each registered student. Students need to familiarize themselves with the contents of the *Student Handbook*. Additional information regarding policies specific to a particular school or program within the University is available from the respective school.

## **Academic Information**

Students are responsible for informing themselves of the policies and regulations pertinent to registration, matriculation, and graduation; and for satisfactorily meeting these requirements.

## **Financial Information**

Registration is not complete until tuition and fees on the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

### **GENERAL FINANCIAL PRACTICES**

The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Previous accounts with other schools or this University must have been settled.

### **ON- AND OFF-CAMPUS STUDENT HOUSING**

Students may go to <[llu.edu/central/housing](http://llu.edu/central/housing)> for housing information and a housing application form.

### **ADDITIONAL REQUIREMENTS**

For additional policies governing Loma Linda University students, see Section II of this CATALOG, as well as the University *Student Handbook*. Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

# Graduate Degrees Overseen by the Faculty of Graduate Studies

The Faculty of Graduate Studies oversees the following doctoral and master's degrees, as well as combined degrees programs.

## MASTER'S DEGREES

- Anatomy
- Biochemistry
- Biology
- Biomedical and Clinical Ethics
- Clinical Ministry
- Endodontics
- Family Studies
- Geology
- Implant Dentistry
- Microbiology and Molecular Genetics
- Nutrition
- Oral and Maxillofacial Surgery
- Orthodontics and Dentofacial Orthopedics
- Pediatric Dentistry
- Periodontics
- Physiology
- Prosthodontics
- Religion and the Sciences

## DOCTORAL DEGREES

- Anatomy
- Biochemistry
- Biology
- Earth Science
- Epidemiology
- Family Studies
- Marital and Family Therapy
- Microbiology and Molecular Genetics
- Medical Scientist Training Program
- Nursing
- Pharmacology
- Physical Therapy
- Physiology
- Psychology (Ph.D. in clinical psychology)
- Social Policy and Social Research

**COMBINED DEGREES PROGRAMS**

- Biology or Geology *with* Medicine or Dentistry (M.S./M.D., M.S./D.D.S., Ph.D./M.D. or Ph.D./D.D.S.)
- Psychology *with* Biomedical and Clinical Ethics (Ph.D./M.A.)
- Clinical Psychology *with* Health Education (Ph.D./M.P.H.)
- Clinical Psychology *with* Preventive Care (Ph.D./M.P.H. or Ph.D./Dr. P.H.)
- Social Policy and Social Research *with* Biomedical and Clinical Ethics (Ph.D./M.A.)
- Social Work *with* Social Policy and Social Research (M.S.W./Ph.D.)

## The Combined Degrees Programs of the University

A number of combined degrees programs are offered—each intended to provide additional preparation in the biomedical sciences or in clinical, professional, or basic areas related to the student's field of interest. The combined degrees programs provide opportunities for especially well-qualified and motivated students to pursue professional and graduate education; and to prepare for careers in clinical specialization, teaching, or investigation of problems of health and disease in humans.

For admission to a combined degrees program, students must have a baccalaureate degree and must already be admitted to the schools offering their chosen combined degrees program.

Students may be required to interrupt their professional study for two or more years (as needed) for courses and research for the graduate degree sought.

The student's concurrent status is regarded as continuous until the program is completed or until discontinuance is recommended. The usual degree requirements apply.

Interested and qualified students may choose from the combined degrees programs offered by the University.

### DOUBLE LISTING

In the alphabetical list that follows, for convenience in locating a combined degrees program, the program name is listed twice—the second time in italics with the two program names reversed—e.g., Anatomy *with* Medicine; Medicine *with* Anatomy.

Program curriculum information is contained only in the first listing.

### ANATOMY—SM

*with*

### DENTISTRY—SD

### M.S./M.D., M.S./D.D.S., OR PH.D./D.D.S.

Combined degrees programs allow qualified students to work on combined D.D.S./M.S. or Ph.D. (dentistry with anatomy) degrees. Details are provided in the Dentistry program descriptions earlier in Section III.

### BIOLOGY OR GEOLOGY—ST

*with*

### MEDICINE OR DENTISTRY—SM OR SD

### M.S./M.D. OR M.S./D.D.S.

For students selecting a combined degrees program with a Master of Science degree in biology or geology, up to 12 units of credit for basic science courses and up to 6 units of credit for research and/or graduate courses completed as part of the electives of the professional curriculum may be applied toward the master's degree program.

For students selecting a combined degrees program with a Doctor of Philosophy degree, up to 30 units of credit for basic science courses and up to 30 units of research and/or graduate courses, but not more than 36 units completed as part of the electives of the professional curriculum, may be applied to the Doctor of Philosophy degree program.

The animal physiology and the statistics requirements would be met as part of the professional curriculum.

**BIOETHICS—SR**  
*with*  
**DENTISTRY—SD**  
**M.A./D.D.S.**

JAMES W. WALTERS, Program Director, Bioethics, School of Religion  
 RONALD J. DAILEY, Program Coordinator, School of Dentistry

**FACULTY**

The faculty for the combined degrees program in Bioethics *with* Dentistry is drawn from Loma Linda University's School of Religion and School of Dentistry.

**The Program**

The combined degrees program in Bioethics *with* Dentistry is designed to fit the schedule of D.D.S. students. Ethics in dentistry is well-established at Loma Linda University. Loma Linda University's School of Dentistry is one of a select few in the nation known for their expertise in ethical issues.

**How many additional course work units would an M.A./D.D.S. student take beyond the standard D.D.S. (262 units)? Answer: 36 units.**

An M.A. degree in bioethics taken as a stand-alone degree requires 48 units. However, the M.A./D.D.S. combined degrees student is able to accumulate 12 units in the following manner:

1. Eight (8) units from four courses in the dental curriculum are counted for bioethics M.A. degree credit: a) RELR 717: Diversity and the Christian Health Professional, b) DNES 794: Public Health Dentistry, c) RELR 715: Christian Dentist in the Community, and d) DNES 851: The Dentist and the Law. Acceptance of these 2-unit courses for M.A. degree credit requires an integrative, supplemental eight-page paper that relates the courses' content to bioethics.
2. Four (4) units come from a) the deletion of RELE 734: Christian Ethics for Dentists from the combined degrees student's curriculum because its content is substantively duplicated in the Bioethics Program, and b) the dental curriculum lists one 2-unit "religion selective" that will now be taken in the bioethics selectives.

**How much course work would the M.A./D.D.S. combined degrees student take in the regular bioethics curriculum? Answer: 40 units.**

Eight (8) units (from four 2-unit courses) are purely double counted. These four courses (named above) have sufficiently similar content to bioethics that they warrant being applied to both the D.D.S. and the bioethics M.A. degrees, once the supplemental papers are approved. These short papers integrate professional course work with bioethics content.

**How much course work is taken in the regular D.D.S. curriculum? Answer: 258 units (four fewer than the standard 262 units).**

Four units are deleted because their content is more than duplicated in the M.A. degree curriculum.

### How will D.D.S. students be selected for this program?

Students are selected through a competitive process, led by the School of Dentistry, in conjunction with the Bioethics Program. The School of Dentistry academic dean recommends students, triggering a streamlined admissions process to the M.A. degree curriculum in the Bioethics Program. Currently, one student per year is eligible for a full tuition scholarship for this combined degree.

### M.A. degree requirements

#### School of Dentistry and School of Religion courses transferred from standard dentistry course work

DNES 794	Public Health Dentistry	2.0
DNES 851	The Dentist and the Law	2.0
RELR 715	Christian Dentist in Community	2.0
RELR 717	Diversity and the Christian Health Professional	2.0
Totals		8.0

#### A model curriculum of bioethics course work taken throughout the four years of dental school

##### *First year*

Winter Quarter	RELE 588 Explorers of the Moral Life	4.0
Totals		4.0

##### *Second year*

Winter Quarter	RELE 566 Heroes of Health Care	4.0
Totals		4.0

##### *Third year*

Summer Quarter	RELE 524 Bioethics and Society	4.0
Fall Quarter	RELE 564 Ethics and Health Disparities	4.0
Winter Quarter	RELE 554 Clinical Ethics Practicum I	4.0
Spring Quarter	RELE 567 World Religions and Bioethics	4.0
Totals		16.0

*Fourth year*

Summer Quarter	RELE 568 Bioethics and the Law	4.0
Summer Quarter	RELE 589 Biblical Ethics	4.0
Winter Quarter	RELE 598 Master's Seminar I	2.0
Spring Quarter	RELE 599 Master's Seminar II	2.0
Spring Quarter	RELE 565 The Good, the Bad, and the Ugly: Moral Aspects of Art and Illness	4.0
Totals		16.0
<b>Overall Totals</b>		<b>40.0</b>

**BIOETHICS—SR***with***MEDICINE—SM****M.A./M.D.**

JAMES W. WALTERS, Program Director, Bioethics, School of Religion

HENRY LAMBERTON, Program Coordinator, School of Medicine

**FACULTY**

The faculty for the combined degrees program in Bioethics *with* Medicine is drawn from Loma Linda University's School of Religion and School of Medicine.

**How many additional course work units would a M.A./M.D. student take beyond the standard M.D. (242 units)? Answer: 30 units.**

An M.A. degree in bioethics taken as a stand-alone degree requires 48 units in bioethics courses. However, the M.A./M.D. combined degrees student is able to deduct 18 units that would otherwise be needed if the M.A. and M.D. degrees were taken separately:

1. Twelve (12) units from three courses in the medical curriculum are counted for M.A. degree in bioethics credit: a) MDC 543, 544: Medical Neuroscience, b) PSYT 514: Psychopathology, and c) PRVM 514, 515, 516: Clinical Preventative Medicine. Acceptance of these 2-unit courses for M.A. degree credit requires an integrative, supplemental eight-page paper that relates the courses' content to bioethics.
2. Six (6) units come from three School of Religion courses: a) RELE 704: Medicine and Ethics, b) RELE 714: Advanced Medical Ethics, and c) the deletion of one RELT course from the medical student's combined degrees curriculum because its content is substantively duplicated in the Bioethics Program. (Students are informed of the combined degrees option at the beginning of their freshman year and are encouraged not to take RELE 704: Medicine and Ethics during Fall Quarter if they are contemplating the combined degrees program. The School of Medicine's determination about student acceptability for the combined degrees program can be made immediately after Fall Quarter grades are posted.)

**How much course work would the M.A./M.D. combined degrees student take in the regular bioethics curriculum? Answer: 36 units.**

The rationale: Twelve (12) units are double-counted—the three courses in medicine, previously indicated in 2-a.b.c, that have sufficiently relevant content to bioethics that they academically warrant being applied to the M.A. degree in bioethics requirements.

**How will M.D. degree students be selected for this program?**

Students are selected through a competitive process, led by the School of Medicine, in conjunction with the Bioethics Program. Selection is based upon the standard admission criteria for the M.A. degree in the Bioethics Program minus the GRE, because the MCAT includes a critical thinking component.

**A model curriculum of bioethics course work taken throughout the four years of medical school**

**First Year**

Winter Quarter	RELE 588 Explorers of the Moral Life	4.0
Totals		4.0

**Second Year**

Summer Quarter	RELE 524 Bioethics and Society	4.0
Summer Quarter	RELE 568 Bioethics and the Law	4.0
Fall Quarter	RELE 589 Biblical Ethics	4.0
Winter Quarter	RELE 554 Clinical Ethics Practicum I	4.0
Totals		16.0

**Fourth Year**

Winter Quarter	RELE 566 Heroes of Health Care	4.0
Winter Quarter	RELE 598 Master's Seminar I	2.0
Spring Quarter	RELE 555 Clinical Ethics Practicum II	4.0
Spring Quarter	RELE 565 The Good, the Bad, and the Ugly: Moral Aspects of Art and Illness	4.0
Spring Quarter	RELE 599 Master's Seminar II	2.0
Totals		16.0
<b>Overall Totals</b>		<b>36.0</b>

**BIOETHICS—SR***with***NURSING—SN****M.A./PH.D.**

JAMES W. WALTERS, Program Director, Bioethics, School of Religion

ELIZABETH BOSSERT, Program Coordinator, School of Nursing

**FACULTY**

The faculty for the combined degrees program in Bioethics *with* Nursing is primarily drawn from Loma Linda University's School of Religion and School of Nursing.

**The program**

The M.A./Ph.D. combined degrees program in Bioethics *with* Nursing is designed to facilitate greater integration and more efficient completion of two graduate degrees for students with strong interest in both nursing and ethics.

Students who complete this program will be prepared to make significant interdisciplinary contributions to both fields. Students are required to gain separate acceptance into the M.A. degree curriculum in bioethics and the Ph.D. degree curriculum in the Nursing Program.

**How many additional course work units would an M.A./Ph.D. combined degrees student take beyond the required 90 units in the Nursing Program? Answer: 20 units.**

An M.A. degree in bioethics taken as a stand-alone degree requires 48 units in bioethics courses. However, the M.A./Ph.D. combined degrees student is able to accumulate 28 of the needed 48 units as follows:

1. Twelve (12) units come from three courses in the nursing curriculum denoted as "concentration" courses that are taken in the M.A. degree in bioethics offerings. These three courses focus on the field in which the dissertation will be written.
2. Eight (8) units come from two electives in the nursing curriculum that are taken in the M.A. degree in bioethics offerings.
3. Four (4) units come from two courses in the nursing curriculum that are counted for M.A. degree in bioethics credit: PHIL 616: Philosophy of Science (2 units) and NRSG 574 Philosophical Foundations of Nursing Science (2 units).
4. Four (4) units come from any one of the M.A. degree in bioethics courses that meet the School of Nursing Ph.D. degree requirement of one bioethics graduate-level course.

**How much course work would the M.A./Ph.D. combined degrees student take in the regular bioethics curriculum? Answer: 44 units.**

Four (4) units (from two 2-unit courses) are simply double counted. These two courses have sufficiently similar content to M.A. degree in bioethics courses that they warrant being applied to both the Ph.D. degree curriculum in the Nursing Program and the M.A. degree in the Bioethics Program (see item 3 above).

**How much course work is taken in the regular Ph.D. degree curriculum? Answer: All 90 units are taken.**

**How will the School of Nursing Ph.D. degree students be selected for this program?**

Students are selected through a competitive process led by the School of Nursing, in conjunction with the Bioethics Program. The associate dean for the Graduate Program in the School of Nursing will recommend students. The dean's office recommendation will trigger a streamlined admissions process into the M.A. degree curriculum in the Bioethics Program.

**A model curriculum of bioethics course work taken throughout the five years of nursing school**

**M.A. curriculum**

*First year*

Summer or Fall Quarter	RELE 524 Bioethics and Society	4.0
Fall Quarter	RELE 589 Biblical Ethics	4.0
Winter or Spring Quarter	RELE 588 Explorers of the Moral Life	4.0
Totals		14.0

*Second year*

Fall Quarter	RELE 564 Ethics and Health Disparities	4.0
Spring Quarter	RELE 565 The Good, the Bad, and the Ugly: Moral Aspects of Art and Illness	4.0
Spring Quarter	RELE 567 World Religions and Bioethics	4.0
Totals		12.0

*Third year*

Summer Quarter	RELE 568 Bioethics and the Law	4.0
Winter Quarter	RELE 554 Clinical Ethics Practicum I	4.0
Spring Quarter	RELE 555 Clinical Ethics Practicum II	4.0
Totals		12.0

***Fourth and fifth years***

Winter Quarter	RELE 566 Heroes of Health Care	4.0
Winter Quarter	RELE 598 Master's Seminar I	2.0
Spring Quarter	RELE 599 Master's Seminar II	2.0
Totals		8.0
<b>Overall Totals</b>		<b>52.0</b>

**Ph.D. curriculum*****First year***

Summer Quarter	PHIL 616 Seminar in the Philosophy of Science	2.0
Summer Quarter	NRSG 574 Philosophical Foundations of Nursing Science	2.0
Summer Quarter	NRSG 636 Disciplined Inquiry	2.0
Summer Quarter	NRSG 664 Nursing Science Seminar	1.0
Summer Quarter	PSYC 501 Advanced Statistics I	4.0
Fall, Winter, Spring Quarter	NRSG 637 Nursing Science Seminar	0.0
Fall, Winter, Spring Quarter	NRSG 696 Directed Research	2.0, 2.0
Totals		15.0

***Second year***

Summer	NRSG 575 Theory Development	4.0
Summer	NRSG 686 Advanced Quantitative Research Methods	4.0
Summer	PSYC 502 Advanced Statistics II	4.0
Fall, Winter, Spring	NRSG 637 Scholars Seminar	0.0
Totals		12.0

*Third year*

Summer Quarter	NRSG 637 Nursing Science Seminar	1.0
Summer Quarter	NRSG 660 Qualitative Research Methods I	4.0
Summer Quarter	PSYC 503 Advanced Multivariate Statistics	4.0
Summer Quarter	RELR_ Relational Elective	3.0
Fall, Winter, Spring Quarter	NRSG 637 Scholars Seminar	0.0
Totals		11.0

*Fourth year*

Summer Quarter	NRSG 664 Nursing Science Seminar	1.0
Summer Quarter	Optional Selected Analytical Topic (before or during dissertation)	4.0
Fall, Winter, Spring Quarter	NRSG 637 Scholars Seminar	0.0
Fall, Winter, Spring Quarter	NRSG 697 Research	0.0
Summer Quarter	RELT_ Theological Elective	3.0
Totals		8.0
<b>Overall Totals</b>		<b>90.00</b>
<b>Overall Combined Total</b>		<b>90.0</b>

**BIOETHICS—SR***with***PHARMACY—SP****M.A./PHARM.D.**

JAMES W. WALTERS, Program Director, Bioethics, School of Religion

ERIC MACK, Program Director, School of Pharmacy

**FACULTY**

The faculty of the M.A./Pharm.D. combined degrees program is primarily drawn from Loma Linda University's School of Pharmacy and School of Religion.

**The program**

The M.A./Pharm.D. combined degrees program is designed to fit the schedule of Pharm.D. students. Loma Linda University has been a leader in bioethics education for health care professionals for nearly half a century. The University's School of Pharmacy places a high premium on moral values and is a pioneer as the only pharmacy school in the nation to offer an M.A./Pharm.D. combined degrees program.

**How many additional course work units would a M.A./Pharm.D. combined degrees student take beyond the required 183 units for a Pharm.D.? Answer: 22 units.**

An M.A. degree in bioethics taken as a stand-alone degree requires 48 units in bioethics courses. But the M.A./Pharm.D. combined degrees student is able to accumulate 26 of the needed 48 units as follows:

1. Nine (9) units come from three courses in the pharmacy curriculum that are counted for M.A. degree in bioethics credit: a) RXSA 545 Public Health and Lifestyles, b) RXSA 547 Pharmacy Law, and c) RXSA 751 Social-Behavioral Aspects of Pharmacy Practice Preventative Medicine. Acceptance of these 2-unit courses for M.A. degree credit requires an integrative, supplemental eight-page paper that relates the courses' content to bioethics.
2. Eight (8) units come from the deletion of three School of Religion courses because their content is duplicated by the Bioethics Program content.
3. Nine (9) units of additional credit come from three electives in bioethics taken by Pharm.D. students.

**How much course work would the M.A./Pharm.D. combined degrees student take in the regular bioethics curriculum? Answer: 39 units.**

Nine units are simply double counted—the three pharmacy courses noted above.

**How much course work is taken in the regular pharmacy curriculum? Answer: 175 units (rather than the standard 183).**

Eight units of the standard Pharm.D. program that are duplicated by content in the bioethics curriculum are deleted from the 183 units of the regular Pharm.D. degree total.

**What is the additional tuition cost for a Pharm.D. degree student who takes the M.A./Pharm.D. combined degrees program? Answer: Nothing.**

There is no additional cost to the student because the School of Pharmacy and the School of Religion provide a scholarship for the 39 units of the M.A. degree in bioethics curriculum. Currently, this amounts to a \$25,000 scholarship.

### How will Pharm.D. degree students be selected for this program?

Students will be selected through a competitive process, led by the School of Pharmacy in conjunction with the Bioethics Program. The School of Pharmacy academic dean recommends students. The recommendation triggers a streamlined admissions process of for the M.A. degree curriculum in the Bioethics Program. Currently, four students per year are eligible for a full-tuition scholarship for this combined degrees program. (Nonscholarship students may apply for the M.A./Pharm.D combined degrees program but will need permission of the School of Pharmacy academic dean. If accepted into the M.A. degree program, the School of Religion will give a 50 percent tuition discount for relevant M.A. degree course work.)

### M.A. degree requirements

#### School of Pharmacy and School of Religion courses transferred from standard pharmacy course work

RXSA 545	Public Health and Lifestyles	3.0
RXSA 547	Pharmacy Law	3.0
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3.0
Totals		9.0

#### A model curriculum of bioethics course work taken throughout the four years of pharmacy school

##### *First year*

Spring Quarter	RELE 567 World Religions and Bioethics	4.0
Spring Quarter	RELE 565 The Good, the Bad, and the Ugly: Moral Aspects of Art and Illness	4.0
Totals		8.0

##### *Second Year:*

Summer Quarter	RELE 568 Bioethics and the Law	4.0
Summer Quarter	RELE 589 Biblical Ethics	4.0
Spring Quarter	RELE 588 Explorers of the Moral Life	4.0
Totals		12.0

##### *Third year*

Fall Quarter	RELE 544 Bioethics Integration	3.0
Fall Quarter	RELE 564 Ethics and Health Disparities	4.0
Winter Quarter	RELE 566 Heroes of Health Care	4.0
Spring Quarter	RELE 555 Clinical Ethics Practicum II	4.0
Totals		15.0

**Fourth Year**

Winter Quarter	RELE 598 Maste'rs Seminar I	2.0
Spring Quarter	RELE 599 Master's Seminar II	2.0
Totals		4.0
<b>Overall Totals</b>		<b>39.0</b>

**BIOETHICS—SR***with***PSYCHOLOGY—ST****M.A./PSY.D. OR M.A./PH.D.**

JAMES W. WALTERS, Program Director, Bioethics

LOUIS E. JENKINS, Chair, Department of Psychology

**FACULTY**

The faculty for the combined degrees Bioethics *with* Psychology Program is drawn from the School of Religion and from the Department of Psychology in the School of Science and Technology.

**The program**

This program combines study for the M.A. degree in bioethics (offered by the School of Religion) with either the Psy.D. or Ph.D. degree in psychology (offered by the Department of Psychology of the School of Science and Technology). The purpose of the combined degrees program is to facilitate more efficient completion of graduate programs in ethics and psychology for the student with interests in both areas. Students who complete the program should be prepared to make significant interdisciplinary contributions to the fields of psychology and of ethics. In order to enter this combined degrees program, students must gain separate acceptance into the M.A. degree in ethics curriculum and to one of the doctoral degree curricula in psychology. Admission information is available from the School of Science and Technology.

**Course requirements**

Students in this combined degrees program will complete all the requirements for both degrees with greater efficiency by taking a number of courses that fulfill requirements for both degrees. Approval for selective courses should be sought from the student's advisors for both degrees.

**M.A. curriculum**

A total of 48 quarter units is required for the M.A. degree. The following courses constitute the core requirements for students completing the M.A. degree in bioethics when taken with psychology as part of the combined degrees program:

**Core requirements**

RELE 524	Bioethics and Society	4.0
RELE 548	Christian Social Ethics	4.0
RELE 554	Clinical Ethics Practicum I	4.0
RELE 555	Clinical Ethics Practicum II	4.0
RELE 577	Theological Ethics	4.0
RELE 588	Philosophical Ethics	4.0
RELG 504	Research Methods	2.0
RELR 584	Culture, Psychology, and Religion	3.0
RELR 585	Psychology of Religion	3.0
PSYC 505	Research Methods in Psychological Science	4.0
Totals		36.0

In addition to the preceding 36 units, students completing the M.A. degree program will choose 12 units from the following list of selectives:

**Selectives**

PSYC 524	History, Systems, and Philosophy of Psychology	2.0
PSYC 526	Ethics and Legal Issues in Clinical Psychology	3.0
PSYC 536	Seminar in Psychology and Religion	3.0
PSYC 551	Psychobiological Foundations	4.0
PSYC 564	Foundations of Social Psychology and Culture	4.0
PSYC 566	Cross-cultural Psychology	2.0
PSYC 567	Human Diversity	3.0
PSYC 574	Personality Theory and Research	4.0
PSYC 575	Foundations of Human Development	4.0
Totals		12.0
<b>Overall Totals</b>		<b>48.0</b>

**Psychology – Ph.D. or Psy.D. curriculum**

Students completing one of the doctoral curricula in psychology will complete all of the course requirements as listed in the School of Science and Technology, 2 units of minor concentration, which will be fulfilled by 12 of the selective units listed above. (See the Psychology Program for full information.)

**BIOETHICS—SR**  
*with*  
**SOCIAL POLICY AND SOCIAL RESEARCH—ST**  
**M.A./PH.D.**

JAMES W. WALTERS, Program Director, Bioethics

CHRISTIANE SCHUBERT, Program Director, Social Policy and Social Research, Department of Social Work and Social Ecology

**FACULTY**

The faculty for the combined degrees Bioethics *with* Social Policy and Social Research Program is drawn from the School of Religion and from the Department of Social Work and Social Ecology in the School of Science and Technology.

**Purpose of the program**

The purpose of the M.A./Ph.D. combined degrees Bioethics *with* Social Policy and Social Research Program is to facilitate an integrated and more efficient completion of two graduate degrees for students with strong interests in both bioethics and social policy. Students who complete this combined degrees program will be prepared to make significant interdisciplinary contributions to the field of social policy and ethics. Individuals working in the area of social policy must be able to undertake and publish research on social problems. This requires the ability to apply ethical theory to real-world policy scenarios. Graduates will be able to provide leadership to the social policy arena by conducting interdisciplinary research on various issues and agendas that have significant moral implications.

**Course work requirements**

To enter the proposed program, students must gain separate acceptance to both graduate programs. To the extent possible, research projects in both programs focus on the interface of ethics and social policy.

**How many additional course work units would an M.A./Ph.D degree student take beyond the required 105 Social Policy and Social Research Program units? Answer: 16 units.**

If an M.A. degree in bioethics is taken as a stand-alone degree, the requirement is 48 units. However, the M.A./Ph.D. combined degrees student is able to accumulate 32 of the needed 48 units as follows:

1. Sixteen (16) units from four courses in the social policy curriculum count toward the M.A. degree in bioethics requirements because of their similarity to ethics-type courses. Those courses are a) SPOL 613 and SPOL 614: Social Science Concepts I and II, b) SPOL 655: Research Methods II, c) SPOL 615: Economic Theory and Social Policy.
2. Twelve (12) units from electives in the social policy curriculum are taken in the master's degree curriculum in bioethics.
3. Four (4) units come from one required bioethics course in the social policy curriculum that is already required: RELE 588: Explorers of the Moral Life.

**How much course work would the M.A./Ph.D. combined degrees student take in the regular bioethics curriculum? Answer: 32 units.**

Sixteen (16) units (from four 4-unit courses) are simply double counted. These four courses have sufficiently similar content to bioethics that they warrant being applied to both the bioethics M.A. degree curriculum and the Social Policy Ph.D. degree curriculum.

**How much course work is taken in the regular 105-unit Ph.D. degree curriculum? Answer: All 105 units are taken.**

**How will social policy curriculum Ph.D. degree students be selected for this program?**

The Social Policy and Social Research Program director recommends students. These recommendations trigger a streamlined admissions process for the M.A. degree curriculum in bioethics.

**Ethics core**

RELE 524	Bioethics and Society	4.0
RELE 565	The Good, the Bad, and the Ugly: Moral Aspects of Art and Illness	4.0
RELE 566	Heroes of Health Care	4.0
RELE 567	World Religions and Bioethics	4.0
RELE 568	Bioethics and the Law	4.0
RELE 588	Explorers of the Moral Life	4.0
RELE 589	Biblical Ethics	4.0
RELE 598	Master's Seminar I	2.0
RELE 599	Master's Seminar II	2.0
Totals		32.0

**Social policy core courses that apply**

SPOL 613	Social Science Concepts and Theories I	4.0
PSYC 614	Social Science Concepts and Theories II	4.0
SPOL 615	Economic Theory and Social Policy	4.0
SPOL 655	Research Methods II	4.0
Totals		16.0

**Social policy and social research core**

**Social science**

SPOL 613	Social Science Concepts and Theories I	4.0
SPOL 614	Social Science Concepts and Theories II	4.0
SPOL 615	Economic Theory and Social Policy	4.0
SPOL 656	Organizational Theory and Policy	4.0
SPOL 658	Methods of Policy Analysis and Research	4.0
Totals		20.0

**Religion**

RELR 525	Health Care and the Dynamics of Christian Leadership	3.0
RELT 557	Theology of Human Suffering	4.0
Totals		7.0

**Research Methods, Statistics, and Information Technology**

SPOL 654	Research Methods I	4.0
SPOL 655	Research Methods II	4.0
PSYC 501	Advanced Statistics I (4)	
PSYC 502	Advanced Statistics II (4)	Sequence 1
PSYC 503	Advanced Multivariate Statistics (4)	
MFTH 601	Statistics I (4)	
MFTH 604	Advanced Qualitative Methods (4)	Sequence 2
MFTH 605	Advanced Quantitative Methods (4)	
SPOL 665	Information Technologies and Decision Science	4.0
STAT ____	Statistics (advanced course in statistics or methods)	4.0
Totals		28.0

**Applied/Structured Research**

SPOL 671	Applied/Structured Research I (2.0-4.0)	2.0
SPOL 672	Applied/Structured Research II (2.0-4.0)	4.0
SPOL 673	Applied/Structured Research III (2.0-4.0)	4.0
Totals		10.0

**Dissertation Research**

SPOL 681	Dissertation Proposal I	2.0
SPOL 682	Dissertation Proposal II	2.0
SPOL 683	Dissertation Proposal III	2.0
SPOL 697	Research (8.0-12.0)	12.0
SPOL 699	Dissertation (4.0-12.0)	6.0
Totals		24.0
<b>Overall Totals</b>		<b>121.0</b>

**BIOMEDICAL SCIENCE—ST***with***DENTISTRY—SD****PH.D./D.D.S.**

The Ph.D./D.D.S. is a combined degrees program leading to the Doctor of Dental Surgery degree and the Doctor of Philosophy degree. This biomedical sciences program provides opportunity for well-qualified and motivated students to pursue both a professional and a graduate education and to prepare for careers in clinical specialization, teaching, or investigation in health and human disease. The student who has a baccalaureate degree and the approval of the Biomedical Advisory Committee may enter the combined degrees program and work concurrently toward both degrees. A minimum of six years is required to complete this combined degrees program, offered cooperatively by the School of Dentistry and the Faculty of Graduate Studies.

**CLINICAL MINISTRY—SR***with***MARITAL AND FAMILY THERAPY—ST****M.A./M.S.**

SIROJ SORAJJAKOOL, Program Director, Clinical Ministry

MARY E. MOLINE, Program Director, Counseling and Family Sciences

**FACULTY**

The faculty for the combined degrees Clinical Ministry *with* Marital and Family Therapy Program is drawn from the School of Religion and from the Department of Counseling and Family Sciences in the School of Science and Technology.

**The program**

The combined Master of Arts degree in clinical ministry and Master of Science degree in marital and family therapy (MFAM) have many common subject areas, such as the spiritual and clinical emphasis in caring for the whole person. The joining of the two degree curricula provides the student with the added Christian clinical counseling skills needed to minister to many spiritual and mental health problems.

The marital and family therapy degree also prepares the student for a clinical license. Licensure allows the student in the M.A./M.S. combined degrees program more options for practice, including private practice. The student's ability to provide more services to the community—in addition to the traditional areas of practice, such as hospitals, churches, and schools—is increased.

**Objectives**

The combined degrees Clinical Ministry with Marital and Family Therapy Program has the following objectives:

1. Students will gain clinical skills related to the field of spiritual care and marriage and family therapy that will enable them to become competent practitioners.
2. Students will learn to integrate theoretical, theological, biblical, and philosophical foundations pertaining to the study of spirituality and marriage and family therapy.
3. Students will be able to identify spiritual issues within the context of marital relations and health care and offer spiritual interventions.

4. Students will be knowledgeable of the legal and ethical standards relevant to the fields of chaplaincy and marital and family therapy and apply their knowledge to their clinical practice.

The family clinical ministry track provides the basis for doctoral work in mental health and religious studies. Outstanding students are encouraged to explore possibilities for further studies.

### Admission

Applicants will need to apply to both programs separately, be accepted to both programs separately, and follow their admission requirements in order to qualify for the combined degree. (See the CATALOG for specific instructions). Students can start the combined degrees program either by taking marital and family therapy courses their first year or taking clinical ministries courses their first year.

### Clinical placements

Students who take case presentation in MFAM will be placed in secular sites. Students taking course work in clinical ministries but who are continuing their case presentation in MFAM will be placed in a Christian-oriented site, such as the Christian Counseling Center.

### Course requirements

In order to complete the combined degrees program, Master of Arts degree in clinical ministry with Master of Science degree in marital and family therapy, the student will complete a minimum of 101 units of course work as specified—with an overall grade average of B or better, with no grade lower than a C and with no grade in a core course lower than a B-. The required curriculum is as follows:

### Curriculum

#### First year

##### *Postsummer Session (intensive)*

MFAM 535	Case Presentation and Professional Studies	4.0
Totals		4.0

##### *Fall Quarter*

MFAM 515	Crisis Intervention Counseling	3.0
MFAM 551	Family Therapy: Foundational Theories and Practice	3.0
MFAM 556	Psychopathology and Diagnostic Procedures	3.0
MFAM 614	Laws and Ethics	3.0
MFAM 547	Social Ecology of Individual and Family Development	3.0
Totals		15.0

**Winter Quarter**

MFAM 536	Case Presentation Seminar	2.0
FMST 514	Cross-cultural Counseling Family Values	2.0
MFAM 553	Family Systems Theory	3.0
MFAM 644	Child Abuse and Family Violence	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		10.0

**Spring Quarter**

MFAM 501	Research Tools and Methodology: Quantitative	3.0
MFAM 537	Case Presentation Seminar	2.0
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3.0
MFAM 584	Advanced Child and Adolescent Development	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		11.0

**Summer Quarter**

MFAM 568	Groups: Process and Procedures	3.0
MFAM ____	Modality elective	2.0
*MFAM 734	Professional Clinical Training	3.0
Totals		5.0

**Second year****Fall Quarter**

MFAM 502	Research Tools and Methodology: Qualitative	3.0
MFAM 552	Couples Therapy: Theory and Practice	3.0
*MFAM 734	Professional Clinical Training	1.5
RELR 567	Pastoral Counseling	3.0
Totals		9.0

**Winter Quarter**

MFAM 524	Psychopharmacology and Medical Issues	3.0
MFAM 624	Individual and Systems Assessment	3.0
RELR 568	Care of the Dying and Bereaved	3.0
RELR 584	Culture, Psychology, and Religion	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		12.0

*Spring Quarter*

MFAM 545	Gender Perspectives	2.0
MFAM 674	Human Sexual Behavior	3.0
RELT 559 or RELR 587	New Testament Thought Religion and the Social Sciences	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		8.0

**Third year***Summer Quarter*

RELE 524	Bioethics and Society	3.0
RELT 558	Old Testament Thought	3.0
Totals		6.0

*Fall Quarter*

MFAM 635	Case Presentation Seminar	2.0
RELR 565	Introduction to Pastoral Theology and Methodology	3.0
RELR 564	Religion, Marriage, and the Family	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		8.0

*Winter Quarter*

MFAM 636	Case Presentation Seminar	2.0
MFAM 638	Family Therapy and Chemical Abuse	3.0
RELR 574	Preaching	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		8.0

*Spring Quarter*

MFAM 637	Case Presentation Seminar	2.0
RELT 557	Theology of Human Suffering	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		5.0

\*Clinical training is a nonacademic activity and requires a fee

MFAM 734	Professional Clinical Training (15 clinical units)	-
<b>Overall Totals</b>		<b>101.0</b>

**DENTISTRY—SD (FALL QUARTER)***with***ANATOMY—SM****D.D.S./PH.D.**(See program in Anatomy *with* Dentistry.)**DENTISTRY—SD***with***BIOLOGY—ST****D.D.S./M.S.**(See program in Biology *with* Dentistry.)**DENTISTRY—SD***with***BIOETHICS—SR****D.D.S./M.A.**(See program in Bioethics *with* Dentistry.)**DENTISTRY—SD***with***BIOMEDICAL SCIENCES—SM****D.D.S./PH.D.**(See program in Biomedical Sciences *with* Dentistry.)**DENTISTRY—SD***with***GEOLOGY—ST****D.D.S./M.S.**(See program in Biology or Geology *with* Dentistry.)**DENTISTRY—SD***with***MASTER OF SCIENCE—SD****D.D.S./M.S.**

The D.D.S./M.S. is a combined degrees program leading to the Doctor of Dental Surgery and the Master of Science degrees. It is open to qualified students of dentistry. The student who is interested in establishing a broader professional base in science or who is looking toward a career in teaching or research may take an interim leave from the School of Dentistry to fulfill the professional degree requirements subsequent to or concurrent with completing course work and research for the Master of Science degree.

**MARITAL AND FAMILY THERAPY—ST***with***BIOETHICS—SR****M.S./M.A.**(See program in Bioethics *with* Marital and Family Therapy.)

**MARITAL AND FAMILY THERAPY—ST***with***CLINICAL MINISTRY—SR****M.A./M.S.**

SIROJ SORAJJAKOOL, Program Director, Clinical Ministry

MARY E. MOLINE, Program Director, Counseling and Family Sciences

**FACULTY**

The faculty for the combined degrees program in Clinical Ministry *with* Marital and Family Therapy is drawn from the School of Religion and from the Department of Counseling and Family Sciences in the School of Science and Technology.

**The program**

The combined Master of Arts degree in clinical ministry and Master of Science degree in marital and family therapy degree programs have many common subject areas, such as the spiritual and clinical emphasis on caring for the whole person. The joining of the two degree programs provides the student with the added Christian clinical counseling skills needed to minister to many spiritual and mental health problems.

The marital and family therapy degree program also prepares the student for a clinical license. Licensure allows the student in the M.A./M.S. combined degrees program more options for practice, including private practice. The student's ability to provide more services to the community—in addition to the traditional areas of practice, such as hospitals, churches, and schools—is increased.

**Objectives**

The combined degrees program in clinical ministry with marital and family therapy has the following objectives:

1. Students will gain clinical skills related to the field of spiritual care and marriage and family therapy that will enable them to become competent practitioners.
2. Students will learn to integrate theoretical, theological, biblical, and philosophical foundations pertaining to the study of spirituality and marriage and family therapy.
3. Students will be able to identify spiritual issues within the context of marital relations and health care and offer spiritual interventions.
4. Students will be knowledgeable of the legal and ethical standards relevant to the fields of chaplaincy and marital and family therapy and apply their knowledge to their clinical practice.

The family clinical ministry track provides the basis for doctoral work in mental health and religious studies. Outstanding students are encouraged to explore possibilities for further studies.

**Admission**

Applicants will need to apply to both programs separately, be accepted to both programs separately, and follow their admission requirements in order to qualify for the combined degrees. (See the CATALOG for specific instructions). Students can start the combined degrees program either by taking marital and family therapy courses their first year or by taking clinical ministries courses their first year.

## Clinical placements

Students taking case presentation in MFAM will be placed in secular sites. Students taking course work in clinical ministries but who are continuing their case presentation in MFAM will be placed in a Christian-oriented site, such as the Christian Counseling Center.

## Course requirements

In order to receive the Master of Arts degree in clinical ministry and the Master of Science degree in marital and family therapy from Loma Linda University, the student will complete a minimum of 101 units of course work as specified—with an overall grade average of B or better, with no grade lower than a C and with no grade in a core course lower than a B-. The required curriculum is as follows:

## Curriculum

### First year

#### *Postsummer Session (intensive)*

MFAM 535	Case Presentation and Professional Studies	4.0
Totals		4.0

#### *Fall Quarter*

MFAM 515	Crisis Intervention Counseling	3.0
MFAM 551	Family Therapy: Foundational Theories and Practice	3.0
MFAM 556	Psychopathology and Diagnostic Procedures	3.0
MFAM 614	Laws and Ethics	3.0
MFAM 547	Social Ecology of Individual and Family Development	3.0
Totals		15.0

#### *Winter Quarter*

MFAM 536	Case Presentation Seminar	2.0
FMST 514	Cross-cultural Counseling Family Values	2.0
MFAM 553	Family Systems Theory	3.0
MFAM 644	Child Abuse and Family Violence	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		10.0

#### *Spring Quarter*

MFAM 501	Research Tools and Methodology: Quantitative	3.0
MFAM 537	Case Presentation Seminar	2.0
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3.0
MFAM 584	Advanced Child and Adolescent Development	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		11.0

*Summer Quarter***Second year***Fall Quarter*

MFAM 502	Research Tools and Methodology: Qualitative	3.0
MFAM 552	Couples Therapy: Theory and Practice	3.0
*MFAM 734	Professional Clinical Training	1.5
RELR 567	Pastoral Counseling	3.0
Totals		9.0

*Winter Quarter*

MFAM 524	Psychopharmacology and Medical Issues	3.0
MFAM 624	Individual and Systems Assessment	3.0
RELR 568	Care of the Dying and Bereaved	3.0
RELR 584	Culture, Psychology, and Religion	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		12.0

*Spring Quarter*

MFAM 545	Gender Perspectives	2.0
MFAM 674	Human Sexual Behavior	3.0
RELT 559 or RELR 587	New Testament Thought Religion and the Social Sciences	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		8.0

**Third year***Summer Quarter*

RELE 524	Bioethics and Society	3.0
RELT 558	Old Testament Thought	3.0
Totals		6.0

*Fall Quarter*

MFAM 635	Case Presentation Seminar	2.0
RELR 565	Introduction to Pastoral Theology and Methodology	3.0
RELR 564	Religion, Marriage, and the Family	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		8.0

**Winter Quarter**

MFAM 636	Case Presentation Seminar	2.0
MFAM 638	Family Therapy and Chemical Abuse	3.0
RELR 574	Preaching	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		8.0

**Spring Quarter**

MFAM 637	Case Presentation Seminar	2.0
RELT 557	Theology of Human Suffering	3.0
*MFAM 734	Professional Clinical Training	1.5
Totals		5.0

\* Clinical training courses are nonacademic units and require a fee

MFAM 734	Professional Clinical Training (15 clinical units)	-
Overall Totals		101.0

**MASTER OF SCIENCE—SD***with***DENTISTRY—SD****M.S./D.D.S.**

(See "Combined degrees" programs in the School of Dentistry.)

**MEDICAL SCIENTIST—SM****(M.D. WITH PH.D.)**

The program is designed to attract students who are energized by doing research and want to contribute substantially to this enterprise.

Students enter this combined degrees program through the Integrated Biomedical Graduate Studies (IGBS) graduate programs (anatomy, biochemistry, microbiology and molecular genetics, pharmacology and physiology). In the first year, students participate in a scientifically integrated program that includes biochemistry, molecular biology, physiology, pharmacology, and anatomy. While in the first year, students also rotate through the laboratories of selected faculty members.

In the second year, students increase their involvement in individual laboratory projects while continuing to complete graduate course requirements. Students in selected areas may also be asked to serve as teaching assistants for graduate or medical classes. Students pursuing the combined degrees may also be involved with joint basic science and clinical meetings and conferences with the aim of understanding the interrelationships between laboratory-based and clinical research.

Upon demonstration of laboratory success, as indicated by completion of a first-author manuscript, the student will continue on to the traditional first two years of the medical school curriculum. It is anticipated that the amount of time required to demonstrate laboratory success will be two-to-three years. Successful students who have acquired essential laboratory skills should continue their affiliation with the host laboratory and continue research progress as time permits while in the medical school curriculum.

Upon successful completion of the first two years of the medical curriculum and Step 1 of the USMLE examination, students will begin a series of rotations between the clinical sciences and the research

laboratory. During these later years, students will complete all the standard clinical rotations and continue progress on laboratory projects. It is the intent of this program that students will acquire the requisite skills needed for a successful career at the interface of laboratory-based and clinical research.

### **Program admission**

Admission into the Medical Scientist Program is competitive and requires evidence that the student is likely to develop into a successful medical scientist. The student must submit separate applications to the School of Medicine for both the M.D. and the Ph.D. degree programs, and meet the stated admissions requirements for each of these programs. The application package for the Ph.D. degree program requires scores for the general test of the Graduate Record Examination. Both programs must accept a student before he or she is admitted to the Medical Scientist Program. Students entering the M.D./Ph.D. combined degrees program who determine that a research career is inappropriate may elect to complete the M.D. degree program independently. Students entering the Ph.D. degree program who desire a career in academic medicine may choose to apply for admission to the M.D./Ph.D. combined degrees program at a point after their entry into the Ph.D. degree program; however, the standard medical school application process will be required at that point.

For information regarding tuition waivers and scholarships, contact the director of the Medical Scientist Program.

### **MEDICINE—SM**

*with*

### **BIOLOGY—ST**

### **M.D./M.S.**

(See program in Biology or Geology *with* Medicine.)

### **MEDICINE—SM**

*with*

### **BIOETHICS—SR**

### **M.D./M.A.**

(See program in Bioethics *with* Medicine.)

### **MEDICINE—SM**

*with*

### **GEOLOGY—ST**

### **M.D./M.S.**

(See program in Biology or Geology *with* Medicine.)

### **MEDICINE—SM**

*with*

### **MASTER OF SCIENCE—SM OR**

### **DOCTOR OF PHILOSOPHY—SM**

### **M.D./M.S. OR M.D./PH.D.**

(See program in Medicine *with* Master of Science and program in Medicine *with* Doctor of Philosophy.)

**MEDICINE—SM***with***ORAL AND MAXILLOFACIAL SURGERY (OMS)—SD  
M.D./POST-D.D.S. OMS SPECIALTY CERTIFICATE**(See Oral and Maxillofacial Surgery—SD *with* Medicine.)**ORAL AND MAXILLOFACIAL SURGERY (OMS)—SD***with***MEDICINE—SM****POST-D.D.S. SPECIALTY CERTIFICATE/M.D.**

The M.D./OMS program is designed to provide an opportunity for qualified dentists to obtain the Doctor of Medicine degree in a customized three-year period. Clinical surgical health care delivery is emphasized. The content of the program conforms to the Standards of the Commission on Accreditation and is designed to prepare the surgeon for certification by the American Board of Oral and Maxillofacial Surgery. Oral and maxillofacial surgery residents begin their residency program on the OMS service. They subsequently enter the second-year class at Loma Linda University School of Medicine (with advanced standing). The residents then complete the second, third, and fourth years of medical school. The fourth year of the OMS residency consists of a full postgraduate year of general surgery. The resident completes the final two years of the OMS training on the OMS service. During the final year, s/he functions as chief resident.

**Application process**

Application for admission should be submitted to the School of Dentistry by October 15 of the year prior to the summer of intended enrollment. The School of Dentistry participates in the Post Doctoral Application Service (PASS). Applicants are recommended to the School of Medicine for consideration in the six-year OMS program.

**Tuition**

Students in the OMS program with the School of Medicine are charged tuition and fees for the first two and one-half years of the program; tuition for the remaining years is waived.

**Required courses**

MDCJ 561	Physical Diagnosis and Medical Interviewing	7.0
PATH 514	Human Systemic Pathology	10.0
PHRM 511	Medical Pharmacology	6.5
PSYT 514	Psychopathology	4.0
PSYT 521	Fundamentals of Behavioral Science	3.0
MDCJ 524	Pathophysiology and Applied Physical Diagnosis	12.0
FMDN 701	Family Medicine Clerkship	6.0
GYOB 701	Gynecology/Obstetrics Clerkship	9.0
MEDN 701	Internal Medicine Clerkship	15.0
PEDS 701	Pediatrics Clerkship	12.0
PSYT 701	Psychiatry Clerkship	9.0
SURG 701	Surgery Clerkship	15.0
RELR 714	Advanced Medical Ethics	2.0

EMDN 821	Emergency Medicine Clerkship	3.0
NEUR 701	Neurology Clerkship	6.0
Totals		119.5

In addition, students will complete 6 units of religion courses, 6 units of intensive care, 6 units of ENT subinternship, and 30 units of electives comprised of anesthesia and oral and maxillofacial surgery.

Upon completion of the medical school curriculum, the student enters a one-year general surgery internship, followed by two years of oral and maxillofacial surgery residency.

## **MEDICINE—SM**

*with*

### **ORAL AND MAXILLOFACIAL SURGERY (OMS)—SD**

#### **PD-OMS, M.S./M.D.**

(See Oral and Maxillofacial Surgery, SD post-D.S.S. advanced certificate/M.S. option program *with* Medicine.)

## **NURSING, ADVANCED PRACTICE—SN**

*with*

### **BIOETHICS—SR**

#### **PH.D./M.A.**

(See program in Bioethics *with* Nursing, Advanced Practice.)

## **PREVENTIVE CARE—PH**

*with*

### **PSYCHOLOGY, CLINICAL—ST**

#### **DR.P.H./PSY.D.**

The Doctor of Public Health (preventive care) with Doctor of Psychology (clinical) combined degrees program (Dr.P.H./Psy.D.) is designed for individuals who wish to combine public health science with clinical psychology.

### **Admission requirements**

For acceptance into the combined degrees Doctor of Public Health/Doctor of Psychology Program, the applicant must meet the required prerequisites for each program (see programs for respective prerequisites).

### **Course of study**

The course of study for the combined degrees Doctor of Public Health/Doctor of Psychology Program consists of a minimum of 245 units, as outlined below.

**Corequisite for public health/biomedical sciences**

ENVH 509	Principles of Environmental Health	3.0
EPDM 509	Principles of Epidemiology I	3.0
GLBH 524	Cultural Competence and Health Disparities	2.0
HADM 509	Principles of Health Policy and Management	3.0
HPRO 501	Human Anatomy and Physiology I	6.0
HPRO 502	Human Anatomy and Physiology II	6.0
HPRO 519	Pharmacology	3.0
or		
PSYC 555	Psychopharmacology	2.0
HPRO 531	Pathology of Human Systems I	3.0
HPRO 532	Pathology of Human Systems II	3.0
HPRO 536	Program Planning and Evaluation	2.0
PHCJ 605	Overview of Public Health	1.0
NUTR 509	Public Health Nutrition and Biology	3.0
or		
NUTR 510	Advanced Public Health Nutrition	
Totals		37.0-38.0

**Degree requirements****Preventive care**

EPDM 566	Epidemiology of Cardiovascular Disease	3.0
or		
EPDM 565	Epidemiology of Cancer	
HPRO 515	Mind-Body Interactions and Health Outcomes	3.0
HPRO 526	Lifestyle Diseases and Risk Reduction	3.0
HPRO 527	Obesity and Disordered Eating	3.0
HPRO 529	Preventive and Therapeutic Interventions/Chronic Disease	4.0
HPRO 553	Addiction Theory and Program Development	3.0
HPRO 565	Tobacco Use: Prevention and Interventions	3.0
HPRO 573	Exercise Physiology I	3.0
HPRO 575	Immune Systems: Public Health Application	3.0
HPRO 578	Exercise Physiology II	3.0
HPRO 586	Introduction to Preventive Care	1.0
HPRO 588	Health Behavior Theory and Research	4.0
or		
PSYC 554	Health Psychology	
HPRO 606	Motivational Interviewing	2.0
NUTR 504	Nutritional Metabolism	5.0
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4.0

NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4.0
NUTR 556	Nutritional Application in Lifestyle Intervention	1.0
NUTR 578	Exercise Nutrition	2.0
Totals		54.0

### Research and evaluation

Applicable to both programs

PSYC 501 or STAT 509	Advanced Statistics  General Statistics	4.0
PSYC 502 or STAT 514	Advanced Statistics  Intermediate Statistics for Health Science Data	4.0  3.0
PSYC 511	Psychometric Foundations	3.0
HPRO 534	Research Methods	2.0, 2.0
PHCJ 604	Research Seminar	2.0
HPRO 694	Research	6.0
HPRO 698	Dissertation	12.0
Totals		34.0-35.0

### Psychological science foundation

PSYC 524	History, Systems, and Philosophy of Psychology	2.0
PSYC 545	Cognitive Foundations	4.0
PSYC 551	Psychobiological Foundations	4.0
PSYC 564	Foundations of Social Psychology and Culture	4.0
PSYC 575	Foundations of Human Development	4.0
PSYC 591A	First-Year Colloquium	1.0
PSYC 591B	Second-Year Colloquium	1.0
PSYC 591C	Third-Year Colloquium	1.0
Totals		21.0

### General clinical

PSYC 571	Adult Psychopathology	4.0
PSYC 555	Psychopharmacology	2.0
or HPRO 519	Pharmacology	3.0
PSYC 721	Practicum Preparation	3.0
Totals		9.0-10.0

**Psychological assessment**

PSYC 512/ 512L	Psychological Assessment I Laboratory	3.0
PSYC 513/ 513L	Psychological Assessment II Laboratory	3.0
PSYC 516/ 516L	Neuropsychological Assessment III Laboratory	3.0
Totals		9.0

**Psychological treatment**

PSYC 581/ 581L	Cognitive and Behavioral Therapy Laboratory	3.0
or HPRO 607	Stress Management	2.0
PSYC 582/ 582L	Psychodynamic Therapy Laboratory	3.0
PSYC 583/ 583L	Phenomenological Therapy Laboratory	3.0
PSYC 584/ 584L	Group Psychotherapy/Laboratory	3.0
Totals		11.0-12.0

**Wholeness**

PSYC 526	Ethics and Legal Issues in Psychology	3.0
PSYC 554	Health Psychology	4.0
PSYC 567	Human Diversity	3.0
RELR ____	Religion elective (500 or 600 level)	3.0
RELT ____	Religion elective (500 or 600 level)	3.0
RELE 534	Ethical Issues in Public Health (applied to both programs)	3.0
Totals		19.0

**Clinical practica**

PSYC 781	Internal Practicum	2.0, 2.0, 2.0, 2.0
PSYC 782	External Practicum	4.0
PSYC 783	External Practicum II	4.0
PSYC 784	External Practicum III	4.0
PSYC 785	External Practicum IV	4.0
PSYC 786 or HPRO 704	External Practicum V Internship	4.0
PSYC 787 or HPRO 704	External Practicum VI Internship	4.0
PSYC 798	Pre-Internship	4.0, 4.0, 4.0, 4.0
PSYC 799	Internship	4.0
PSYC 799L	Internship hours (2000 in blocks of 500)	40.0
Totals		52.0

**Electives**

PSYC 566	Cross-cultural Psychology	4.0
PSYC 676	Geropsychology (California licensure)	1.0
PSYC 684	Human Sexuality (California licensure)	1.0
PSYC 685	Drug Addiction/Treatment (California licensure)	2.0
PSYC 686	Elder, Partner, Child Abuse (California licensure)	2.0
PSYC ____	Other electives as required	1.0
Totals		11.0

**Psychology – professional concentration**

PSYC 681	Clinical Supervision	2.0
PSYC 683	Management, Consultation, Education	1.0
PSYC 681L	Clinical Supervision and Consultation Laboratory	1.0
PSYC ____	Health Psychology Electives	12.0
Totals		16.0
<b>Overall Totals</b>		<b>240.0</b>

**PSYCHOLOGY—ST***with***BIOETHICS—SR****PSY.D. OR PH.D./M.A.**(See program in Bioethics *with* Psychology.)**PSYCHOLOGY, CLINICAL—ST***with***PREVENTIVE CARE—PH****PSY.D./M.P.H. OR DR. P.H.**(See program in Preventive Care *with* Psychology, Clinical.)**SOCIAL POLICY AND SOCIAL RESEARCH—ST***with***BIOETHICS—SR****PH.D./M.A.**(See program in Bioethics *with* Social Policy and Social Research.)**SOCIAL POLICY AND SOCIAL RESEARCH—ST***with***SOCIAL WORK—ST****M.S.W./PH.D.**(See program in Social Work *with* Social Policy and Social Research.)**SOCIAL WORK—ST***with***CRIMINAL JUSTICE—ST****M.S.W./M.S.**(See program in Criminal Justice *with* Social Work.)**SOCIAL WORK—ST***with***SOCIAL POLICY AND SOCIAL RESEARCH—ST****M.S.W./PH.D.**

BEVERLY J. BUCKLES, Program Coordinator

KIMBERLY FREEMAN, Program Coordinator

**Purpose of the program**

The combined degrees M.S.W./Ph.D. program at Loma Linda University provides students with the opportunity to learn the professional skills of social work simultaneously with advanced theory and research study. The combined degrees program makes it possible for a more efficient completion of two graduate degrees for students with strong interests in social policy, social research, and social work practice. Students who complete this combined degrees program will be prepared to make significant contributions to the field of social policy and social work education. Graduates will be able to provide

leadership to social work practice and social policy areas. Participants in the combined degrees program will utilize the important resource networks within the University and those affiliated organizations working on solutions to significant social problems.

### **Course requirements**

Students admitted to the M.S.W. degree program may subsequently apply to the Ph.D. degree program and be admitted to the combined degrees program. Students should refer to the M.S.W. and Ph.D. degree program descriptions for information about the admission requirements of each program. Students admitted to the combined degrees program must meet all of the requirements of each of the participating programs. Students should refer to the M.S.W. and Ph.D. degree curricula for a detailed listing of requirements. Students can also obtain an outline of the combined degrees program from the program coordinator for the Ph.D. degree in social policy and social research.

# IV

## THE COURSES

**COURSE PREFIXES**

AHCJ	Allied Health—Conjoint	HPRO	Health Promotion and Education
ANAT	Anatomy	HUMN	Humanities
ANES	Anesthesiology	IBGS	Integrated Biomedical Graduate Studies
ANTH	Anthropology	IDPC	International Dentist Program—Clinics
ARTA	Art Appreciation and History	IDPG	International Dentist Program—General
BCHM	Biochemistry	IDPO	International Dentist Program—Oral Pathology
BIOL	Biology	IDPP	International Dentist Program—Periodontics and Pediatric Dentistry
CHIN	Chinese	IDPR	International Dentist Program—Restorative
CHLS	Child Life Specialist	IMPD	Implant Dentistry
CLSC	Cytotechnology	MDCJ	Medicine—Conjoint
CLSM	Clinical Laboratory Science	MEDN	Medicine
CMBL	Cell and Molecular Biology	MFAM	Marriage and Family
CMSD	Communication Sciences and Disorders	MFTH	Marital and Family Therapy
COMM	Communication	MICR	Microbiology
COMP	Composition	MNES	Medical Education Services
COUN	Counseling	MUHL	Music History and Literature
CRMJ	Criminal Justice	NEUR	Neurology
CSWK	Clinical Social Work	NEUS	Neurosurgery
DERM	Dermatology	NRSB	Nursing Bridge
DNES	Dental Educational Services	NRSG	Nursing
DNHY	Dental Hygiene	NSCI	Natural Sciences
DTCH	Dietetic Technology	NUTR	Nutrition
DTCS	Dietetics	OCTA	Occupational Therapy Assistant
EMDN	Emergency Medicine	OCTH	Occupational Therapy
EMMC	Emergency Medical Care	ODRP	Oral Diagnosis, Radiology, and Pathology
ENDN	Endodontics	OMFS	Oral and Maxillofacial Surgery
ENGL	English	OPHM	Ophthalmology
ENSL	English as a Second Language	ORDN	Orthodontics
ENVH	Environmental Health	ORPA	Oral Pathology
ENVS	Environmental Sciences	ORPR	Orthotics and Prosthetics
EPDM	Epidemiology	ORTH	Orthopaedic Surgery
ESSC	Earth System Science	OTOL	Otolaryngology
FMDN	Family Medicine	PAST	Physicians Assistant
FMST	Family Studies	PATH	Pathology
GEOG	Geology	PEAC	Physical Education Activity
GERO	Gerontology	PEDN	Pediatric Dentistry
GLBH	Global Health	PEDS	Pediatrics
GRDN	Graduate Dentistry		
GSCJ	Graduate Studies—Conjoint		
GYOB	Gynecology and Obstetrics		
HADM	Health Administration		
HCAD	Health Care Administration		
HLCS	Coding Specialist		
HLIN	Health Information Administration		

PERI	Periodontics	RTNM	Radiation Technology—Nuclear Medicine
PHCJ	Public Health—Conjoint	RTRA	Radiation Technology—Radiologist Assistant
PHIL	Philosophy	RTRS	Radiation Technology—Radiation Sciences
PHRM	Pharmacology	RTSI	Radiation Technology—Special Imaging
PHSL	Physiology	RTTH	Radiation Technology—Radiation Therapy
PHTH	Physical Therapy	RXDI	Pharmacy Practice—Drug Information
PMPT	Physical Therapy—Progression Master's	RXEE	Pharmacy Practice—Experiential Education
PROS	Prosthodontics	RXPC	Pharmacy Practice—Pharmaceutical Care
PRVM	Preventive Medicine	RXPS	Pharmaceutical Sciences
PSYC	Psychology	RXRX	Pharmacy Conjoint
PSYT	Psychiatry	RXSA	Pharmacy—Social and Administrative Sciences
PTAS	Physical Therapist Assistant	RXTH	Pharmacy Practice—Therapeutics
PUAD	Public Administration	SDCJ	School of Dentistry—Conjoint
RADS	Radiology	SDCL	School of Dentistry—Clinical
RDMN	Radiation Medicine	SOCI	Sociology
RDNG	Reading	SOWK	Social Work
RELE	Religion—Ethical Studies	SPAN	Spanish
RELG	Religion—General Studies	SPOL	Social Policy
RELR	Religion—Relational Studies	STAT	Statistics
RELT	Religion—Theological Studies	STCJ	Science and Technology—Conjoint
RESC	Rehabilitation Science	SURG	Surgery
RESD	Restorative Dentistry	UROL	Urology
RSTH	Respiratory Therapy	WRIT	Writing
RTCH	Radiation Technology		
RTII	Radiation Technology—Imaging Informatics		
RTMD	Radiation Technology—Medical Dosimetry		
RTMR	Radiation Technology—Medical Radiography		
RTMS	Radiation Technology—Medical Sonography		

## ALLIED HEALTH—CONJOINT

### AHCJ 101 Introductory Chemistry (4)

Basic survey of matter, energy, and measurement. Includes atoms and molecules; chemical bonding; chemical reactions and reaction rates; gases, liquids, and solids; solutions and colloids; acids and bases; nuclear chemistry.

Prerequisite: High school algebra or equivalent.

### AHCJ 102 Introductory Organic Chemistry (4)

Introduces the study of compounds that contain carbon. Covers alkenes, alkynes, and aromatic compounds; alcohols, phenols, ethers, and halides; aldehydes and ketones; carboxylic acids and esters; amines and amides.

Prerequisite: AHCJ 101; or equivalent.

### AHCJ 103 Introductory Biochemistry (4)

Introduces the chemistry of living systems, including carbohydrates, lipids, proteins, and nucleic acids; enzyme chemistry; bioenergetics; carbohydrate, lipid, and protein metabolism; biosynthetic pathways; protein synthesis; chemical transmitters and immunoglobulins; body fluids, nutrition, and digestion.

Prerequisite: AHCJ 101, AHCJ 102; or equivalent.

### AHCJ 105 Procedures in Phlebotomy (5)

Designed for individuals who are interested in laboratory medicine and would like to become certified phlebotomists. Includes instruction in medical terminology, laboratory safety, basic anatomy and physiology, specimen collection techniques, hazards/complications, quality assurance methods, and medicolegal issues of phlebotomy. Clinical rotation arranged at Loma Linda University Medical Center and affiliates.

Corequisite: Current CPR certificate.

### AHCJ 110 Fundamentals of College Algebra (4)

Encompasses the essential fundamentals of algebra. Topics include but are not limited to signed numbers, solving equations and inequalities, properties of exponents, polynomials, logarithmic functions,

sequences and series, and problem-solving techniques with practical application. Provides knowledge necessary for application to the sciences.

### AHCJ 111 Introductory Physics (4)

Focuses on mechanics and properties of matter and heat; emphasizes concepts. Per week: lecture 3 hours, laboratory 3 hours. Designed for students entering programs in the allied health sciences and nursing.

### AHCJ 112 Introductory Physics (4)

Focuses on sound, light, electricity and magnetism, atomic and nuclear physics, and relativity; emphasizes concepts. Per week: lecture 3 hours, laboratory 3 hours. Designed for students entering programs in the allied health sciences and nursing.

### AHCJ 177 Professional Literacy for Nonnative Readers (3)

Emphasizes English literacy for students whose official language of instruction is other than English. Focuses on reading, analyzing, and responding to articles relevant to students' professional studies.

Prerequisite: AHCJ 129.

### AHCJ 205 Essentials of Microbiology (4)

Integrates lecture and laboratory. Introduces basic concepts of microbiology, including functional anatomy, metabolism, and genetics of microorganisms. Examines host-parasite relationships in the context of pathogenesis and disease. Includes a survey of human microbial diseases, with emphasis on communicable disease and public health applications. Cannot be used as a prerequisite for admission to nursing and certain allied health programs.

### AHCJ 214 Fundamentals of Computer Systems (2)

Concepts of information systems—including systems modeling, hardware, software, systems development, network topologies, and systems lifecycle. Also includes a focus on building and repair of systems, and general maintenance and understanding of system components.

### AHCJ 215 Microsoft Office Excel Applications (2)

Instruction in Microsoft Excel, including basic-to-advanced features. Emphasizes data presentation. Uses case studies for assessment. Online instruction.

Prerequisite: AHCJ 426; or acceptable substitute.

### AHCJ 225 History of Radiation and Imaging 1890-1940 (3)

The history of imaging and radiation from 1890 to 1940. Develops greater understanding of the evolution of imaging practices and the use of radiation in society from 1890 to 1940. Advances understanding through factual knowledge and appropriate analytical skills. Highlights the nature of change in imaging and the use of radiation for medical, commercial, industrial, and military uses. Builds on an understanding of cultural, institutional, and technological precedents that, along with geography, set the stage for advancements in technology and changes of ideologies.

### AHCJ 226 History of Radiation and Imaging 1940-Present Day (3)

The history of imaging and radiation from 1940 to the present. Develops a greater understanding of the evolution of imaging practices and the use of radiation in society from 1940 to the present. Advances understanding through factual knowledge and appropriate analytical skills. Highlights the nature of change in imaging and the use of radiation for medical, commercial, industrial, and military uses. Builds on an understanding of cultural, institutional, and technological precedents that, along with geography, set the stage for advancements in technology and changes of ideologies.

### AHCJ 235 Essentials of Human Anatomy and Physiology (4)

Studies the structure and function of the human body, including organ systems. Prerequisite to many certificate and associate degree programs, e.g., coding specialist/certificate, occupational therapy assistant/A.A. Lecture and laboratory required.

### AHCJ 235L Essentials of Human Anatomy and Physiology Laboratory (1)

Studies the structure and function of the human body, including organ systems. Prerequisite to many certificate and associate degree programs, e.g., coding specialist/certificate, occupational therapy assistant/A.A. Lecture and laboratory required.

### AHCJ 241 Microbiology (2.5)

Designed for students in the health sciences. History, classification, morphology, growth, control, transmission, and pathology of selected bacteria, viruses, fungi, rickettsia, and parasites. Host defenses against microbial pathogens, including specific and nonspecific immunity. Per week: lecture 30 hours, laboratory 30 hours. Course covers two quarters. Grade given upon completion of the 241, 242 sequence.

Prerequisite: A college-level chemistry course.

### AHCJ 242 Microbiology (2.5)

Designed for students in the health sciences. History, classification, morphology, growth, control, transmission, and pathology of selected bacteria, viruses, fungi, rickettsia, and parasites. Host defenses against microbial pathogens, including specific and nonspecific immunity. Per week: lecture 30 hours, laboratory 30 hours. Course covers two quarters. Grade given upon completion of 241, 242 sequence.

Prerequisite: AHCJ 241.

### AHCJ 250 Human Anatomy and Physiology I (5)

A 5-unit course covering structure and function of: cells; primary tissues; the integument; osseous tissue and the skeletal system; muscle tissues and skeletal muscles; as well as an introduction to the nervous system. For students entering two- and four-year health professional programs such as physical therapy, occupational therapy, cardiopulmonary sciences, communication sciences and disorders, radiation technology, nursing, and other programs with an anatomy and physiology prerequisite.

### AHCJ 251 Human Anatomy and Physiology (5)

A 5-unit course covering the organization and functions of the central and peripheral nervous systems

and the visceral organ systems. For students entering two- and four-year health professional programs—such as physical therapy, occupational therapy, cardiopulmonary sciences, communication sciences and disorders, radiation technology, nursing, and other programs with an anatomy and physiology prerequisite.

Prerequisite: AHCJ 250, or equivalent

#### AHCJ 252 Human Anatomy and Physiology (4)

Function of enzymes, cell respiration and metabolism, secretion and action of hormones, and circulatory and respiratory systems. Lecture and laboratory.

Prerequisite: AHCJ 251.

#### AHCJ 305 Infectious Disease and the Health Care Provider (1)

Current issues related to infectious disease, with special emphasis on principles of epidemiology and the etiology of HIV/AIDS. Discusses disease pathology and modes of transmission compared with hepatitis, tuberculosis, and influenza. Development of ethical response to psychosocial, economic, and legal concerns. Strategies and programs for education, prevention, and identification of resources. Impact on the health care worker; risk factors; and precautions for blood-borne pathogens, HIV, hepatitis, and tuberculosis.

#### AHCJ 308 Professional Communications (1-2)

Forms of written and verbal communication routinely required in the performance of the health care manager's duties. Projects include memos, letters, confidential FAX cover design, short reports, meeting notices, minutes, and creation of agendas.

#### AHCJ 311 Medical Terminology (2)

Language of medicine, including word construction, word analysis, definitions, and the use of terms related to medical science. Course organized by body systems.

#### AHCJ 314 Managing Stress (3)

Comprehensively approaches stress management by focusing on the integration, balance, and harmony/unity of mind, body, spirit, and emotions. The whole person approach provides greater levels of mental, emotional, physical, and spiritual well-being by

emphasizing the importance of mind-body-spirit unity. Examines the balance among the research of health psychology, the psychology of lifestyle, the science of psychoneuroimmunology, and holistic healing. Provides tools needed to identify and manage stress, as well as to achieve health and balance.

#### AHCJ 315 Psychosocial Aspects of Health Care (3)

Based on the belief that an understanding of psychosocial aspects of health care optimizes therapeutic outcomes. Emphasizes the importance of the wholeness human factor in clinical competence and professional excellence. Comprehensively addresses a variety of psychosocial topics involving health professionals/health care providers affected by pathology, impairment, functional limitation, and/or disability. Realistically and practically addresses real issues in today's health care, acknowledging time as well as other constraints; and describes recommended roles and intervention strategies for health care providers. Applies to all health care professions, such as nursing, physical and occupational therapy, speech-language pathology, physician assistant and medicine, respiratory therapy, social work, and medical laboratory science. Additional project required for fourth unit.

#### AHCJ 320 ADL and Assistive Devices (3)

Introduces the implied adaptations necessary for an individual with disabilities to lead an effective life. Promotes an integrative perspective on all the biomechanical engineering that is necessary for activities of daily living and raises awareness of how orthotic and prosthetic devices interface in their purpose. Teaches the basic medical, custom seating principles.

#### AHCJ 321 Dynamics of Communication (2)

Surveys communication skills, including group dynamics, self-awareness, interpersonal relationships, learning styles, problem solving, listening skills, and body language. Systematic observation, patient-interviewing techniques, and objective medical documentation. Problem identification and goal setting in a multiperson health care-delivery system.

### AHCJ 323 Economics and Business Management (3)

Establishes principles of economics, financial management, and law as they apply to health care settings, including: starting a new service, reimbursement, capital and operational budgeting, reading financial statements, and cost-saving measures.

### AHCJ 324 Psychosocial Models and Interventions (2)

Major models of stress, crisis, and psychological trauma; and how they relate to health care providers. Psychosocial reactions and responses of populations, individuals, and care providers to societal disruption and trauma, medical emergencies, and death and dying. Applies principles for suicide intervention, critical incident debriefings, and death notification. Roles of psychiatrists, psychologists, social workers, family therapists, and chaplains. Methods of providing temporary, adequate psychological care for individuals in psychosocial crisis.

### AHCJ 325 U. S. Health Care Delivery System (2)

Overview of U.S. health care delivery, including the history of health care institutions, accrediting bodies, organizations that provide health care; regulations and standards, reimbursement methods used, and the professionals who provide services. Presents course from a systems perspective, including research into the future of health care.

### AHCJ 326 Fundamentals of Health Care (2)

Foundation of basic patient-care information and skills for allied health professionals entering the clinical environment. Integrated basic care knowledge and skills required by each profession.

### AHCJ 328 Wholeness Portfolio I (1)

Students develop an introductory portfolio that demonstrates progression toward the student learning outcomes set by Loma Linda University—including wholeness, Christ-centered values, commitment to discovery and lifelong learning, effective communication, embracing and serving a diverse world, and collaboration.

### AHCJ 329 Organic Chemistry with Laboratory (5)

Studies carbon chemistry as related to organic compounds found in the human organism.

### AHCJ 331 Human Resource Management (3)

Theory and practice of the management of people at work. Organizational behavior concepts and the problems of employee procurement, training, and motivation. Job evaluation, wage administration, employee benefits, and negotiating with labor unions. Preparation for both managing people and directing a department in a complex organization.

### AHCJ 334 Biochemistry (5)

Chemistry and metabolism of carbohydrates, lipids, nucleic acids, and proteins. Chemical basis of life processes. Lecture and laboratory demonstrations to support student competency.

### AHCJ 336 Rehabilitation Specialty Workshops (2, 3)

Introduces advanced clinical models and techniques of rehabilitation that Loma Linda University's physical and occupational therapy programs have to offer, e.g., community model of OT, electrotherapy, hydrotherapy, hippotherapy, etc. Topics selected to meet the needs and interests of student groups.

### AHCJ 351 Statistics for the Health Professions (3)

Fundamental procedures in collecting, summarizing, analyzing, presenting, and interpreting data. Measures of central tendency and variation, probability, binomial and normal distribution, hypothesis testing and confidence intervals, t-tests, chi-square, correlation, and regression. Introduction to SPSS statistical package for computer data analysis.

### AHCJ 362 Anatomy (3)

Gross anatomy of the musculoskeletal system—emphasizing spatial orientation, joint structure, skeletal muscle origins, insertions, actions, nerves, and blood supply. A cadaver-based course.

**AHCJ 375 Physiology (1)**

Physiology of the human body—including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

**AHCJ 402 Pathology I (4)**

Fundamental mechanisms of disease, including cell injury; inflammation, repair, regeneration, and fibrosis; and vascular, cardiac, respiratory, gastrointestinal, hepatobiliary, urinary, reproductive, endocrine, and integumentary pathologies.

**AHCJ 403 Pathology II (3, 4)**

Fundamental mechanisms of disease, including the central and peripheral nervous systems, bone and joint, skeletal muscle, developmental, genetic, infectious, and parasitic pathologies; and neoplasia. Fourth unit requires two autopsy viewings and written report.

Prerequisite: AHCJ 402.

**AHCJ 404 Pharmacology (1, 2)**

Introduces pharmacology, including study of pharmacokinetics, pharmacodynamics, and actions of pharmaceuticals commonly encountered in various allied health professions. Different sections register for 1 or 2 units. Identical topics for both sections, with greater depth and detail for 2-unit course.

**AHCJ 405 Dynamics of Learning and Teaching (2)**

Examines the theories of learning applied to the teaching process. Evaluates current research and methods of instruction.

**AHCJ 407 Financial Management (2)**

Financial aspects of health care involving prospective reimbursement system, analysis of various health care-reimbursement schemes, and hospital financial disbursements. Budget-variance analysis, analysis of cost components, operating statements, and productivity related to a department budget. Special projects may be assigned as needed. Per week: lecture 2 hours.

**AHCJ 408 Health Care Management (4)**

Management theory: planning, organizing, directing, and controlling (including budgetary controls). Department productivity and theories of work simplification. Preparation of resumes, interviewing skills, professional attitudes, group theory, and group dynamics. Students spend the last two-to-three weeks doing special projects designed and supervised by their departments. (Department of Nutrition and Dietetics students register for a 2-unit practicum in conjunction with this course.)

**AHCJ 410 Pathology for Health Professionals (3)**

Studies the fundamental mechanisms of pathology pertaining to the neuromusculoskeletal systems. Focuses on the functional consequences of human diseases.

**AHCJ 412 Anatomy (9)**

Gross anatomy of the musculoskeletal system, emphasizing spatial orientation, joint structure, skeletal muscle origins, insertions, actions, nerve, and blood supply. A cadaver-based course.

**AHCJ 415 Educational Psychology for Health Professionals (3)**

Psychological factors related to learning processes in professional and higher education. Emphasizes the role of communication skills in learning settings, gender influences on learning, objectives setting and course design, stimulation of higher-level thinking, motivation, and retention.

Prerequisite: AHCJ 409.

**AHCJ 417 Lifestyle Health and the Science of Wellness (3)**

Explores the concept of lifestyle health and wellness, focusing on the research literature. Students explore the interconnected issues of diet, exercise, affect, attitude, and other lifestyle factors; as well as the issues of how to assess lifestyle factors that appear to work but that are not accompanied by research. Uses the wholeness portal to pursue various literatures and programs related to lifestyle health. Major paper required.

**AHCJ 418 Physiology I (4)**

Physiology of the human body, including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

**AHCJ 421 Psychology of Physical Disability (2)**

Psychological reactions to illness or disability. Methods of dealing with these reactions considered with reference to the clinical situation. Seminar approach to professional responsibilities for health care.

**AHCJ 422 History of Disability (3)**

Reviews the power issues relating to disabilities in the history of the United States. Delineates the patient's rights from a historical context. Focuses on the contents and implementation of Americans with Disabilities Act (ADA). Outlines what role the ADA plays in the everyday practice of rehabilitation sciences.

**AHCJ 426 Introduction to Computer Applications (2)**

Hands-on instruction in Word, Excel, and PowerPoint. Lectures, laboratory assignments, quizzes, projects, and a practical examination. (Course not taught every quarter.)

**AHCJ 432 Database Management (3)**

Theories and steps of database development using Microsoft Access. Topics include but are not limited to: relationships, form building, advanced queries, reporting, and macros. Requires a project creating a health information database with appropriate indexing, privacy, and security settings.

**AHCJ 433 Database Management II (2)**

Continuation of AHCJ 432, with the development of an advanced database in Microsoft Access. Includes the application of drop-down menus, reports, security features, and macros.

Prerequisite: AHCJ 432; or consent of instructor.

**AHCJ 444 Neuroanatomy II (2)**

Studies neuroanatomical systems, structures, and pathways— with application to lesions of the human nervous system.

**AHCJ 445 Biostatistics (3)**

Fundamental procedures of analyzing and interpreting data. Sampling, probability, binomial distribution, normal distribution, sampling distributions and standard error, confidence intervals, hypothesis testing, t-tests, chi-square, correlation, and regression. Introduces one- and two-way ANOVA and nonparametric statistics. Interprets computer output and use of the SPSS statistical package for data analysis. Determines validity and reliability of research instruments.

**AHCJ 448 Human Resource Management (3)**

Human resource management from the department head point of view. Assesses the employment process from justification of a position until the position is filled and productive. Emphasizes position evaluation and development of the job description. Reviews labor unions from a management point of view. Wage analysis and employee benefits.

**AHCJ 459 Current Issues: National and Global Perspectives (3)**

Reviews and discusses concerns relative to the health field, i.e., legislation, regulations, and professional organizations. Project or paper required.

**AHCJ 461 Research Methods (2, 3)**

Introduces the scientific method in research. Focuses on the major steps of the research process as they relate to research report evaluation, proposal writing, literature review, development of conceptual framework, identification of variables, statement of hypotheses, research design, and analysis and presentation of data. Preliminary research proposal required for third unit.

Prerequisite: AHCJ 351.

**AHCJ 464 Group Process and Dynamics (3)**

Introduces principles and techniques of group theories, processes, and dynamics, as applied to the health-professional setting. Concepts include group functions, roles, structures, and characteristics; group membership, norms, dynamics, and relations. Theoretical perspectives on group development, dynamics, and conflicts. Practical issues, including

educational applications, negotiation, observation, and diagnosis. Leadership issues, facilitation, expedition, and termination. Simulation exercises, active learning, and flexible choices of study and application.

#### AHCJ 465 Seminars in Leadership (2)

Prepares graduates for entry into the new work requirements. Through observation and participation, students explore the responsibility of today's employee to successfully integrate customer and community service and social responsibility.

#### AHCJ 471 Statistics and Research for Health Professionals I (3)

Presents statistical methods relative to research design for health professionals, with introduction to SPSS statistical package for computer data analysis. Discusses philosophical approaches to scientific inquiry, range of research designs, roles of variables, and ethics.

#### AHCJ 472 Statistics and Research for Health Professionals II (3)

Advanced conceptual frameworks, data analyses, and techniques in quantitative and qualitative research. Emphasizes process for obtaining and using evidence-based research.

Prerequisite: AHCJ 471.

#### AHCJ 475 Health Care Research and Statistics (4)

Statistical methods presented in the context of health care research. Rationale for research questions, definition of populations, roles of variables, reliability and validity of research tools, common research designs, internal and external validity of research designs. Descriptive statistics, confidence interval, hypothesis testing concepts, t-tests, chi-square tests, correlation and regression. Interpretation of computer output. Evaluation of the health care literature.

#### AHCJ 485 Technology in Education (3)

Introduces instructional technologies and their applications in education, including computer-generated media, Internet resources, chat rooms, Web courses, two-way audio, videos, desktop conferencing, and teleconferencing.

#### AHCJ 493 Senior Portfolio I (3)

Allows students to progress toward building competence in SAHP and program outcomes (including diversity) for graduates.

#### AHCJ 494 Senior Portfolio II (3)

Building on Portfolio I, students synthesize their learning and demonstrate their progress in building toward SAHP and program outcomes (including diversity), and beyond.

#### AHCJ 496 Special Topics in Allied Health Studies (1-4)

Lecture and discussion on a current topic in allied health studies. May be repeated for a maximum of 4 units applicable to degree program.

#### AHCJ 497 Advanced Clinical Experience (0)

Advanced clinical experience in selected areas of professional practice.

#### AHCJ 498 Wholeness Portfolio II (1)

Students continue developing a portfolio that illustrates the potential graduate's ability to meet the student learning outcomes set by Loma Linda University—including wholeness, Christ-centered values, commitment to discovery and lifelong learning, effective communication, embracing and serving a diverse world, and collaboration.

#### AHCJ 499 Directed Study (1-4)

Individual arrangements for students to study under the guidance of a program faculty member. May include readings, literature review, or other special or research projects. Minimum of thirty hours required for each unit of credit. Laboratory may be required in addition to class time. A maximum of 4 units applicable to any degree program.

#### AHCJ 505 Educational Psychology for Health Professionals (2, 3)

Studies psychological factors that relate to the learning process in professional and higher education. Particularly emphasizes the role of communication skills in learning settings, gender influences on learning,

objective setting and course design, stimulating higher-level thinking, motivation, and retention. Major focus on applications to health professional clinical setting.

#### AHCJ 506 Educational Evaluation and Clinical Assessment (3)

Introduces principles and techniques of designing evaluation activities and tests for measuring classroom learning and instructional products. Includes criteria-referenced approaches, formative and summative instruments, critical incident observations, portfolio assessment, and other measurement concepts.

#### AHCJ 507 Pharmacology in Rehabilitation (3)

Principles of pharmacology as related to diagnosis, prevention, and treatment of disease, including a presentation of the pharmacology and therapeutic value of drugs used in rehabilitation medicine. Related topics include pharmacokinetics, pharmacodynamics, adverse effects, drug interactions, and drug toxicity—with special consideration given to pediatric and geriatric pharmacology.

#### AHCJ 508 Current Issues in Basic Science (3)

Studies the current issues in basic science as related to physical therapy. Topics may include current advances in biomechanics, cell and molecular biology, tissue engineering and transplants, pharmacology, and presentation of basic science research. Lecture and discussions of current literature.

#### AHCJ 509 Teaching and Learning Styles (3)

Explores theories and styles of learning and personality factors that relate to learning. Implications of effective intellectual, emotional, and social functioning included within the context of structuring education for the adult learner. Includes analysis of the teaching process—from the setting of objectives, selection of content, and design of classroom and clinical teaching strategies (with particular emphasis on alternatives to lecturing) to assessment and evaluation.

#### AHCJ 510 Human Gross Anatomy (9)

Gross anatomy of the musculoskeletal system, with emphasis on spatial orientation, joint structure, skeletal muscle origins, insertions, actions, nerves, and blood supply. A cadaver-based course.

#### AHCJ 511 Biostatistics I (3)

Fundamental procedures of collecting, summarizing, presenting, analyzing, and interpreting data. Sampling, measures of central tendency and variation, probability, binomial distribution, normal distribution, sampling distributions and standard error, confidence intervals, hypothesis testing, t-tests, chi-square, correlation, and regression. Introduces computer analysis for solution of statistical problems.

#### AHCJ 512 Biostatistics II (3)

Introduces analysis of data using ANOVA (one-way, two-way, and repeated measures) with multiple comparisons; multiple correlation and regression; and nonparametric statistics. Interprets computer output and use of the SPSS statistical package for data analysis. Determines validity and reliability of research instruments.

#### AHCJ 513 Biochemistry of Muscle and Muscle Energetics (3)

Surveys the biochemistry and metabolism of muscle during exercise and at rest. Includes muscle biochemistry, glycolysis, gluconeogenesis, beta oxidation, and protein metabolism. Emphasizes vitamins and nutrients as cofactors in cells. Focuses on physical therapy and the body. Covers any needed prerequisites in organic and cellular chemistry.

#### AHCJ 514 Kinesiology: Motor Control and Learning (3)

Advanced kinesiology, including movement science dealing with behavioral basis of motor control and motor learning from an information-processing perspective.

#### AHCJ 515 Curriculum Development in Higher Education (3)

Examines principles of curriculum development. Selection, organization, and evaluation of learning

experiences. Examines the nature, place, and interrelationship of general and specialized education in higher education.

#### AHCJ 516 Clinical Imaging (3)

Studies the etiology, pathogenesis, and clinical manifestations of selected bone and joint pathologies. Discusses current literature for selected pathologies.

#### AHCJ 517 Lifestyle Health and Wellness (3)

Explores the concept of lifestyle health and wellness, focusing on the research literature. Students explore the interconnected issues of diet, exercise, affect, attitude, and other lifestyle factors; as well as the issues of how to assess lifestyle factors that appear to work but that are not accompanied by research. Uses the wholeness portal to pursue various literatures and programs related to lifestyle health. Major paper required.

#### AHCJ 518 Advanced Physiology I: Neurobiology (3)

Surveys cell and whole-body physiology. Includes physiology of the neuron and nerve conduction, molecular transport at the cellular level, cardiovascular and renal physiology, gastrointestinal physiology, endocrinology, and neurophysiology. Emphasizes muscles and neurophysiology as they relate to the cardiovascular, respiratory, and endocrine systems.

#### AHCJ 519 Graduate Wholeness Portfolio (1)

Students develop a portfolio that demonstrates the graduate student's progression toward the student learning outcomes set by Loma Linda University—including wholeness, Christ-centered values, commitment to discovery and lifelong learning, effective communication, embracing and serving a diverse world, and collaboration.

#### AHCJ 520 Global and Community Outreach (0)

Student develops a capstone global or community portfolio to better understand the importance of embracing and serving a diverse world. Emphasizes the promotion of outreach through education, motivation, and personal involvement in addition to the

development of global and community perspectives as they relate to service. Student participates in a practical local or global outreach experience.

#### AHCJ 524 Pharmacology (2)

Introduces pharmacology, including study of pharmacokinetics, pharmacodynamics, and actions of pharmaceuticals commonly encountered in various allied health professions.

#### AHCJ 526 Computer Applications II (3)

Hands-on instruction in Word, Excel, and PowerPoint. Class activities include hands-on lectures, laboratory assignments, quizzes, projects, and a final examination. A special Web page project required.

#### AHCJ 527 Medical Screening for Rehabilitation Professionals (3)

Screening for nonneuromusculoskeletal origins for the musculoskeletal complaints of patients who commonly seek rehabilitation. Particularly emphasizes components of the history and physical examination that suggest medical pathology requiring referral and/or physician consultation. Knowledge and skills related to screening for medical pathology in patients with musculoskeletal complaints of the lumbar spine, pelvis, lower extremities, thoracic spine, shoulder girdle, and upper extremities.

#### AHCJ 528 Lifestyle Health and Wholeness (3-4)

Explores current lifestyle health and diseases, including: cardiovascular, metabolic, communicable, and nutritional. Explores concepts regarding risk factors, screening approaches, and risk reduction, focusing on their impact on specific health parameters. Addresses the universal problem of personal health and the influence of lifestyle on health and lifestyle disease. For the beginner as well as for the health professional who wishes to attain or maintain good whole person health and freedom from disease by such natural means as minimizing the use of prescription drugs, food supplements, and diet fads. Presents specific lifestyle advice to attain these goals. Addresses disease prevention as well as treatment through whole person lifestyle, evidence-based measures. A whole person approach—mind, body, and spirit—with a biblical

perspective that explores the influence of the mind and the spirit/religiosity on lifestyle health. Additional project required for fourth unit.

#### AHCJ 534 Advanced Neurological Rehabilitation (3)

Studies in-depth the patient with spinal cord injury, including etiology, current treatment techniques in acute and outpatient settings, and principles of exercise physiology. Reviews research activities with regard to a cure for spinal cord injury, as well as the legal aspects of ADA and the individual with a spinal cord injury.

#### AHCJ 535 Advanced Physiology II: Exercise and Thermoregulation (3)

Focuses on energy sources utilized by the body for exercise, neural and mechanical structures of mechanisms that control body movements, environmental influences on exercise performance, the physiology of thermoregulation, and principles of aerobic and anaerobic exercise. Applies concepts and principles to normal and disabled human conditions.

#### AHCJ 536 Health Care Financial Management (3)

Focuses on understanding the finances of health care, including financial statements, reimbursement models of fee-for-service, capitation, managed care, and risk pools. Concepts of modeling and scenario planning, with emphasis on return on investment.

#### AHCJ 537 Organizational Structure and Behavior (3)

Understanding, predicting, and influencing human behavior in an organization. Provides students with a variety of theories, models, strategies, and experiences in organizational behavior through which managers can find their own solutions in specific situations.

#### AHCJ 538 Histology (2, 3)

Advanced histology of joint pathology and the associated changes in bone, cartilage, and other connective tissues. Paper required for third unit.

#### AHCJ 539 Technology and Health Care Organizations (3)

Explores the direct and indirect impacts of technology on health care systems. Examines technology in terms of its definition, limits, change factors, and diffusion at the personal, managerial, corporate, and governmental levels of health care.

#### AHCJ 540 Psychosocial Aspects of Health Care (3, 4)

Focuses on understanding the psychosocial aspects of health care in order to optimize therapeutic outcomes. Emphasizes the importance of the wholeness human factor in clinical competence and professional excellence. Comprehensively addresses a variety of psychosocial topics involving health professionals/health care providers affected by pathology, impairment, functional limitation, and/or disability. Addresses current health care issues, including time and other constraints; and recommends roles and intervention strategies for health care providers. Relevant to all health care professions, such as nursing, physical and occupational therapy, speech-language pathology, physicians assistant and medicine, respiratory therapy, social work, and medical laboratory science. Additional project required for fourth unit.

#### AHCJ 541 Managing Stress (3, 4)

Provides a comprehensive approach to stress management that focuses on the integration, balance, and harmony of mind, body, spirit, and emotions. Examines the balance among the research of health psychology, the psychology of lifestyle, the science of psychoneuroimmunology, and holistic healing. Provides tools needed to identify and manage stress, as well as to achieve health and balance. Additional project required for fourth unit.

#### AHCJ 542 Pathology I (4)

Fundamental mechanisms of disease, including cell injury; inflammation, repair, regeneration, and fibrosis; and vascular, cardiac, respiratory, gastrointestinal, hepatobiliary, urinary, reproductive, endocrine, and integumentary pathologies.

**AHCJ 543 Pathology II (3, 4)**

Fundamental mechanisms of disease, including the central and peripheral nervous systems, bone and joint, skeletal muscle, developmental, genetic, infectious, and parasitic pathologies; and neoplasia. Fourth unit requires two autopsy viewings and written report.

**AHCJ 544 Advanced Functional Neuroanatomy (3)**

Analyzes and applies neuroanatomy to lesions of the human nervous system; clinical significance of such lesions.

**AHCJ 545 Legal and Ethical Issues in the Health Professions (3)**

History and structure of federal and state governments, including torts, contracts, administrative law, criminal law, and reporting issues. Legal and ethical issues in patient confidentiality and release of patient information. The impact of technology on the collection and dissemination of patient information. Medical-legal liability issues, including corporate compliance.

**AHCJ 548 Human Resource Management in the Health Care Environment (3)**

Discusses human resource management issues from the viewpoint of the health care professional. Includes the legal foundation governing human resource management, as well as the impact that leadership has on the employee's quality of work, motivation, and performance management. Human resource planning and job analysis, recruitment and selection, employee pay and benefit plans, labor-management and collective bargaining. Opportunity for role playing and negotiation experiences. Paper required.

**AHCJ 549 Professional Responsibility in Allied Health Professions (3)**

Provides graduate students an advanced overview that combines aspects of substantive law and ethical guidelines in the profession. Focuses in part on handling problems that include the canons of ethics; duty to patients, the workplace, and the profession. Also covers legal aspects, such as conflicts of interest, solicitation, and professional discipline.

**AHCJ 550 Organizational Theory (3)**

Introduces students to the concepts needed to understand and predict the behavior of people in health care organizations today. Covers foundations of organizational structure, leadership, politics, and conflict management.

**AHCJ 551 Professional Systems in Management I (3)**

Administering the academic department: personnel selection, development, and evaluation; finance; team development; and leadership theories.

**AHCJ 552 Professional Systems in Management II (3)**

Administering the clinical setting, including assessing needs, implementing a business plan, and negotiating contracts; management philosophies.

**AHCJ 556 Administration in Higher Education (3)**

Leadership philosophy and styles of administrative leadership in higher education, with particular application to health professions educational programs. Includes personnel management; budgeting; contracting for clinical placement; group leadership in committees; faculty selection, development, and evaluation; strategic planning; and policy development.

**AHCJ 558 Stress and Health Behavior (3)**

Evaluates effects of stress on individuals, families, students, and health professionals in the educational setting. Analyzes biopsychological foundations, social systems, technological influences, life-development factors, and unique aspects of health professional education. Explains coping strategies—such as nutrition, exercise, humor, time management and organization, cognitive therapies, relaxation, and imagery.

**AHCJ 559 Health Communication in Rehabilitation Science (3)**

Provides a broad introduction to human communication in a health care context. Provider-client communication, provider communication and

education, intercultural health communication, alternative medicine, health ethics, and mass media health images.

#### AHCJ 560 Physiology (4)

Physiology of the human body, including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

#### AHCJ 561 Neuroscience I: Neuroanatomy (4)

Basic anatomy and function of the central, peripheral, and autonomic nervous systems and related structures. Gross anatomy of the brain and spinal cord. Functional consideration of cranial nerves, tracks, and nuclei of major systems. Lecture, slides, and laboratory with specimens.

#### AHCJ 562 Neuroscience II: Neurophysiology (3)

Detailed study of neuromuscular physiology.  
Prerequisite: AHCJ 418.

#### AHCJ 563 Neuroscience III: Clinical Neurology (2)

Systematic review of clinical disorders of the central and peripheral nervous systems, emphasizing sensorimotor sequelae of injury and disease.

#### AHCJ 564 Collaborative Learning in Higher Education (3)

Collaborative learning, theories of group-individual interaction, and the communication process. Educational orientation to the utilization of groups to enhance motivation, commitment, and learning in higher education.

#### AHCJ 565 Health Communication: Counseling Patients and Personnel (3)

Communication in health care, multiple applications of communication theory to health promotion, and essentials of professional communication in clinical teaching and leading groups of health professionals. Emphasizes counseling techniques, nondefensive communication, and increased communications awareness.

#### AHCJ 566 Theoretical Foundations of Leadership (3)

A web-based course that introduces students to the discipline of leadership. Focuses on the relevance of leadership through study of trait theory, situational leadership, transactional v. transformational leadership, leadership v. management, and leadership ethics. Students will reflect upon theoretical approaches, correlate those approaches with personal experience, and apply those approaches in the professional setting.

#### AHCJ 567 Personal Leadership (3)

A Web-based course that focuses on the discovery and growth of an individual's personal leadership style. Students reflect upon various leadership qualities at the personal level, complete the Life Styles Inventory (LSI-1), analyze data from the LSI-1, and discuss the recommendations for increased effectiveness.

#### AHCJ 569 Computers and Electronics for Clinicians (3)

Explains the roles of computers and electronics in a clinical setting. Equipment used in a classroom setting.

#### AHCJ 574 Behavioral Modification and Personal Change (3)

Explores and applies health behavior change models. Educational, psychosocial, and behavioral issues—with emphasis on leadership, decision making, group process, and persuasion.

#### AHCJ 575 Couples, Families, and Disabilities (3)

Examines not only the effects disabilities have on couples and family systems, but also what contributions family members are making to the rehabilitation process of disabled individuals. Looks at the discourse patterns taking place within a person with a disability; within the disabled person's family and social support system; and most importantly, within the context of the individual, the family, and the medical and rehabilitation providers. Addresses the issues of human sexuality, reproduction, and disability.

#### AHCJ 576 Basics of Marketing (3)

Provides an overview of the principles of developing a marketing strategy. Illustrates how marketing can

assist an organization in arriving at a competitive advantage; and in creating, capturing, and sustaining value in the eyes of the buyer.

#### AHCJ 578 Health Care Finance and Reimbursement (3)

Covers financial management in a health care setting, including: starting a new service, reimbursement, capital and operational budgeting, reading financial statements, and cost-saving measures.

#### AHCJ 579 Instructional Effectiveness (3)

Develops strategies for instructional effectiveness, evaluation, and assessment processes.

#### AHCJ 585 Technology in Education (3)

Introduces instructional technologies and their applications in education, including computer-generated media, Internet resources, chatrooms, Web courses, two-way audio, videos, desktop conferencing, and teleconferencing. (Course not taught every year.)

#### AHCJ 586 Curricula Planning in Health Sciences (3)

Applies curriculum-development theories and approaches to the health-science arena. Students develop a learning-centered curriculum.

#### AHCJ 588 Fundamentals of Human Resource Management (3)

Introduces students to the fundamentals of human resource management in the private, public, and nonprofit sectors. Covers employee development, legal compliance, and diversity management from a health care perspective.

#### AHCJ 589 Strategic Planning in Health Care Organizations (3)

Applies health care systems knowledge and skills to real-life assessment scenarios. Focuses on integrating systems components and analyzing their interactions in the health care industry. Emphasizes development of systems assessment techniques that facilitate understanding of the traits of a particular organization, such as its strengths, weaknesses, areas of growth, and changes needed. Students conduct their organizational

assessment, apply didactic content presented in other courses in the curriculum, and enhance their strategic planning skills.

#### AHCJ 591 Research I (3)

Introduces the scientific method in health science research. Focuses on the major steps of the research process: problem identification, literature review, conceptual framework, identification of variables, statement of hypothesis, experimental design, and analysis and presentation of data. Includes critical evaluation of research literature. Applies the research process to problems in related specific allied health fields. Develops a research proposal. Pilot tests a research proposal. Tests procedures and data forms. Implements the research proposal in a practice setting.

#### AHCJ 592 Research II (3)

Computer data analysis and preparation of a research report. Student prepares a poster appropriate for a professional meeting. Graphics, tables, and abstracts.

#### AHCJ 595 Research and Statistics Concepts and Methods: Intermediate (3)

An in-depth study of research designs, including completely randomized designs, randomized block designs, and statistical tests—such as ANOVA (one-way, repeated measures, factorial)—used to analyze data. Introduces multiple linear regression and correlation, as well as model-building techniques. Interprets multivariate analysis computer output and hands-on statistical computer experience. Introduces nonparametric statistical tests and their appropriate use. Measures and analyzes data for validity and reliability studies. Evaluates research literature that uses multivariate analysis for data analysis.

#### AHCJ 599 Directed Teaching (3)

Student develops a specialty module and presents it in a classroom or clinical setting. Includes course application, course syllabus, measuring instrument, student course evaluation, and lesson plans.

Prerequisite: Consent of instructor or of program director.

**AHCJ 600 Active Online Learning (3)**

Online course (organized around the AVLL standard for online instruction). Focuses on integration of active learning strategies, meaningful interactions, and stimulating learning experiences. Modules include: introduction, course organization, a safe learning environment, the relational basis of learning, integration of faith, appropriate assessment, and the needs of individual learners.

**AHCJ 601 Research-Proposal Writing (3)**

Student prepares a research proposal, including components essential for submission to the Institutional Review Board. Emphasizes writing skills in preparation of literature review, purpose, conceptual framework, proposed methodology, and statistical analysis. Includes ways in which proposal serves as the basis for a published article.

**AHCJ 605 Critical Analysis of Scientific Literature (2, 3)**

Evaluates the scientific literature, including critical evaluation of the rationale for the study; population inclusion/exclusion criteria; sampling and randomization techniques; sample size; appropriateness of the research design; choice of the data analysis; structure and content of tables and graphs; interpretation of statistical results; and applications to practice. Students evaluate research articles by answering questions posed by the instructor in a Web discussion board and virtual classroom. Students submit weekly evaluation papers for the articles discussed.

**AHCJ 696 Research Rotations (1-3)**

Involves students in the research and discovery culture of the University and clinical settings through observation of and/or participation in ongoing faculty research and grant projects, as well as graduate student research projects. Includes research data-collection equipment, mentorship, dissertation defenses, research-finding presentations, and/or pilot studies that students design for this practicum experience

**AHCJ 699 Directed Study (1-6)**

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include reading, literature review, and/or other special projects. Minimum of thirty hours required for each unit of credit.

**AHCJ 721 Wholeness Portfolio I (1)**

Students continue developing a portfolio that illustrates the potential graduate's ability to meet the student learning outcomes set by Loma Linda University—including wholeness, Christ-centered values, commitment to discovery and lifelong learning, effective communication, embracing and serving a diverse world, and collaboration.

**AHCJ 722 Wholeness Portfolio II (1)**

Students continue developing a portfolio that illustrates the potential graduate's ability to meet the student learning outcomes set by Loma Linda University—including wholeness, Christ-centered values, commitment to discovery and lifelong learning, effective communication, embracing and serving a diverse world, and collaboration.

**ANATOMY****ANAT 301 Head and Neck Anatomy, DH (4)**

Gross anatomy of the head and neck. Lecture and demonstration.

**ANAT 303 General and Oral Histology and Embryology (3)**

Microscopic study of fundamental cells, organs, tissues, and systems of the body. Analyzes in detail the pulp, periodontal tissues, alveolar process, oral mucosa, and calcified tissues of the tooth. Includes development of head and neck structures.

**ANAT 511 Human Anatomy for Dentists I (5)**

An in-depth study of the human anatomical sciences, including: gross anatomy, general and oral histology, embryology, and neuroscience as they relate to the dental profession. Designed for students in the first year

of dentistry, and for students in the dental track of the biomedical sciences postbaccalaureate certificate program.

#### ANAT 512 Human Anatomy for Dentists II (5)

An in-depth study of the human anatomical sciences, including gross anatomy, general and oral histology, embryology, and neuroscience as they relate to the dental profession. Designed for students in the first year of dentistry, and for students in the dental track of the biomedical sciences postbaccalaureate certificate program.

#### ANAT 513 Human Anatomy for Dentists III (5)

An in-depth study of the human anatomical sciences, including gross anatomy, general and oral histology, embryology, and neuroscience as they relate to the dental profession. Designed for students in the first year of dentistry, and for students in the dental track of the biomedical sciences postbaccalaureate certificate program.

#### ANAT 516 Neuroscience GS (6)

Integrated approach to the fundamentals of neuroanatomy and neurophysiology, with applications to clinical neurology.

#### ANAT 521 Gross Anatomy/Embryology (1.5)

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects.

#### ANAT 522 Gross Anatomy/Embryology II (4.5)

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects.

Prerequisite: ANAT 521.

#### ANAT 523 Gross Anatomy/Embryology III (2)

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects.

Prerequisite: ANAT 522.

#### ANAT 524 Gross Anatomy/Embryology IV (2)

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects.

Prerequisite: ANAT 523.

#### ANAT 525 Special Topics: Advanced Dissection (1-4)

Detailed dissection of a specified body region. Demonstration and lecture. May be repeated for additional credit. Offered on demand. Prerequisite: ANAT 541; or equivalent with approval of program director or department chair.

Prerequisite: ANAT 541

#### ANAT 527 Advanced Clinical Anatomy for Nurse Anesthetists (5)

Emphasizes detailed description and applied anatomy of the body systems (cardiovascular, respiratory renal, hepatic nervous, and endocrine) relevant to the nurse anesthetist.

#### ANAT 541 Gross Anatomy GS (7)

Anatomy of the head, neck, locomotor system, thorax, abdomen, pelvis, and perineum. Correlated with radiology, applied features, and embryological development. Summer and Autumn quarters.

#### ANAT 542 Cell Structure and Function GS (7)

The microscopic structure of cells, tissues, and organs of the human body. Autumn Quarter.

#### ANAT 544 Human Embryology Lecture (2)

The plan of development as it pertains to humans. Considers principles.

#### ANAT 544L Human Embryology Laboratory (1)

Students work with both human and comparative materials. Winter Quarter.

Prerequisite: A course in vertebrate embryology.

**ANAT 547 Histochemistry (3)**

Theoretical and practical aspects of histochemical methods, as applied to tissue sections. One lecture and two three-hour laboratories/conferences weekly.

Summer Quarter, even years.

Prerequisite: ANAT 542; a course in biochemistry.

**ANAT 550 Gross Anatomy/Embryology (0.5-6)**

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects. Restricted to Biomedical Science Program (certificate). Cross-listing: ANAT 521.

**ANAT 551 Medical Gross Anatomy/Embryology II (0.5-6)**

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects. Restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

**ANAT 552 Medical Gross Anatomy/Embryology III (0.5-6)**

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects. Restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

Prerequisite: ANAT 551.

**ANAT 553 Medical Gross Anatomy/Embryology IV (0.5-6)**

Regional systemic study of the human body, with correlation to radiology and clinical medicine. Surveys human embryonic development. Considers origins of common birth defects. Restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

Prerequisite: ANAT 552.

**ANAT 556 Comparative Embryology (2)**

Comparison of common models of development, their historic contributions, their benefits/limitations, and current practical applications.

Prerequisite: ANAT 544.

**ANAT 557 Psychoneuroimmunology (4)**

Psychoneuroimmunology (PNI) (or science about mind-body interactions) examines bidirectional communication among the nervous, endocrine, and immune systems. Critically reviews contemporary topics that teach students about the role of the key regulatory systems and how interaction among these systems maintains homeostasis. Presents basic information necessary to interpret current literature in psychoneuroimmunology (PNI) and to facilitate design of research in this area.

**ANAT 558 Applied Gross Anatomy GS (3)**

Emphasizes practical application of the anatomical knowledge covered in human gross anatomy. Considers applied anatomy problems involving biomechanical functions of the body, as well as application of anatomical principles to specific fields of human activity. Prerequisite or Concurrent\*: A graduate course in human gross anatomy\*; consent of instructor.

Prerequisite: ANAT 541.

**ANAT 594 Special Topics in Anatomy (1-7)**

Intensive study of a selected topic approved by the chair of the department. Individual guidance by a staff member.

ANAT 697 Research (1-8)

ANAT 698 Thesis (1-2)

ANAT 699 Dissertation (1-5)

ANAT 891 Anatomy Elective (1.8-21.6)

## ANESTHESIOLOGY

**ANES 314 Dental Anesthesia: Local Anesthesia and Inhalation Sedation (4)**

Physiologic and psychologic aspects of pain and anxiety. A philosophy of patient management, including use of local anesthetics and nitrous oxide/oxygen sedation. History and patient evaluation. Pharmacology, armamentarium, and complications regarding use of these agents. Management of office emergencies. Students practice local anesthetic injections and administer nitrous oxide/oxygen to each other.

**ANES 521 Principles of Medicine, Physical Diagnosis, and Hospital Protocol (1)**

Studies methods recognizing normal and abnormal physical conditions. Reviews organ systems to expand the dentist's general medical knowledge. Specific topics reviewed include blood diseases, systemic diseases, cardiac disease, patient admission, physical examination, and hospital charting. Repeated registrations required to fulfill total units.

**ANES 547 Anesthesia Grand Rounds (1)**

Weekly meeting of the Department of Dental Anesthesiology featuring guest lecturers who present a variety of current topics in anesthesiology. One session per month designated as the Mortality and Morbidity Conference.

**ANES 549 Contemporary Anesthesia (1)**

Presents current concepts, practice, and controversies in general anesthesia. Reviews textbook chapters on a weekly basis during the Fall and Winter quarters.

**ANES 604 Anesthesia Literature Review (1)**

Weekly session reviews current anesthesia literature.

**ANES 624 Intravenous Conscious Sedation (4)**

Reviews physiology, pathophysiology, pharmacology, monitoring airway management, and potential emergencies associated with the implementation of intravenous conscious sedation in the dental office.

**ANES 652 Introduction to General Anesthesia (1)**

Focuses on rapid acquisition of basic knowledge of the important elements of general anesthesia by new anesthesia residents in their first month of training.

**ANES 654 Practice Teaching in Anesthesia (1)**

Provides opportunity for second-year residents to participate in the teaching of anesthesia-related topics to first-year residents.

**ANES 674 Crisis Management in Anesthesia (0.5)**

Provides opportunity for residents to respond to simulated anesthesia challenges and complications as their anesthesia knowledge and skills are developed. Offered at the LLU simulation center each quarter over the 24-month program.

**ANES 696 Scholarly Activity in Dental Anesthesiology (1)**

Selected didactic, clinical, and/or laboratory activity developed by the program director or a designated program faculty member. Primarily designed for resident to fulfill the certificate requirements for scholarly activity/research in dental anesthesiology. Multiple registrations may be needed to complete these activities.

**ANES 697 Research (1)**

Student participates in ongoing research or original projects. All clinical research subject to approval by the Institutional Research Board. Multiple registrations may be needed to complete research activities.

**ANES 697A Research (1)**

Student identifies a research project, prepares a protocol, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

**ANES 697B Research (1-2)**

Student participates in ongoing research or original projects, collects and analyzes data, and writes a report of findings. Multiple registrations may be needed to complete research activities.

**ANES 746 General Anesthesia (10)**

Administration of general anesthesia and regional block anesthesia to a variety of medical and dental patients in the operating room, under the supervision of attending anesthesiologists. A minimum of 300 clock hours per quarter (8 quarters) required to fulfill total units.

**ANES 751 Dental Anesthesia: Local Anesthesia and Inhalation Sedation (4)**

A philosophy of patient management, including use of local anesthetics and nitrous oxide/oxygen sedation, as well as the physiologic and psychologic aspects of pain and anxiety. Course covers the history of anesthesia, patient evaluation, pharmacology, armamentarium, complications regarding use of these agents, and the management of office emergencies. Students practice local anesthetic injections and administer nitrous oxide/oxygen to each other.

**ANES 801 Dental Anesthesia: Advanced Topics (2)**

Theory of general anesthesia. Hospital dentistry, patient evaluation, medical consultations. Reviews local anesthesia and introduces additional techniques of pain and anxiety control.

**ANES 891 Anesthesiology Elective (60-720)****ANTHROPOLOGY****ANTH 304 Biological Anthropology (4)**

Explores the interaction between biology and culture in producing the variations in physical traits currently

found worldwide. Examines processes of change resulting from heredity, ecological adaptation, dietary differences, mate selection, disease, and other factors. Examines the problems of paleopathology (disease in ancient populations), humankind in the fossil record, and the place of biological and ecological factors in the fall of ancient civilizations. Detailed consideration of scientific and social bases for popular conceptions of "race."

**ANTH 306 Language and Culture (4)**

Surveys anthropological linguistics and sociolinguistics. Considers the place of language and communication in social interaction. Introduces descriptive and structural linguistics and discourse analysis. Examines linguistic pluralism in the United States. Contrasts language of health care givers with the language styles of people they serve. Language productions such as folklore, humor and other forms of 'word play,' curses and blessings, and glossolalia.

**ANTH 315 Cultural Anthropology (4)**

Advanced course in ethnology and social organization. Explores the nature of culture, giving special attention to such features as technology, economic activities, community organization, kinship and marriage, social control, magic and religion, the arts, and other forms of cultural behavior. Presents a wide array of examples from societies around the world.

**ANTH 316 Archaeology (4)**

Studies principles of archaeological research and the discoveries of centers of civilization in the Middle East, the Mediterranean, the New World, the Far East, Africa, and other parts of the world, particularly recent discoveries. Also covers the main features of biblical archaeology. Some attention given to research into prehistoric cultures.

**ANTH 436 Cultural Contexts of Religion (4)**

Anthropological approach to the study of religious beliefs and practices, focusing on the diversity of religious expressions that can provide insight into what makes us human and how we can battle the frailties of

humanity. Promotes empathy with people from cultural and religious traditions other than one's own, as well as tolerance and respect for their differences.

#### ANTH 448 Medical Anthropology (4)

Studies sickness and health as universal factors in the human condition. Examines world view as an explanatory system for human behavior, giving ethnographic examples of curing systems and coping mechanisms. Deals with cross-cultural communication of health principles and practices.

### ART APPRECIATION AND HISTORY

#### ARTA 205 The Language of Art (2-4)

Basic concepts, materials, and history of the visual arts that enable the nonart major to develop an art vocabulary and gain insight into the creative process.

### BIOCHEMISTRY

#### BCHM 306 Introduction to Organic and Biochemistry (6)

Meets the organic and biochemistry requirements of nursing and allied health students. Covers the nomenclature, structure, and salient chemical properties of the nine classes of organic compounds. Covers the structures and biological functions of proteins, carbohydrates, lipids, and nucleic acids; intermediary metabolism. Emphasizes relevant health-related topics.

#### BCHM 504 Introduction to Biochemistry GS (5)

Quantitative concepts of pH and buffers. Structure, function, and metabolism of the four major classes of biological macromolecules (proteins, carbohydrates, lipids, nucleic acids) and their subunits. Holoenzyme composition (vitamins, minerals) and activity. Bioenergetics. Regulatory mechanisms that contribute to homeostasis in biological systems. Flow of genetic information: replication, transcription, translation, and regulation. Connective tissue and body-fluid components. Lecture and demonstration primarily for dental students.

#### BCHM 505 Seminar in Biochemistry (1)

#### BCHM 506 Seminar Presentation in Biochemistry (1)

#### BCHM 508 Principles of Biochemistry (6)

Chemistry of amino acids and proteins. Enzyme properties and mechanisms. Bioenergetics. Chemistry and metabolism of carbohydrates, lipids, amino acids, and nucleic acids. Protein biosynthesis and the control of gene expression. Special topics in physiological chemistry: connective tissue components, acid-base balance, hormones, vitamins, and minerals.

#### BCHM 511 Medical Biochemistry, Molecular Biology, and Genetics I (0.5-6)

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

#### BCHM 512 Medical Biochemistry, Molecular Biology, and Genetics II (0.5-6)

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

#### BCHM 513 Medical Biochemistry, Molecular Biology, and Genetics III (0.5-6)

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis

for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

#### **BCHM 514 Medical Biochemistry, Molecular Biology, and Genetics IV (0.5-6)**

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

#### **BCHM 515 Introduction to Bioinformatics (2)**

Introduces bioinformatics methods and their application to biological research. Provides a conceptual understanding of the algorithms behind standard bioinformatics software, as well as practical experience in programs and databases commonly utilized in biological research.

#### **BCHM 517 Scientific Foundations of Nurse Anesthesia Practice (2)**

Provides students with an understanding and appreciation of scientific phenomena and with the ability to apply scientific methods, critical thinking, and problem-solving skills in exploring, conserving, and managing their environments.

#### **BCHM 518 Medical Biochemistry, Molecular Biology, and Genetics I (0.5-6)**

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a

biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate). Units for which course is offered per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

#### **BCHM 521 Fundamentals of Human Biochemistry SM (1)**

A lecture sequence for freshman medical students in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, and examines the mechanisms for genetic information flow in eukaryotic cells.

#### **BCHM 522 Fundamentals of Human Biochemistry SM (2.5)**

A lecture sequence for freshman medical students in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, and examines the mechanisms for genetic information flow in eukaryotic cells.

#### **BCHM 523 Introduction to Physical Biochemistry (3)**

Introduces biochemical thermodynamics, proteins and protein physical chemistry, enzyme kinetics and mechanisms, and bioenergetics.

#### **BCHM 525 Metabolic Interrelationships and Control (5)**

Regulation of carbohydrate and lipid metabolism, nuclear hormone receptors, amino acid metabolism, growth factors, intracellular regulation, nucleotide metabolism, DNA, RNA structure and function, transcription, translation.

Prerequisite: BCHM 508; or equivalent.

#### **BCHM 527 Molecular Biology of the Cell (8)**

Identical to CMBL 502, offered by the Department of Microbiology.

Prerequisite: BCHM 508 or CMBL 501.

**BCHM 531 Biochemical Basis of Human Disease SM (1)**

A lecture sequence for sophomore medical students designed to provide a biochemical/genetic/molecular basis for understanding human diseases.

**BCHM 532 Biochemical Basis of Human Disease SM (1)**

A lecture sequence for sophomore medical students designed to provide a biochemical/genetic/molecular basis for understanding human diseases.

**BCHM 534 Techniques of Biochemistry (2-6)**

Intensive, integrated and problem-based laboratory experience in protein chemistry and the physical characterization of macromolecules. Students gain experience with the oral and written presentation of experimental techniques and scientific findings.

**BCHM 544 Advanced Topics in Biochemistry (2-4)**

Recommended for the Ph.D. degree (2+2+2). Recent examples include proteins: modern methods of study; selected cellular events in carcinogenesis; enzyme kinetics; transgenic plants for human health.

**BCHM 551 Special Problems in Biochemistry (2-6)****BCHM 697 Research (1-10)****BCHM 698 Thesis (1-3)****BCHM 699 Dissertation (1-5)****BIOLOGY****BIOL 116 Introduction to Human Biology (3)**

Introductory course in human biology. Explores basic principles of human anatomy and physiology and their relationships to social functioning. Fulfills the human biology prerequisite for the master's degree Social Work Program.

**BIOL 406 Marine Biology (4)**

Surveys marine species of the world and the oceanographic processes and ecological interactions that affect them. Emphasizes tropical and coral ecosystems. Includes an independent project. Four class hours per week, plus all-day field trips (usually on Sunday).

**BIOL 409 Mammalogy (4)**

Studies the mammals of the world, with emphasis on North America. Includes classroom and field study of systematics, distribution, behavior, and ecology. Per week: class 3 hours, one three-hour laboratory.

**BIOL 414 Biology of Marine Invertebrates (4)**

Behavior, physiology, ecology, morphology, and systematics of marine invertebrates, with emphasis on morphology and systematics. Three class hours per week, one-day field trip alternate weeks, or the equivalent.

**BIOL 415 Ecology (4)**

Principles of terrestrial, aquatic, and marine ecology—with a focus on individual, population, community, and ecosystem levels of organization. Laboratory work includes field studies that examine ecological principles. Per week: class 3 hours, laboratory 3 hours.

**BIOL 426 Invertebrate Paleontology (4)**

Structure, classification, ecology, and distribution of selected fossil invertebrate groups. Considers principles and methods involved in the study and analysis of invertebrate fossils. Per week: class 3 hours, plus one three-hour laboratory.

**BIOL 427 Vertebrate Paleontology (4)**

Fossil vertebrates, with emphasis on the origins of major groups. Systematics, biology, and biogeography of ancient vertebrates. Per week: class 3 hours, plus one three-hour laboratory.

**BIOL 428 Genetics and Speciation (4)**

Introduces genetic mechanisms of biological change. Processes of inheritance through time evaluated in their ecological context.

**BIOL 437 Animal Behavior (4)**

Behavioral mechanisms of animals and their role in survival. Lectures and projects.

**BIOL 439 Behavioral Ecology (4)**

Examines in depth how behavior contributes to the survival of animals, with emphasis on behavioral strategies that reflect adaptation to the animal's environment.

**BIOL 444 Paleobotany (4)**

Fossil plants; their morphology, paleoecology, taphonomy, classification, and stratigraphic distribution. Analyzes floral trends in the fossil record. Per week: class 3 hours, plus one three-hour laboratory or field trip.

**BIOL 449 Biodiversity and Conservation (3)**

Examines contemporary issues related to diminishing biodiversity on regional and global scales and the need to conserve both biodiversity and the critical habitats that support threatened flora and fauna.

**BIOL 456 Techniques in Vertebrate Ecology (3)**

Theory and practice of vertebrate ecology research, including marking methods, population estimation, home range and habitat analysis, and radiotelemetry. Software used extensively for analysis of data, some of which will be collected during field trips.

**BIOL 475 Philosophy of Science and Origins (4)**

Concepts in the history and philosophy of science, and the application of these principles in analyzing current scientific trends.

**BIOL 478 Current Topics in Biology (1-5)**

Reviews cutting-edge literature in the biological sciences. Different sections may be repeated for additional credit.

**BIOL 479 Readings in Biology (1-4)**

Studies, analyzes, and discusses current and classic papers.

**BIOL 488 Current Topics in Biology (1-4)**

Reviews cutting-edge literature in the biological sciences. Different sections may be repeated for additional credit.

**BIOL 495 Undergraduate Research (1-4)**

Student pursues original investigation and/or literature study under the direction of a faculty member. May be repeated for additional credit.

**BIOL 497 Special Projects in Biology (1-4)**

Student responsible for a special research project in the field, laboratory, museum, or library. May be repeated for additional credit.

**BIOL 504 Biology of Marine Invertebrates (4)**

Behavior, physiology, ecology, morphology, and systematics of marine invertebrates, with emphasis on morphology and systematics. Per week: class 3 hours; one-day field trip alternate weeks, or the equivalent.

**BIOL 505 Marine Biology (4)**

Surveys marine species of the world, and the oceanographic processes and ecological interactions that affect them. Emphasizes tropical and coral ecosystems. Includes an independent project. Per week: class 4 hours, plus all-day field trips (usually on Sundays).

**BIOL 515 Biogeography (3)**

Present and past distribution and migrations of the natural populations of organisms.

**BIOL 517 Ecological Physiology (4)**

Studies the interface between the individual and the environment, with emphasis on unusual environments, in order to explore the limits of physiological systems. Per week: class 4 hours. Offered alternate years.

**BIOL 518 Readings in Ecology (2)**

Studies, analyzes, and discusses current and classic papers.

**BIOL 525 Paleopalynology (4)**

Morphology, paleoecology, classification, and stratigraphic distribution of plant microfossils. Includes

introduction to biostratigraphic and paleoecologic analytical methods. Per week: class 3 hours, plus one three-hour laboratory or field trip.

**BIOL 526 Principles and Methods of Systematics (3)**

Studies the principles and methods of modern systematic biology, with focus on the assumptions, concepts, and computerized methods of phylogeny reconstruction.

**BIOL 536 Readings in Animal Behavior (2)**

Critical analysis of the research literature on selected topics in animal behavior.

**BIOL 537 Advances in Sociobiology (3)**

Studies current concepts and ideas relating to the origin and structure of social behavior of animals. Focuses special attention on the adaptive significance of species-specific behavior in a wide variety of environments.

**BIOL 538 Behavior Genetics (4)**

Studies the interaction of genotype and phenotype as it relates to animal behavior. Primary focus at the molecular and physiological levels of behavior. Modern understanding of the nature/nurture debate extended to topics that include biological determinism and ethics.

**BIOL 539 Behavioral Ecology (4)**

Examines in depth how behavior contributes to the survival of animals, with an emphasis on behavioral strategies that reflect adaptation to the animal's environment.

**BIOL 545 Genetics and Speciation (4)**

Comparative analysis of species concepts, mechanisms of speciation, and analysis of micro- and macroevolution.

Prerequisite: A course in genetics and philosophy of science.

**BIOL 546 Techniques in Vertebrate Ecology (3)**

Theory and practice of vertebrate ecology research, including marking methods, population estimation,

home range and habitat analysis, and radiotelemetry. Software used extensively for analysis of data, some of which will be collected during field trips.

**BIOL 547 Molecular Biosystematics (4)**

Analyzes at the molecular level of genetics events that underlie speciation. Laboratory work integrated with lecture, demonstrating basic molecular genetic research tools applicable to molecular biosystematics studies.

**BIOL 548 Molecular Ecology (4)**

Applies molecular markers to the study of ecology and natural history of populations. Emphasizes molecular techniques that uniquely contribute to resolving major problems in phylogeography and measures of adaptiveness.

Prerequisite: Genetics and speciation and a course in either ecology or biogeography.

**BIOL 549 Biodiversity and Conservation (3)**

Examines contemporary issues related to diminishing biodiversity on regional and global scales and the need to conserve both biodiversity and the critical habitats that support threatened flora and fauna.

**BIOL 555 Molecular Genetics (3)**

An overview of the molecular basis of life, with emphasis on DNA as an information storage medium. The systems of information retrieval found in prokaryotes and eukaryotes.

**BIOL 558 Philosophy of Science (4)**

Studies selected topics in the history and philosophy of science, and applies these principles in analyzing contemporary scientific trends.

**BIOL 559 Philosophy of Science and Origins (1)**

Studies selected topics in the history and philosophy of science, and applies these principles in analyzing current scientific trends. Provides an advanced update in the topic for students who have had a similar course at the undergraduate level.

**BIOL 588 Current Topics in Biology (1-5)**

Reviews cutting-edge literature in the biological sciences. Different sections may be repeated for additional credit.

**BIOL 589 Readings in Biology (1-4)**

Studies, analyzes, and discusses current and classic papers.

**BIOL 607 Seminar in Biology (1)**

Seminar presentations by guest scientists on recent research and developments in biological science. No student presentation required.

**BIOL 616 Research and Experimental Design (2)**

Concepts, methods, and tools of research, including experimental design and data analysis.

**BIOL 617 Proposal Writing and Grantsmanship (2)**

Skills and practice of effective proposal writing and strategies for locating and obtaining research grants.

**BIOL 618 Writing for publication (2)**

Explores the mechanics and processes of preparing, submitting, revising, and resubmitting a manuscript for publication in a peer-reviewed journal. Designed for students who are well along in the process of writing their first manuscript for publication. Prepares students to handle the manuscript revision process when the manuscript is returned from reviewers, as well as the final stage of resubmission to the journal.

**BIOL 695 Special Projects in Biology (1-4)**

Student responsible for a special research project in the field, laboratory, museum, or library. May be repeated for additional credit.

**BIOL 697 Research (1-8)**

See department checklist for recommended number of units.

**BIOL 698 Thesis Research (1-8)**

Credit for research and for writing the master's thesis. Grade received does not indicate whether thesis is completed and approved.

**BIOL 699 Dissertation Research (1-8)**

Credit for research and for writing the doctoral dissertation. Grade received does not indicate whether dissertation is completed and approved.

**BIOPHYSICS AND BIOENGINEERING****BPBE 510 Introduction to Medical Imaging (3)**

Increases understanding of and facilitates proficiency in the major medical imaging modalities currently used, including: magnetic resonance, positron emission tomography, ultrasound, computed tomography, and x-ray. Discusses the physical and theoretical bases for the use of an instrument to provide specific information. Incorporates real-life examples and utilizes imaging specialists with expertise in various modalities, as appropriate. Provides laboratory experience in the extraction and analysis of content.

Prerequisite: Advance college level mathematics and biology recommended.

**CARDIAC ELECTROPHYSIOLOGY TECHNOLOGY****CEPT 245 Cardiovascular Anatomy and Physiology (3)**

Explores normal and pathological cardiovascular anatomy and physiology. Emphasizes myocardial excitation, contraction, intracardiac flow, intracardiac pressure, valve function, coronary anatomy, and ventricular function. Studies in detail the electrical conduction system and cardiovascular hemodynamic principles. Introduces pathological coronary anatomy, as well as abnormalities of the cardiovascular system.

**CEPT 248 Cardiovascular Patient Assessment (2)**

Principals of assessment for the patient with cardiovascular disorders, including: health history, physical assessment techniques, interpretation of laboratory data, diagnostic data, chest radiography, auscultation, and diagnostic procedures. Interview techniques and the development of patient care techniques specific to the cardiovascular patient.

**CEPT 251 Cardiac Electrophysiology and Rhythm Recognition I (2)**

Clinical use of diagnostic tests and procedures related to cardiac electrophysiology disease states. Introduces anatomical and physiologic concepts of rhythm generation and cardiac electrophysiology pathways, with emphasis on basic rhythm recognition and evaluation.

**CEPT 252 Cardiac Electrophysiology and Rhythm Recognition II (2)**

Principles of application and interpretation of the 12-lead system. Emphasizes recognition of the acute myocardial infarction and common myocardial pathology. Additional topics include, but are not limited to, axis deviation, acute ischemic conditions, electrolyte imbalances, bundle-branch block, and infarct imposters. Practical application of information to bedside care of cardiac patients, emphasizing patient assessment, data collection, and use of the 12-lead to guide rapid intervention. American Heart Association advanced cardiac life support certificate issued upon successful completion of the course.

Prerequisite: Successful completion of a basic interpretation examination or CEPT 251 Cardiac Electrophysiology and Rhythm Recognition I.

**CEPT 258 Fundamentals of Biomedical Science (2)**

Study and application of basic sciences related to physiology and pathophysiology, integrating the concepts into the fundamentals of biomedical electronics—specifically the physical sciences to cardiac management.

**CEPT 261 Cardiac Electrophysiology Science I (3)**

Principles of cardiac electrophysiology, including electrophysiology conduction, pathways and mapping, measurements of refractory periods, aberrant conduction of the myocardium, tests of sinus node function, atrial and ventricular extrastimulus testing, pacing protocols for diagnostic electrophysiology studies, and cardiac resynchronization. Emphasizes application to the clinical setting.

**CEPT 262 Cardiac Electrophysiology Science II (3)**

Medical instrumentation and clinical application used in cardiac electrophysiology. In-depth study of the technical knowledge used for diagnostic, interventional, and therapeutic modalities. Applies scientific principles to the operation of laboratory equipment. Identifies correct patient-specific or appropriate device system adjustments.

**CEPT 263 Cardiac Electrophysiology Science III (3)**

Continues CEPT 261 and 262, developing advanced knowledge, skills, and application of mapping and monitoring systems. Explores device features, therapy options, and hands-on troubleshooting in depth. Includes case study review.

**CEPT 271 Cardiology Diseases and Therapeutics I (2)**

Overview of pathophysiology of cardiac diseases. Describes appropriate therapy for acute and chronic cardiovascular disease states. Emphasizes scientific support for treatment modalities and reviews current treatment trends for cardiovascular diseases.

**CEPT 272 Cardiology Diseases and Therapeutics II (2)**

Addresses major cardiac pathologies; congenital and acquired. Focuses on cardiac rehabilitation science and current therapy of the cardiac patient. Includes applied knowledge of relevant risk factors and fosters appreciation of cardiovascular disease prevention. Emphasizes the function of exercise in disease prevention, as well as the role nutrition plays in promoting cardiovascular health. Discusses testing protocols and exercise prescription, along with evidence-based therapies.

**CEPT 275 Cardiovascular Pharmacology (3)**

Pharmacological agents currently used in the treatment of cardiovascular disease management, including biophysical, biochemical, and cellular basis of treatment, pharmacokinetics, pharmacodynamics, and therapeutics. Emphasizes pharmaceuticals commonly given to and used to treat cardiac patients.

### CEPT 281 Cardiac Electrophysiology Procedures I (3)

Indications for technology-based evaluations and diagnostic and therapy interventions. Focuses on interventions that minimize procedural and device-related complications. Includes information related to patient monitoring and comfort. Laboratory practice and techniques.

### CEPT 282 Cardiac Electrophysiology Procedures II (3)

Continues to explore advanced cardiovascular diagnostic and therapeutic procedures. Laboratory practice and techniques.

### CEPT 285 Cardiology (3)

Assists the health care provider to develop assessment skills and to increase knowledge of medical management of the patient with acute and chronic cardiovascular disorders. Focuses on anatomy and physiology, underlying pathophysiology, advanced history taking and physical assessment, cardiovascular pharmacology, electrical modalities, cardiac diagnostic testing, and current research.

### CEPT 321 Cardiac Electrophysiology Clinical Practicum I (0.5)

Introduces the clinical setting. Orients the student to environments in which the CEP specialist works. Student participates in or conducts a health history and physical assessment of the cardiac patient and learns proper documentation procedures. Hands-on experience to assist development of basic clinical skills. Introduces procedures, diagnostic examinations, and equipment utilized in cardiac procedures.

### CEPT 322 Cardiac Electrophysiology Clinical Practicum II (1.5)

Clinical experience and application of cardiac electrophysiology procedures, interventions, instrumentation and patient care interactions. Preceptors in the clinical settings, facilitate experiences that enable students to develop and enhance competencies related to cardiac testing and procedures.

Includes practice with components of communicating effectively with clients, their families, and other members of the health care team.

### CEPT 323 Cardiac Electrophysiology Clinical Practicum III (1.5)

Clinical assignments to assist the student in gaining specific experiences that enable him/her to develop and enhance competencies in cardiac testing and patient evaluation. Guided by clinical preceptors, student rotates through multiple environments relevant to the practice of cardiac electrophysiology.

### CEPT 324 Cardiac Electrophysiology Clinical Practicum IV (2)

Student rotates through several clinical environments in order to gain advanced competencies in all content areas. Includes, but is not limited to Holter scanning, cardiac rehabilitation, exercise testing, pacemaker technologies, and cardiac mapping.

### CEPT 345 Case Studies in Cardiac Electrophysiology (2)

Presents cardiac electrophysiology concepts through a case study model. Student reviews and presents case studies that integrate knowledge of cardiac disease, treatments, diagnostic tests, and procedures. Utilizes a simulated patient care setting to improve and develop critical-thinking skills.

### CEPT 348 Cardiac Electrophysiology Seminar (3)

A comprehensive view of the rapidly evolving field of interventional cardiology. Studies new developments, technological innovations, and advances in clinical application.

## CHINESE

### CHIN 105 Chinese Civilization (4)

Introduces and discusses important aspects of Chinese civilization: language, literature, history, geography, culture, economics, philosophies, and religions; as well as modern-day politics. Surveys the Mandarin Chinese language, focusing on basic pronunciation, grammar, traditional and simplified

written characters, and sentence construction.

Communication in everyday life, e.g., in restaurants, on public transportation, in health care encounters.

Includes interactive learning, role play, media, music, and cultural presentations to enhance understanding and synthesize learning. Provides basic skills and understanding necessary for further Chinese studies and research.

#### CHIN 106 China Today—Its Language and Culture (4)

Briefly discusses China's past as background for study of important aspects of the country's changing, diverse, and modern culture—including its politics, economics, and religion. Introduces the richness of the Chinese language, while emphasizing common vocabulary used in everyday conversation, especially in a health care environment. Uses role-play and interactive learning to prepare students, faculty, and staff in their varied roles and missions to interact with modern China. Provides fundamental skills and understanding for further Chinese studies and research. Includes one local field trip.

#### CHIN 111 Mandarin I (4)

Concentrates on study of modern vernacular Mandarin Chinese in both spoken and written forms. Listening, speaking, reading, and simple writing skills immerse students in vocabulary and simple grammatical rules. Emphasizes applied learning, individual inquisitiveness, and fearless verbal practice. Some homework required. Students expected at the end of the course to pronounce a list of common words, distinguish them by listening, and use them in simple dialogues and mini-speeches. Provides competence to read simple road signs, restaurant menus, some simple newspaper headlines and advertisements, simple biblical texts, and Chinese idioms. No knowledge of Chinese language required. Full attendance expected.

#### CHIN 112 Mandarin II (4)

Sequel to CHIN 111. Continues study in modern vernacular Mandarin Chinese in both spoken and written forms. Emphasizes further proficiency in the four basic language skills (listening, speaking, reading, and writing Chinese); increases competence in

vocabulary and grammatical knowledge. Introduces health care-related terminology, Christian texts in Chinese, Chinese idioms and English translations. Examination includes a simple speech in class and a short narrative written in Chinese.

Prerequisite: CHIN 111; unless student can speak Chinese and write some Chinese characters.

#### CHIN 205 Immersion Language and Culture Program (4)

Integrates program with a domestic or an international service project within a Chinese community. Applies classroom learning in real-life situations. Student receives an educational "China experience" firsthand through eighty clock hours of lectures, discussion, and service learning.

Prerequisite or concurrent: CHIN 105 or CHIN 106 or CHIN 305.

#### CHIN 206 Health Care-Service Learning in a Chinese Context (2, 4)

Focuses on an international service-learning project within a Chinese community. Classroom lectures applied to a health-exposition project. Student receives an in-depth China education experience through language and cultural immersion with practical learning while serving people's needs.

Prerequisite or concurrent: CHIN 105 or CHIN 106 or CHIN 111 or CHIN 305.

#### CHIN 305 Mandarin for Health Care Professionals (2, 4)

Focuses on the ability to listen, speak, read and write in a Chinese health care-related setting, such as medical and dental offices, clinics, hospitals, nursing homes, public health facilities, and childcare centers. Students study and role play common communication exchanges with patients, physicians, dentists, nurses, and paramedical personnel.

Prerequisite: CHIN 105 or CHIN 106 or CHIN 111; unless student demonstrates competence in Chinese language and knowledge commensurate with that gained as a result of completing the prerequisites.

**CHIN 399 Directed Study (2-4)**

Researches Chinese medicine, therapeutics, culture, education, prose, poetry, music, drama, biblical texts, and religious literature; influence of globalization, market dominance, entrepreneurship; religious liberty in China; or other topics in consultation with the instructor.

Prerequisite: CHIN 105 or CHIN 111; or permission of instructor.

**CHIN 500 Chinese Language Structure and Translation into English (4)**

Descriptive analysis of morphology, syntax, and phonology of modern Chinese; and basic skills of translation into English using scriptural texts and contemporary writing. Conducted in English with liberal use of spoken and written Chinese.

Prerequisite: CHIN 105 or CHIN 106 or CHIN 111 and CHIN 205 or CHIN 206.

**CHIN 599 Directed Study (4)**

With consent of the instructor, student chooses a topic in the field of Chinese culture and/or language for focused research.

Prerequisite: CHIN 105 or CHIN 106, CHIN 205 or CHIN 206.

**CHILD LIFE SPECIALIST****CHLS 502 Child Life Seminar (2)**

Develops a child life specialist identity through readings, presentations, and discussion of child life history and practice. Reviews child growth and development theories. Encourages application for student membership in professional organizations, such as the Child Life Council. Reviews standards of clinical practice using the clinical documents of the Child Life Council.

**CHLS 503 Child Life Seminar (1)**

Students develop a child life specialist identity in preparation for clinical practice through readings, discussion of clinical practice placements, group process, and case-study overview. Students apply and interview for clinical placement, discuss other related

child life topics, and review standards of clinical practice using the clinical documents of the Child Life Council.

**CHLS 504 Child Life Administration and Program Development (3)**

Introduces students to the history and development of the child life profession. Health care environment, administrative issues, program development, and outcome assessment process. Develops competencies and skills necessary to effectively administer a child life program.

**CHLS 506 Child Life Specialist: Educational and Therapeutic Intervention (3)**

Teaches the developmental aspects of play therapy, in collaboration with the developmental stages of the child/teen and family in the context of a health care setting. Provides student with an experiential understanding of play therapy, recreation therapy, education, and practice.

**CHLS 507A Aspects of Illness and Disease (3)**

Teaches the child life student about the childhood disease process and describes the pathophysiology, symptoms, diagnostic testing, and treatment of disease. How disease affects the child and family's behavioral, social, and emotional development and coping strategies.

**CHLS 507B Aspects of Illness and Disease (3)**

Focuses on childhood disease process and describes the pathophysiology, symptoms, diagnostic testing, and treatment of disease. Discusses how disease affects the child and family's behavioral, social, and emotional development and coping strategies.

Prerequisite: CHLS 507A.

**CHLS 508 Grief and Loss (3)**

Promotes understanding of various theories, and practices specific interventions that assist hospitalized children/teens or adult family members when they encounter issues of death, loss and/or grief. Students examine how these issues affect them personally and

professionally; and describe their own epistemology regarding death, loss and grief. Examines these issues from a family-system's perspective in a hospital setting.

#### CHLS 604 Child Life Internship and Supervision I (3)

Student works with children/teens and families in a hospital and/or related setting under the supervision of a certified child life specialist while accumulating the 480 hours required for the certificate. Gives special attention to legal, ethical, moral, educational, cultural, spiritual, and gender issues as these issues relate to work with children/teens and families.

#### CHLS 605 Child Life Internship and Supervision II (3)

Student works with children/teens and families in a hospital and/or related setting under the supervision of a certified child life specialist while accumulating the 480 hours required for the certificate. Gives special attention to legal, ethical, moral, educational, cultural, spiritual, and gender issues as these issues relate to work with children/teens and families.

#### CHLS 606 Parenting Medically Fragile Children (3)

Introduces students to parenting issues related to the medically fragile child. Provides knowledge of theories, techniques, skills, available community resources, and legal and ethical considerations that pertain to this specific group.

#### CHLS 607 Child Life Professional (3)

Prepares students for entering the professional field of child life by demonstrating clinical assessment, documentation, and skills related to child life practice. Includes application of ethical principles, as well as issues of professionalism. Requires a 100-hour practicum.

#### CHLS 608 Child Life Practicum (1)

Students carry out assigned playroom duties: supervise activities that foster creativity, divert patients from stress and worry, and normalize their environment; and provide opportunities for patients and families to socialize and engage in developmentally

appropriate activities. Students assist with bedside interaction and interventions and assist staff with escorting patients to other locations of the hospital for special programming.

## CYTOTECHNOLOGY

#### CLSC 301 Introduction to Radiographic Procedures I (2)

Nature and description of radiologic procedures for the nonradiologic technologist. Applies principles and medical techniques to the radiographic setting. Surveys anatomy and instrumentation. Includes observation laboratory.

#### CLSC 302 Introduction to Radiographic Procedures II (2)

Nature and description of radiologic procedures for the nonradiologic technologist. Applies principles and medical techniques to the radiographic setting. Surveys anatomy and instrumentation. Includes observation laboratory.

#### CLSC 341 Female Genital Cytology (6)

Histology and cytology of the female genital tract. Cytohormonal changes, nonneoplastic abnormalities, premalignant lesions, and rare malignancies. Lecture, demonstration, and microscopic examination.

#### CLSC 351 Respiratory Cytology (1, 6)

Histology and cytology of the respiratory tract. Lecture, demonstration, and microscopic examination. Research methods, with emphasis on experimental design and interpretation of results.

#### CLSC 353 Urinary Tract and Prostate Cytology (3)

Histology and cytology of the urinary tract and prostate. Lecture, demonstration, and microscopic examination.

#### CLSC 357 Gastrointestinal Tract Cytology (2)

Histology and cytology of the gastrointestinal tract. Lecture, demonstration, and microscopic examination.

**CLSC 361 Body Cavity and Miscellaneous Secretions Cytology (3, 5)**

Histology and cytology of fluids from body cavities and other sites. Research methods applicable to cytology, with emphasis on experimental design and interpretation of results. Lecture, demonstration, and microscopic examination. Course completed over two quarters.

**CLSC 363 Bone Biopsy Cytology (1)**

Histology and cytology of bone. Lecture, demonstration, and microscopic examination.

**CLSC 365 Breast Cytology (1)**

Histology and cytology of the breast. Lecture, demonstration, and microscopic examination.

**CLSC 367 Cytogenetics (1)**

Meiosis, mitosis, and karyotype preparation. Genetic disorders. Lecture, demonstration, and laboratory.

**CLSC 371 Cytopreparation Techniques (1, 2)**

Procedures on collection and fixation techniques from all organ sites. Techniques in assuring cumulation of follow-up data and laboratory quality control. Clinical and social aspects of AIDS. Lecture, demonstration, and laboratory. Course completed over two quarters.

**CLSC 373 Histotechnology Techniques (1)**

Histologic preparatory techniques, with emphasis on special stains.

**CLSC 404 General Histology (5)**

Didactic and microscopic study of basic normal tissue types of major organs and systems of the human body, with emphasis on function and clinical relevance of histologic structures.

AHCJ 402, AHCJ 403

**CLSC 405 Pathology (5)**

Advanced didactic and microscopic study of disease processes and corresponding pathologic findings of major organ systems of the human body.

Prerequisite: AHCJ 402, AHCJ 403; CLSC 404.

**CLSC 424 Hematology (3)**

Theory and background of routine and special laboratory procedures used in diagnosis and treatment of hematologic and other diseases. Evaluates and compares methodologies. Emphasizes bone marrow, body fluid, and peripheral blood-cell morphology: hematopoiesis, maturation, kinetics. Atypical and abnormal cellular morphology, including leukemias, lymphomas, and anemias. Clinical and social aspects of AIDS.

**CLSC 431 Advanced Specialties (3)**

Principles and techniques of electron microscopy, including basic cell ultrastructure, immunohistochemistry, and molecular biology.

**CLSC 432 Current Research Techniques (3)**

Introduces current research techniques and skills development. Techniques in immunocytochemistry, image and flow cytometry, and molecular pathology.

**CLSC 481 Supervised Cytology Research Project (2)**

Research project under the supervision of the program director. Oral presentation and paper. Course completed over two quarters. Students register for 2 units Spring Quarter and 2 units Fall Quarter, for a total of 4 units.

**CLSC 483 Supervised Hematology Research Project (2)**

Supervised research project under the direction of the hematopathologist. Oral presentation and paper.

**CLSC 491 Cytology Affiliation I (2, 4)**

Three two-week (40 hours/week) internships in the cytopathology laboratory. Rotation through all phases of diagnostic service work and laboratory functions in cytology. Independent screening of routine gynecologic and nongynecologic specimens.

**CLSC 492 Cytology Affiliation II (6)**

Three two-week (40 hours/week) internships in the cytopathology laboratory. Rotation through all phases

of diagnostic service work and laboratory functions in cytology. Independent screening of routine gynecologic and nongynecologic specimens.

## CLINICAL LABORATORY SCIENCE

### CLSM 105 Procedures in Phlebotomy (4)

Training in venipuncture and skin puncture, medical terminology, laboratory safety, CPR, basic anatomy and physiology, specimen-collection techniques, hazards/complications, quality assurance methods, and medicolegal issues of phlebotomy. Clinical rotation arranged at Loma Linda University Medical Center and affiliates. CPR training and certificate arranged for students not already certified.

Current CPR certificate.

### CLSM 105L Procedures in Phlebotomy Laboratory (1)

Clinical experience to accompany CLSM 105. Training in venipuncture and skin puncture, medical terminology, laboratory safety, CPR, basic anatomy and physiology, specimen-collection techniques, hazards/complications, quality-assurance methods, and medicolegal issues of phlebotomy. Clinical rotation arranged at Loma Linda University Medical Center.

### CLSM 303 Urine and Body Fluid Analysis I (1)

Urinalysis screening procedure and its application in the diagnosis of renal, systemic, and metabolic diseases. Analysis and morphology of body fluids. Lecture and laboratory.

### CLSM 307 Medical Parasitology (3)

Medically important parasites: life cycles, clinical features, infective diagnostic stages. Demonstrations, slide studies, and diagnostic procedures. Lecture and laboratory.

### CLSM 309 Quantitative Analysis (Chemical) (4)

Provides a rigorous background in chemical principles particularly important to analytical clinical chemistry. Develops an appreciation for the task of judging the accuracy and precision of experimental data and the application of statistical methods. Covers both fundamental and practical aspects of chemical analysis;

neutralization titrations; acid-base titrations; spectrophotometric methods; and electrochemical and chromatographic methodologies. Lecture and laboratory.

### CLSM 321 Hematology I (4)

Examines normal hematologic physiology, cellular development, and hemostasis in the human. Introduces pathophysiology, with emphasis on clinical and laboratory evaluation of hematologic status. Theory and background of laboratory procedures used in diagnosis and treatment of hematologic and other diseases. Stresses proficiency in evaluation of normal and abnormal cellular morphology. Lecture and laboratory.

### CLSM 322 Hematology II (4)

Theory and background of routine and special laboratory procedures used in diagnosis and treatment of hematologic and other diseases. Emphasizes peripheral blood-cell morphology, hematopoiesis, maturation, and kinetics. Pathophysiology of hematologic disorders, including anemias and hematologic malignancies. Correlation of hemostasis testing with clinical hemostatic disorders. Lecture and laboratory.

Prerequisite: CLSM 321.

### CLSM 324 Immunology I (4)

Fundamentals of humoral- and cell-mediated immunity. Mediators of immune response and aspects of human immunopathology. Clinical and social aspects of HIV/AIDS. Immunologic laboratory tests as tools for patient care. Research methods applicable to immunology, with emphasis on experimental design and interpretation. Per week: lecture 3 hours, laboratory 3 hours.

### CLSM 325 Clinical Immunology (3)

Presents the basic principles of immunology. Topics covered include humoral and cell-mediated immunity, complement, autoimmunity, immunodeficiency, hypersensitivity, tumor immunology, transplant immunology, virology, syphilis serology, and immunologic laboratory techniques. Emphasizes principles, laboratory procedures, and clinical significance. Lecture and laboratory.

**CLSM 327 Clinical and Pathogenic Microbiology I (5)**

Introduces microbiological concepts, leading to an in-depth study of the major groups of pathogenic bacteria and their relationship to human disease. Emphasizes clinical laboratory identification methods and procedures. Lecture and laboratory.

**CLSM 328 Clinical and Pathogenic Microbiology II (5)**

Nature and control of microorganisms encountered in clinical material and various anatomical sites. Emphasizes antimicrobial agents, mycology, and virology, including hepatic viruses and HIV/AIDS. Lecture and laboratory.  
Prerequisite: CLSM 327; or consent of instructor.

**CLSM 331 Biochemistry (5)**

Chemical structure and metabolism of carbohydrates, amino acids, lipids, and nucleic acids. Protein synthesis, functions, and analysis. Enzymes and their structure, function, kinetics, and regulation. Lecture and laboratory.

**CLSM 332 Clinical Chemistry I (4)**

Clinical chemistry procedures and their clinical significance in medicine, with focus on the following areas: fluids and electrolytes, acid-base balance, carbohydrates and diabetes mellitus, proteins, iron, hemoglobin, and porphyrins. Presents quality assurance, method evaluation, and establishment of reference ranges. Lecture and laboratory.

Prerequisite: CLSM 331; or consent of instructor.

**CLSM 333 Clinical Chemistry II (4)**

Clinical chemistry procedures and their clinical significance in medicine, with focus on the following areas: lipids, lipoproteins, cardiovascular disease, enzymes, liver function, the endocrine system; thyroid, parathyroid, adrenal cortex and catecholamines, and steroids; reproduction, pregnancy, and fetal well-being; therapeutic drug monitoring and toxicology. Lecture and laboratory.

Prerequisite: CLSM 332.

**CLSM 341 Immunohematology I (3)**

Fundamentals of antigen-antibody reactions. Studies major blood-group systems, compatibility testing, and antibody-identification techniques. Clinical analysis of hemolytic disease of the newborn. Lecture and laboratory.

**CLSM 342 Immunohematology II (3)**

Blood collection, donor testing, component preparation, and quality management in the collection facility. Identification of multiple antibodies, typing discrepancies, hemotherapy, hazards of transfusion, and investigation of autoimmune hemolytic disease. Lecture and laboratory.

Prerequisite: CLSM 341.

**CLSM 396 CLS Junior Seminar (2)**

Prepares student for entry into the senior year clinical practicum. Introduces student to the clinical laboratory and its operations by direct observation and discussions to include pre-analytical, analytical, and postanalytical areas. Students expected to apply knowledge acquired from all disciplines within the junior year curriculum. Visits to off-site locations may be required.

**CLSM 401 Immunology II (1)**

Correlates theory and clinical experience with and applies them to analytical techniques. Assesses and interprets data. Evaluates and compares methodologies. Directed study and review, including standard serological techniques, nephelometry, and electrophoresis.

Prerequisite: CLSM 324.

**CLSM 411 Urine and Body-Fluid Analysis II (1)**

Correlates theory and clinical experience with and applies them to analytical techniques. Assesses and interprets data. Evaluates and compares methodologies. Urinalysis screening procedures and applications in the diagnosis of renal, systemic, and metabolic diseases. Processing, analysis, and morphologic evaluation of body fluids.

Prerequisite: CLSM 303.

**CLSM 413 Diagnostic Microbiology (1-5)**

Correlates theory and clinical experience with, and applies them to, analytical techniques. Assesses and interprets data. Evaluates and compares methodologies. Directed study and review of diagnostic bacteriology, mycology and virology. Emphasizes isolation and identification of pathogenic microorganisms. Includes susceptibility testing, instrumentation, and rapid identification methods. Course completed over two quarters.

Prerequisite: CLSM 307, CLSM 327, CLSM 328.

**CLSM 414 Clinical Parasitology (1)**

Correlates theory and clinical experience with and applies them to analytical techniques. Assesses and interprets data. Evaluates and compares methodologies. Directed study and review of medical parasitology. Emphasizes testing for and identification of pathogenic parasites. Grade given after course is repeated with different content, for a total of 2 units.

Prerequisite: CLSM 307

**CLSM 422 Hematology III (1-5)**

Correlates theory and clinical experience with and applies them to analytical techniques. Assesses and interprets data. Evaluates and compares methodologies. Directed study and review of hemostasis, cellular quantification and identification techniques, and clinical hematology. Includes white cell, red cell, platelet, and hemostatic disorders. Course completed over two quarters.

Prerequisite: CLSM 321, CLSM 322.

**CLSM 431 Immunoassay (2)**

Fundamentals and principles of radioisotopic and nonradioisotopic immunoassays. Methods discussed include fluorescence polarization, enzyme immunoassay, chemiluminescence, radioassay, and molecular diagnostic techniques. Clinical uses of the above methods discussed and applied to clinical laboratory science.

Prerequisite: CLSM 332; or consent of instructor.

**CLSM 434 Clinical Chemistry III (1-4)**

Correlates and applies theory and clinical experience with analytical techniques. Assesses and interprets data.

Evaluates and compares methodologies. Directed study and review include: carbohydrates, proteins, lipids, enzymology, electrolytes, acid-base balance, endocrine system, and therapeutic drug monitoring. Course completed over two quarters.

Prerequisite: CLSM 333.

**CLSM 435 Immunoassay and Molecular Diagnostic Techniques (3)**

Reviews common immunoassay methodologies and discusses molecular diagnostic techniques, including fluorescent in situ hybridization (FISH); as well as Northern, Southern, and Western immunoblots. Compares different signal and target amplification methodologies. Discusses and applies the foregoing methods to clinical laboratory science.

Prerequisite: CLSM 324; or consent of the instructor.

**CLSM 442 Immunohematology III (1, 2)**

Applies theory and techniques routinely used in transfusion medicine. Emphasizes correlation with clinical experience. Directed study and review include type and screen, antibody identification, investigation of hemolytic disease of the newborn, hemotherapy, and hazards of transfusion. Assesses and interprets data. Overview of donor facilities: donor criteria, records management, component preparation, blood storage, and infectious disease testing. Course completed over two quarters.

Prerequisite: CLSM 341, CLSM 342.

**CLSM 451 Clinical Laboratory Management I (2)**

Introduces management theory, including: management styles, professional communications, business ethics, group theory, team building, process management, process control, and personnel.

**CLSM 452 Clinical Laboratory Management II (2)**

Financial management, with emphasis on concepts, tools, and strategies underlying financial decision making. Topics include health care reimbursement systems, coding, billing, development of operating budgets, and financial reports. Concepts of financial

negotiations, inventory management, and financial planning. Integrates and applies analytical techniques used in the service industries.

### CLSM 453 Clinical Laboratory Management III (2)

Introduces theories of quality management, organization, strategic planning, and the decision-making process. Reviews and analyzes government agencies, legislation, and regulatory bodies that impact laboratory management. Compares quality systems-management philosophies.

### CLSM 455 Special Procedures (1-3)

Correlates and applies theory and clinical experience requiring assessment and interpretation of data. Evaluates and compares methodologies. Directed study and review include the following immunoassays: chemiluminescence, enzyme and radioisotopic assays, microparticle enzyme immunoassay, and fluorescence polarization and nephelometry. Also includes thin-layer and high-pressure liquid chromatography, electrophoresis, spectrophotometry, toxicology, amino acids assay, rapid-detection testing for bacteria and viruses, polymerase and ligase chain reactions, Western blot assays, serology, and current immunologic techniques. Course completed over two quarters.

Prerequisite: CLSM 324, CLSM 333.

### CLSM 471 Clinical Practicum I (1-5)

Thirteen weeks of supervised clinical laboratory experience in selected areas, including parasitology, hematology, urinalysis, and body fluids. Student performs tests routinely done in these areas of the clinical laboratory. Includes selected case studies as part of floor rounds.

Prerequisite: Satisfactory completion of Clinical Laboratory Science Program junior-year courses.

### CLSM 472 Clinical Practicum II (1-5)

Thirteen weeks of supervised clinical laboratory experience in selected areas, including: microbiology and immunohematology, with experience in transfusion services and in a blood-collection facility. Student performs tests routinely done in these areas of the

clinical laboratory. Emphasizes clinical-laboratory quality-control procedures and evaluation. Course completed over two quarters.

Prerequisite: Satisfactory completion of Clinical Laboratory Science Program junior-year courses.

### CLSM 473 Clinical Practicum III (1-5)

Thirteen weeks of supervised clinical laboratory experience in selected areas, including: chemistry and special procedures. Student performs tests routinely done in these areas of the clinical laboratory. Incorporates experience in administrative duties. Course completed over two quarters.

Prerequisite: Satisfactory completion of Clinical Laboratory Science Program junior-year courses.

### CLSM 495 Laboratory Science (3)

Clinical laboratory experience in an area selected for a project designed to develop a degree of specialized technical ability.

### CLSM 496 Clinical Laboratory Science Seminar I (1)

Introduces an assigned capstone project designed to incorporate skills developed and knowledge obtained in the Clinical Laboratory Science Program junior year. Project must be of current interest to the laboratory field. Topics related to the project include literature-search methods, research methods, presentation skills, team building, assessment of impact on clinical outcomes, and analysis and implementation of clinical applications.

Prerequisite: Satisfactory completion of Clinical Laboratory Science Program junior-year courses, or consent of instructor.

### CLSM 497 Clinical Laboratory Science Seminar II (1)

Continues assigned capstone project. Presents relevant contemporary topics.

Prerequisite: CLSM 496; or consent of instructor.

### CLSM 498 Clinical Laboratory Science Seminar III (2)

Students apply educational methodologies and objective writing to the capstone presentation,

incorporating skills developed and knowledge obtained during the Clinical Laboratory Science Program junior and senior years. Project-related topics include presentation skills, assessment of impact on clinical outcomes, and analysis and implementation of clinical applications. Requires regular meetings with faculty advisors to formulate plans and provide status reports on the progress of the capstone project, as well as additional time outside regular class periods.

Culminates with submission and presentation of the assigned capstone project to faculty and administration.

Prerequisite: CLSM 496, CLSM 497; or consent of instructor.

#### CLSM 499 Clinical Laboratory Science Independent Study (1-5)

Project or paper to be submitted on a topic of current interest in an area related to medical technology.

Regular meetings provide student with guidance and evaluation. Elected on the basis of need or interest.

### CELL AND MOLECULAR BIOLOGY

#### CMBL 501 Steady-State Cell (3-8)

The generalized cell; its structural and functional integrity in a thermodynamically hostile environment. Biochemical concepts of the flow of biological information and of free energy. Emphasizes the interplay of information and energy, the integrating role of compartmentalization, and regulation of metabolic pathways. Fall Quarter.

#### CMBL 502 The Cell in Transition (8)

Surveys prokaryotic and eukaryotic molecular biology. Topics include genome structure and organization, recombination and repair, transcription and translation, control of gene expression, posttranslational modification of proteins, protein folding and degradation, gene transfer and mobile genetic elements, control of development, methods and applications of genetic engineering, and bioinformatics. Winter Quarter.

Prerequisite: CMBL 501.

#### CMBL 503 The Differentiated Cell (10)

Biological membranes and cell fibrillar systems as a basis for studying specialized structures and functions of selected differentiated cell types. The role of cell-cell interactions in specialized tasks. Emphasizes underlying molecular mechanisms of specialized cell function. Spring Quarter.

#### CMBL 511 Clinical Correlates (1)

A three-quarter companion sequence to CMBL 501, 502, 503 that utilizes the topics of cell functions presented in the major sequence as a basis for discussion of clinical problems arising from abnormalities in those functions. Fall, Winter, Spring quarters.

#### CMBL 512 Clinical Correlates (1)

A three-quarter companion sequence to CMBL 501, 502, 503 that utilizes the topics of cell functions presented in the major sequence as a basis for discussion of clinical problems arising from abnormalities in those functions. Fall, Winter, Spring quarters.

#### CMBL 513 Clinical Correlates (1)

A three-quarter companion sequence to CMBL 501, 502, 503 that utilizes the topics of cell functions presented in the major sequence as a basis for discussion of clinical problems arising from abnormalities in those functions. Fall, Winter, Spring quarters.

#### CMBL 537 Introduction to Human Genetics (1)

Introduces medical genetics, human chromosomal abnormalities, Mendelian inheritance, multifactorial inheritance, prenatal diagnosis, newborn screening, and genetic counseling. Spring Quarter.

#### CMBL 541 Cellular Structural Elements (3-4)

Comprehensively describes biological membranes and cytoskeletal fibrillar systems that will form a basis for elucidating the functions of specialized cells. Spring Quarter.

**CMBL 542 Signal Transduction and Regulation (2-3)**

Describes signal transduction pathways and other cellular regulatory mechanisms that form the basis of receptor-response phenomena. Spring Quarter.

**CMBL 543 Immunology (4)**

Discusses the role of cell-cell interactions and the mechanism for cellular specialization emphasizing the immune system. Spring Quarter.

**CMBL 544 Cell and Molecular Neurobiology (3)**

A comprehensive, introductory, lecture-based course that introduces basic biomedical science graduate students to the cellular and molecular concepts that underlie most forms of neurobiological phenomena. Selected topics include the molecular and cellular components of neuronal excitation and transmission, neuronal development, differentiation and aging, axonal injury and nerve regeneration, and specific cases of nervous system pathology.

Prerequisite or concurrent: CMBL 541 and CMBL 542 or CMBL 503.

**COMMUNICATION SCIENCES AND DISORDERS**

**CMSD 034 Basic Communication Skills (1)**

Presents effective strategies for accent modification necessary for successful engagement in social and academic interactions. Addresses cultural and linguistic features of American English that may affect communication success.

**CMSD 035 Communication Skills (1)**

Advanced ESL oral communication designed to provide students and professionals, who speak English as a foreign language, with an opportunity to develop and enhance oral communication proficiency in professional and academic contexts, e.g., research and case presentations. Additionally, overall nonnative speech patterns facilitated within these contexts to increase speech intelligibility. Course may be repeated up to eight times for additional credit.

**CMSD 216 Deaf Bicultural-Bilingual Development (2)**

Issues important to speech, language, and literacy development. Clinicianship that is sensitive to deaf culture. May not be taught every year.

**CMSD 217 Beginning Sign Language (3)**

Focuses on learning American Sign Language (ASL) for conversational purposes. Finger spelling, a sign vocabulary of approximately 500 words, and acquisition of the basic grammatical rules of ASL. ASL contrasted with the various sign systems currently being used in educational settings in this country.

**CMSD 267 Speech-Language Pathology Assistant Fieldwork (2)**

Guided observation of clinical management of individuals with communication disorders. Supervised clinical experience in assisting the speech-language pathologist in a school and hospital setting. Course may not be taught every year.

**CMSD 284 Introduction to Speech-Language Pathology and Audiology (3)**

Major types of disorders. Etiology and treatment. Survey course for students majoring in speech-language pathology and audiology, prospective teachers, and others who may encounter speech-language or hearing disorders in their professions.

**CMSD 304 Hearing Science (4)**

Introduces basic theories and laboratory exercises in acoustics, psychoacoustics, and physiological acoustics.

**CMSD 314 Language Analysis for Speech-Language Pathology (4)**

Introduces techniques of linguistic analyses used in the study of phonology, morphology, syntax, and semantics.

**CMSD 318 Transcription Phonetics (3)**

Student develops transcription skills using the International Phonetic Alphabet.

**CMSD 324 Language Disorders of Children (4)**

Impairments of language development in children. Formal and informal assessment of children. Program planning and remediation procedures.

Prerequisite or concurrent: CMSD 276.

**CMSD 334 Phonological and Articulation Disorders (4)**

Definition, classification, etiology, diagnosis, and treatment of phonological/articulation disorders.

Prerequisite or concurrent: CMSD 318.

**CMSD 375 Assistive Technology (2)**

Introduces the development and use of assistive technology. Uses assistive technology for individuals in need of augmentative or alternative means of communication.

**CMSD 376 Anatomy of Speech-Hearing Mechanism (4)**

Anatomy and physiology of auditory-vocal communicative process.

**CMSD 377 Bilingualism and Biculturalism I (2)**

Explores theories and issues of bilingualism and biculturalism, introducing the literature that gives insights into the experiences and achievements of minority college students and young adults.

Opportunities given to examine student's own identity and competence when faced with another culture or language. Critiques the efficacy of various bilingual/dual language-education practices, based on psycholinguistic models.

**CMSD 388 Communication across the Lifespan (4)**

Overview of language development and normal changes over the lifespan. Development of language from infancy to adolescence, and the effects of aging on communication. Includes study of hearing.

**CMSD 417 Acoustic and Physiological Phonetics (3)**

Acoustic and physiological correlates of speech-sound production.

Prerequisites: CMSD 318, CMSD 334, CMSD 376.

**CMSD 424 Adult Language Pathology (4)**

Impairment of language and speech related to organic neuropathology.

**CMSD 426 Behavior Management Applications with Special Populations (4)**

Addresses the principles of behavior modification and discrete-trials training as they apply to persons with autism, developmental delays, congenital syndromes, and attention deficit hyperactivity disorders.

Prerequisites: CMSD 375; PSYC 460.

**CMSD 434 Disorders of Fluency (2)**

Characteristics, theories of etiology, and principles of management of stuttering and other fluency disorders.

**CMSD 435 Voice Disorders (2)**

Definition, classification, etiology, diagnosis, and treatment of voice disorders. Pitch, intensity, quality, and resonance.

**CMSD 444 Organic Speech Disorders (4)**

Introduces the classification, cause, manifestations, assessment, and treatment of craniofacial disorders/cleft palate, tongue thrust, dysarthria, apraxia of speech, and dysphagia.

**CMSD 445 Techniques for ESL and Accent Modification (2)**

Principles and procedures for teaching English as a second language (ESL) and accent modification to bilingual speakers of English.

**CMSD 454 Hearing Problems and Basic Audiometry (4)**

Anatomy and physiology of the auditory mechanism. Nature of the acoustic stimulus, disorders of the ear, problems of the hard-of-hearing. Pure-tone audiometry. Applicable toward California audiometric certification.

**CMSD 464 Hearing Loss and Speech Communication (3)**

Explores methods and techniques used with hearing-impaired children and adults who depend on hearing

aids, cochlear implants, or assistive devices to develop or improve auditory and visual reception and speech production.

Prerequisite: CMSD 454.

#### CMSD 467 Speech-Language Pathology and Audiology Practicum (1-4)

Supervised practice in diagnosis and therapy.

#### CMSD 477 Bilingualism and Biculturalism II (2)

Addresses the clinical competencies and cultural sensitivity needed in dealing with bicultural and bilingual clients. Discusses the impact of such knowledge on assessment and intervention.

#### CMSD 485 Clinical Methods in Speech-Language Pathology (4)

Principles and procedures of speech-language therapy within and across disorders. Methods of determining treatment effectiveness. Regulations governing public school services.

#### CMSD 486 Diagnostic Methods in Speech-Language Pathology (4)

Purposes for assessment. Procedures employed in describing and diagnosing speech-language impairments.

#### CMSD 488 Autism Spectrum Disorders (4)

Characteristics, classifications, theories of etiologies, and principles of management of the autism spectrum disorders. Emphasizes assessment methods and intervention.

Prerequisites: CMSD 324, CMSD 426, CMSD 485, CMSD 486.

#### CMSD 496 Workshops in Speech-Language Pathology and Audiology (1-4)

May be repeated with new content for additional credit.

#### CMSD 499 Speech-Language Pathology and Audiology Independent Study (1-2)

Student submits a project or paper on a topic of current interest in an area related to speech-language

pathology and audiology. Regular meetings to provide the student with guidance and evaluation. Elected on the basis of need or interest.

#### CMSD 511 Graduate Portfolio I (1)

The first in a series of two courses that provides students with a format for demonstrating their acquisition of the knowledge and skills that prepare them for entry into the profession. Students learn the requirements for professional accreditation and certification, and of licensing entities; and develop a professional portfolio.

#### CMSD 512 Graduate Portfolio II (1)

The second in a series of two courses that teaches students the requirements for professional accreditation and certification, and of licensing entities; and that helps them continue to develop an organized means of demonstrating the knowledge and skills acquired during their graduate program. Requires development of a professional portfolio.

#### CMSD 514 Anatomy of Speech-Hearing Mechanism (4)

Addresses anatomy and physiology of basic human auditory-vocal communicative processes. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 515 Transcription Phonetics (3)

Student develops transcription skills using the International Phonetic Alphabet. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 520 Communication Across The Lifespan (4)

Overview of language development and normal changes over the lifespan. Development of language from infancy to adolescence, and the effects of aging on communication. Includes study of hearing. Includes monthly meetings to discuss clinical applications.

#### CMSD 521 Language Disorders of Children (4)

Addresses impairments of language development in children, formal and informal assessment of children,

and programming and planning of remediation procedures. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

Prerequisite or concurrent: CMSD 276.

#### CMSD 522 Organic Speech Disorders (4)

Introduces the classification, cause, manifestations, assessment, and treatment of craniofacial disorders/cleft palate, tongue thrust, dysarthria, apraxia of speech, and dysphagia. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 523 Seminar in Early Childhood Language Disorders (3)

Addresses the principles and procedures in assessment and interventions of language disorders in children. Emphasizes early-language learners (birth to 3 years).

#### CMSD 525 Seminar in School-Aged Child Language Disorders (3)

Addresses the principles and procedures of assessment and intervention of preschool, primary, and adolescent school-age children with language disorders. Emphasizes school-age learning in the areas of semantics, syntax, pragmatics, narrative, and phonological awareness.

#### CMSD 529 Adult Language Pathology (4)

Addresses impairment of language and speech related to organic neuropathology. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 533 Language Analysis for Speech-Language Pathology (4)

Introduces techniques of linguistic analysis used in the study of phonology, morphology, syntax, and semantics. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 534 Phonological and Articulation Disorders (4)

Addresses definition, etiology, characteristics, prevention, assessment, and intervention for phonological/articulation disorders. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 535 Voice Disorders (3)

Discusses diagnosis and intervention techniques used with children and adults displaying a variety of voice disorders. Includes demonstration and operation of instrumentation used for physiological and acoustic analysis of abnormal voice production.

#### CMSD 536 Acoustic and Physiological Phonetics (3)

Addresses understanding and measurement of basic human communication, specifically, the acoustic and physiological correlates of speech-sound production. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

Prerequisite: CMSD 318, CMSD 376, CMSD 534.

#### CMSD 537 Clinical Methods in Speech-Language Pathology (4)

Addresses principles and procedures of speech and language therapy within and across disciplines. Addresses methods of determining treatment effectiveness. Discusses regulations governing public school services. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 538 Diagnostic Methods in Speech-Language Pathology (4)

Discusses purpose of assessment, including procedures employed in describing and diagnosing speech and language impairments. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### CMSD 539 Hearing Problems and Basic Audiometry (4)

Provides anatomy and physiology of the auditory mechanism. Addresses the nature of acoustic stimulus,

disorders of the ear, and problems of the hard-of-hearing. Covers pure-tone audiometry. Applicable for California audiometric certification. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### **CMSD 545 Issues in School Speech-Language Pathology (3)**

Addresses issues confronted by school speech-language pathologists, including PL 94-142, IDEA, NCLB, planning for and conducting IEPs, scheduling and caseload management, evaluating and assessing students from diverse backgrounds, due process, and advocating for students.

#### **CMSD 554 Swallowing Disorders (3)**

Lecture and discussion of the speech-language pathologist's role in the diagnosis and treatment of swallowing disorders in children and adults. Addresses ethical and cultural issues. Emphasizes analysis of current literature and clinical applications. Selected laboratory experiences.

#### **CMSD 564 Auditory Rehabilitation and Hearing Aids (3)**

Studies the mechanisms for achieving hearing rehabilitation—including amplification, speech reading, auditory training, hearing-aid orientation, and speech conservation. Considers hearing-aid function and philosophies of rehabilitation for the hearing impaired (e.g., auditory, aural, manual, and total communication).

#### **CMSD 567 Clinical Practice in Speech-Language Pathology and Audiology, Advanced (1-6)**

Supervised practice in diagnosis and therapy.

#### **CMSD 575 Instrumentation in Speech and Hearing (1)**

Lecture, discussion, and laboratory experience in the areas of speech acoustics, speech production and perception, psychoacoustics, and speech and hearing physiology.

#### **CMSD 576 Instrumentation II (1)**

Guides students through practical application of theoretical information acquired in CMSD 575 regarding speech instrumentation. Individually paced, with guided assistance, so that student can complete competency on selected speech instrumentation.

#### **CMSD 577 Bilingualism and Biculturalism II (2)**

Addresses the clinical competencies and cultural sensitivity needed for dealing with bicultural and bilingual clients. Discusses the impact of such knowledge on assessment and intervention. In addition to scheduled classes, students required to meet monthly to discuss application to clinical populations.

#### **CMSD 584 Seminar in Professional Aspects of Speech-Language Pathology (1)**

Emphasizes ethical, business, and legislative considerations in speech-language pathology. Covers professional issues, such as advocacy, clinical supervision, and diversity.

#### **CMSD 585 Seminar in Professional Aspects of Speech-Language Pathology (3)**

Emphasizes ethical, business, and legislative considerations in speech-language pathology. Students develop a professional resume and practice interviewing. Covers professional issues such as advocacy, clinical supervision, and diversity.

#### **CMSD 587 Counseling in Communication Disorders (3)**

Explores the counseling role of the speech-language pathologist and identifies clinician responsibilities in working with individuals of different cultures, ethnicity, gender, age, and belief systems.

#### **CMSD 588 Directed Teaching in Speech-Language Pathology (8)**

Supervised therapy on the elementary and/or secondary level and/or in a classroom for the severely language-handicapped child.

**CMSD 589 Remediation/Advanced Directed Teaching (1)**

For students who have not successfully completed CMSD 588. Requires remediation or completion of clinical skills necessary for work in the public schools.  
Prerequisite: CMSD 588.

**CMSD 597 Externship in Speech-Language Pathology (8)**

Supervised clinical practice in a medical center, rehabilitation facility, or skilled-nursing facility.

**CMSD 598 Research Methods and Professional Literature in Speech-Language Pathology (3)**

Lecture and discussion that facilitates the student's ability to read and interpret professional literature, develop research ideas, and develop professional writing skills.

**CMSD 599 Remediation/Externship (1)**

For students who have not successfully completed CMSD 597. Requires remediation or completion of clinical skills necessary for work in medical settings.  
Prerequisite: CMSD 597.

**CMSD 679 Seminar: Motor Speech Disorders/Augmentative Communication (3)****CMSD 682 Seminar: Traumatic Brain Injury (3)**

Explores pathophysiology, diagnosis, and rehabilitation of cognitive communication disorders in children and adults with traumatic closed-head injuries. Lecture and discussion format emphasizes reading current professional literature and developing skills in formal and informal assessment and functional treatment.

**CMSD 684 Seminar: Adult Language Disorders (3)****CMSD 685 Seminar: Stuttering (3)****CMSD 687 Seminar: Open Seminar (1-3)****CMSD 687A Seminar: Open Seminar (1)****CMSD 687B Seminar: Open Seminar (1)****CMSD 688 Seminar: Articulation (3)****CMSD 697 Research (1-4)****CMSD 698 Thesis (1-6)****CMSD 699 Directed Study (1-3)**

Independent study on a research project selected in consultation with the advisor. For advanced students. May be repeated once. Student's transcript will show specific area of study, for example: SPPA 699 Directed Study: Adult Language Disorders.

**COMPOSITION****COMP 088 Basic English Composition (2)**

Foundational principles of composition, rules of usage, matters of form, and considerations of style.

**COMP 099 English As an Additional Language (2)**

Focuses on active listening and writing skills, with an introduction to the fundamental structure and vocabulary of the English language.

**COMP 375 Professional Writing in Health Care (2, 3)**

Techniques for specialized writing, with attention to format and content, proofreading and editing, references and footnotes. Equips students to write publishable papers in their professional fields. Additional project required for third unit.

## COUNSELING

### COUN 501 Research Tools and Methodology: Quantitative (3)

Current social research methods; practice in the use of techniques. Considers the philosophy of the scientific method, and familiarizes with counseling test instruments.

Prerequisite: An introductory course in statistics as an undergraduate research methods course.

### COUN 502 Research Tools and Methodology: Qualitative (3)

Qualitative methodology. Prepares students to undertake research projects using the intensive interview method of qualitative research. Explores practical and epistemological issues and problems in qualitative research explored in a workshop format.

### COUN 515 Crisis Intervention and Client Advocacy (3)

Examines theory, techniques, and practice of crisis intervention and client-centered advocacy, with emphasis on development of basic counseling skills and recovery-oriented methods of service delivery. Addresses professional development, socialization, and collaboration among mental health providers. Utilizes multiple presenters from community agencies and recordings of crisis counseling work. Explores crises such as substance abuse, domestic violence, incest, spousal abuse, rape, treating the severely mentally ill, trauma, and disaster. Includes small-group laboratory experiences for practice of crisis counseling skills.

Cross-listing: MFAM 515.

### COUN 524 Psychopharmacology and Medical Issues (3)

Introduces common physical and medical issues related to the practice of counseling. Students learn a biopsychosocial-spiritual model to assess and intervene—emphasizing psychopharmacology, neuroanatomy, the mind-body relationship, and research relative to the field of counseling.

### COUN 528 Culture, Socioeconomic Status and Therapy (3)

Addresses current information and historical narratives related to cultural diversity that impact belief systems, communication patterns, roles, and expectations within human relationships and systems. Examines SES and a wide range of social, racial, and ethnic factors that create meanings for individuals, couples, families, and mental health counselors. Emphasizes populations that become professional partners or clients served within this geographic region. Cross-listing MFAM 528.

### COUN 535 Case Presentation and Professional Studies (4)

Formally presents ongoing individual, marital, and family cases by clinical trainees. Taping, video playbacks, and verbatim reports with faculty and clinical peers. Explores the interface between counselors and other professionals. Examines licensure procedures and application to professional organizations (ACA, CCA, etc.) Develops professional attitude and identity. Limited to students in clinical training.

### COUN 540 Foundations of Counseling and Psychotherapy (3)

Examines history and scope of counseling specialties, principles of collaboration among diverse mental health professionals, factors influencing counseling process, and basic counseling skills. Addresses social ecology impacting consumers and providers within health care. Opens ongoing process of nurturing personal qualities related to counseling practice through deconstruction of personal biases; articulation of personal epistemologies; and development of autobiography, including spiritual formation. Course includes laboratory experience for practice of fundamental counseling skills, with live demonstrations and in-class role play.

### COUN 545 Gender Perspectives (2)

Explores the identities, roles, and relationships of women and men in light of social, cultural, and historical perspectives. Implications for family therapists, educators, and other professionals explored.

### COUN 547 Social Ecology of Individual and Family Development (3)

Studies human individual development and its relationship to the family life cycle from birth through aging and death of family members. Discusses biological, psychological, educational, social, and spiritual development in the context of family, education, and career dynamics involving traditional two-parent families, alternative partnerships, single parents, blended families, and intergenerational communities.

### COUN 556 Psychopathology and Diagnostic Procedures (3)

Explores the history and development of psychopathology and how it relates to current clinical practice in general and marriage and family therapy in particular. Addresses classifications such as ADD/ADHD that affect school achievement and educational placement. Utilizes the multiaxial classifications of the DSM-IV as a practical basis for diagnostics.

Prerequisite: A course in abnormal psychology.

### COUN 568 Groups: Process and Practice (3)

Surveys major theoretical approaches, including individual theories, marital groups, network, and family therapy groups. Group laboratory experience provided in which students apply theory to practice and develop group-leadership skills.

### COUN 574 Psychological Foundations of Education (3)

Explores educational psychology through application of development and learning theories to instruction, achievement motivation, self-esteem, classroom management, supportive and disruptive processes on school sites, campus standards, disciplinary practices, legal/ethical issues. Requires research of effective educational practices and related foundations. Additional research for graduate credit.

Prerequisite: General psychology.

### COUN 575 Counseling Theory and Applications (3)

Counseling theories and applications necessary for work as counselors, therapists, and other mental health

professionals. Historical overview of all theories from psychoanalytic, Adlerian, existential, person-centered, Gestalt, behavior, cognitive behavior, reality, feminist, postmodern (solution-focused and narrative), family systems, and integrative perspectives. Meaningful integration of ethics, theory, and experience on personal and case-study levels.

### COUN 576 Exceptional and Medically Challenged Children (3)

Studies the determinants, characteristics, problems, and adjustments of individuals who deviate markedly from the norm in their mental, physical, emotional, or social aptitudes, traits, and tendencies. Emphasizes education and career planning.

### COUN 577 Assessment in Counseling (3)

Develops competencies and understandings for selecting, administering, and interpreting the major types of standardized tests and inventories used in psychology and education. Theoretical principles and issues presented with hands-on applications. Practicum required.

### COUN 578 College and Career Counseling (3)

Examines vocational and career-choice theories, trends, and related educational programming, including introduction to interest, attitude, and ability evaluation used for career counseling. Includes administration, scoring, and interpretation as part of hands-on application in schools and clinic settings.

### COUN 579 Career Theories and Applications (4)

Study of career theories such as Holland, Ginzberg, Super; as well as multiple approaches, including family and systemic influences on career choice. Application made to values, ethics, meaning, decision making, and individual differences in twenty-first century work places. Includes laboratory experience in the field.

### COUN 584 Advanced Child and Adolescent Development (2, 3)

Advanced study of child and adolescent development using topical instructional format. Explores relationship of development to family attachments, self-esteem,

school achievement, and social competence. Explores counseling interventions related to development of support for relational and educational success.

#### COUN 604 Social Context in Clinical Practice: Gender, Class, and Race (3)

Addresses social inequalities that result in unfairness, health disparities, assaults to personal dignity, and family stress. Examines effects of social hierarchies such as gender, socioeconomic status, race, and sexual orientation on psychological and relational health. Integrates social contextual factors with recovery-based approach to clinical counseling.

#### COUN 614 Law and Ethics (3)

Examines laws, ethical standards, and current trends for mental health professionals as delineated by organizations such as ACA, ASCA, BBS, and CTC. Reviews legal and ethical guidelines for mental health counseling with individuals and families, including topics related to child welfare, separation, divorce, and financial aspects of family maintenance. Emphasizes ethical counselor-client relationships and collaboration with mental health colleagues. Explores counselor's sense of self, human values, professional behavior, scope of practice, and ethics. Assists in understanding impact of culture, poverty, social stress, and biology on the recovery process. Cross-listing: MFAM 614.

#### COUN 624 Individual and Systems Assessment (3)

Applies psychological testing methods in the diagnostic assessment of individual, family, and group behavioral dynamics as encountered in marriage and family counseling and related experience. Observations and/or laboratory experience.

#### COUN 638 Family Therapy and Chemical Abuse (3)

Current theories and treatment of chemical dependencies. Emphasizes family therapy, assessment techniques, understanding of how chemicals affect the mental and biological systems, issues of dual diagnosis.

#### COUN 644 Child Abuse and Family Violence (3)

Identifies and defines psychological and emotional abuse, neglect, sexual molestation, dynamics of family violence, and characteristics of offenders and nonoffenders. Examines modalities and treatment considerations related to individual and group work with children, adolescents, adults abused as children, families, and unrelated group members. Addresses ethical and legal issues, confidentiality, community resources, and multidisciplinary approaches to child abuse assessment and interview techniques. Explores impact of culture, SES, poverty, and social stressors on family mental health. Minimum of 30 contact hours. Cross-listing: MFAM 644.

#### COUN 674 Human Sexual Behavior (3)

Sexuality in contemporary society from the sociopsychological viewpoint. Anatomy and physiology of human sexuality: reproduction, normal and abnormal sexual response, psychosexual development, human fertility, human sexual dysfunction. Integration of systems theory. A minimum of thirty contact hours.

#### COUN 675 Dynamics of Aging (1, 2)

Studies aging and related processes of personal and systemic change, such as developmental and self-actualization challenges, retirement, chronic illness, long term care, losses, and other end-of-life issues. Additional unit of study involves laboratory field experience.

#### COUN 678 Consultation and Program Evaluation (3)

Examines principles and practices of consultation and program evaluation within educational and clinical counseling environments. Emphasizes systemic concepts, leadership development, counselor advocacy, relational competence, team building, and professional accountability of personnel and programs.

#### COUN 679 Professional School Counseling (3)

Integrates knowledge and skills essential for development, implementation, coordination, and supervision of counseling programs within educational institutions—with emphasis on the role and function of school counselors in preschool, elementary, middle, and

secondary grades. Applications made to state graduation requirements, case management, school law, community, consultation, and professional ethics.

### COUN 680 Field Experience in Counseling (3-18)

Student demonstrates knowledge and skills within supervised field experience in schools and other agencies. Competencies include areas of educational assessment, personal and social counseling, academic and career counseling, program development, program coordination and supervision, consultation, legal aspects, and professional ethics. State pupil personnel services (PPS) requires a minimum of 600 clock hours—which must include two educational levels, public school activity, and involvement with students from diverse cultural-ethnic-language backgrounds

Prerequisite: Department approval at least six weeks prior to placement; and state clearances for health, character, and competence in basic skills.

### COUN 681 School Counseling Practicum and Seminar (1)

Focuses on California standards for the pupil personnel services (PPS) credential in school counseling and K-12 public school counseling programs. Addresses professional development and practice of school counseling through readings, case presentation, University mentoring, and group process. Enrollment restricted to students in the M.S. degree in Counseling Program and in the School Counseling Certificate Program. Requires minimum of two quarters of COUN 681 School Counseling and practicum.

### COUN 682 Clinical Counseling Practicum and Seminar (1)

Focuses on California standards for licensure as a licensed professional clinical counselor (LPCC). Addresses professional development and practice of clinical counseling through readings, case presentations, University mentoring, and group process. Enrollment restricted to students in M.S. degree in Counseling Program. Registration in COUN 682 required during every quarter of field experience in clinical counseling.

### COUN 691 Process Approaches to Counseling and Psychotherapy (3)

Explores advanced process approaches to theory and experiential work that are fundamental to understandings of self-awareness, relationship skills, behavioral observations, self-regulatory processes, emotion-focused therapy, and counselor-client contact with individuals and groups. Involves live demonstrations of professional counseling, in-class role play, and laboratory experiences that utilize recording and evaluation of student practice sessions. Enrollment restricted to candidates in clinical degree programs.

### COUN 692 Cognitive Approaches to Counseling and Psychotherapy (2)

Integrates advanced cognitive approaches with experiential work, including current practice of cognitive behavioral therapies such as DBT and TF-CBT. Includes live demonstrations of professional counseling, in-class role play, and laboratory experiences that utilize recording and evaluation of student practice sessions. Enrollment restricted to candidates in clinical degree programs.

### COUN 693 Counseling and Psychotherapy within Systems (2)

Integrates theory and advanced approaches to counseling individuals and groups within various systems. Demonstrates evidenced-based psychoeducation programs, therapy structures, and mental health delivery methods, with emphasis on recovery care and trauma response models. Enrollment restricted to candidates in clinical degree programs.

### COUN 781 School Counseling Field Experience (3)

First course in a series of 3-unit registrations (COUN 781-786) for University-arranged field experience in school counseling. Requires that student document 100 hours of counseling practicum; obtain a certificate of clearance from the California Commission on Teacher Credentialing; and subsequently complete 100 hours of supervised counseling in a public school, with on-site supervision by a PPS-credentialed school counselor. Enrollment restricted to candidates in the M.S. degree in

Counseling Program and/or the School Counseling Certificate Program who are working toward the pupil personnel services credential (PPS) in school counseling.

#### COUN 782 School Counseling Field

##### Experience (3)

Second course in a series of 3-unit registrations (COUN 781-786) for University-arranged field experience in school counseling. Requires that student document 100 hours of counseling practicum; obtain a certificate of clearance from the California Commission on Teacher Credentialing; and subsequently complete 100 hours of supervised counseling in a public school, with on-site supervision by a PPS-credentialed school counselor. Enrollment restricted to candidates in the M.S. degree in Counseling Program and/or the School Counseling Certificate Program who are working toward the pupil personnel services credential (PPS) in school counseling.

#### COUN 783 School Counseling Field

##### Experience (3)

Third course in a series of 3-unit registrations (COUN 781-786) for University-arranged field experience in school counseling. Requires that student document 100 hours of counseling practicum; obtain a certificate of clearance from the California Commission on Teacher Credentialing; and subsequently complete 100 hours of supervised counseling in a public school, with on-site supervision by a PPS-credentialed school counselor. Enrollment restricted to candidates in the M.S. degree in Counseling Program and/or the School Counseling Certificate Program who are working toward the pupil personnel services credential (PPS) in school counseling.

#### COUN 784 School Counseling Field

##### Experience (3)

Fourth course in a series of 3-unit registrations (COUN 781-786) for University-arranged field experience in school counseling. Requires that student document 100 hours of counseling practicum; obtain a certificate of clearance from the California Commission on Teacher Credentialing; and subsequently complete 100 hours of supervised counseling in a public school, with on-site supervision by a PPS-credentialed school counselor. Enrollment restricted to students in the M.S.

degree in Counseling Program and/or the School Counseling Certificate Program who are working toward the pupil personnel services credential (PPS) in school counseling.

#### COUN 785 School Counseling Field

##### Experience (3)

Fifth course in a series of 3-unit registrations (COUN 781-786) for University-arranged field experience in school counseling. Requires that student document 100 hours of counseling practicum; obtain a certificate of clearance from the California Commission on Teacher Credentialing; and subsequently complete 100 hours of supervised counseling in a public school, with on-site supervision by a PPS-credentialed school counselor. Enrollment restricted to candidates in the M.S. degree in Counseling Program and/or the School Counseling Certificate Program who are working toward the pupil personnel services credential (PPS) in school counseling.

#### COUN 786 School Counseling Field

##### Experience (3)

The last course in a series of 3-unit registrations for University-arranged field experience in school counseling. Student provides documentation of 100 hours of counseling practicum and obtains a certificate of clearance from the California Commission on Teacher Credentialing prior to field placement in a public school, where student completes 100 hours of supervised counseling with on-site supervision by a PPS-credentialed school counselor. Enrollment restricted to students in the M.S. degree in Counseling Program and/or the School Counseling Certificate Program who are working toward the pupil personnel services credential (PPS) in school counseling.

#### COUN 791 Clinical Counseling Field

##### Experience (3)

First course in a series of 3-unit registrations (COUN 791-793) for University-arranged field experience in clinical counseling. Requires completion of 100 hours of supervised clinical counseling—under the supervision of a California-licensed mental health professional—of children, adolescents, or adults seen as individuals or as groups within clinical mental health settings. Enrollment restricted to students in the M.S. degree in

Counseling Program who are working toward state licensure as licensed professional clinical counselors (LPCC).

### COUN 792 Clinical Counseling Field Experience (3)

Second course in a series of 3-unit registrations (COUN 791-793) for University-arranged field experience in clinical counseling. Requires completion of 100 hours of supervised clinical counseling—under supervision of a California-licensed mental health professional—of children, adolescents, or adults seen as individuals or as groups within clinical mental health settings. Enrollment restricted to students in the M.S. degree in Counseling Program who are working toward state licensure as licensed professional clinical counselors (LPCC).

### COUN 793 Clinical Counseling Field Experience (3)

Third course in a series of 3-unit registrations (COUN 791-793) for University-arranged field experience in clinical counseling. Requires completion of 100 hours of supervised clinical counseling—under the supervision of a California-licensed mental health professional—of children, adolescents, or adults seen as individuals or as groups within clinical mental health settings. Enrollment restricted to students in the M.S. degree in Counseling Program who are working toward state licensure as licensed professional clinical counselors (LPCC).

## CRIMINAL JUSTICE

### CRMJ 515 Crime and Society (3)

Discusses crime as a social problem and surveys its criminal justice responses. Provides an overview of criminological theory by placing crime in its cultural, social, political, and historical context. Describes the criminal justice system from an institutional perspective; and examines the intersecting roles of the police, forensic science agencies, the courts, and corrections as they aim to promote justice in the context of the social good.

### CRMJ 517 Criminal Procedure and Rules of Evidence (3)

Studies criminal procedures as they are guided by the U.S. Constitution. Focuses on 4th-, 5th-, 6th-, and 14th-Amendment rights with regard to searches and seizures, confessions, due process, jury trials, assistance of counsel, and equal protection under the law. Discusses the introduction of scientific evidence in criminal trials as the point of intersection between science and law. Pretrial discovery rules, access to expert witnesses and testing, as well as federal and state rules of admissibility examined as they shape the content and process of evidence presentation in the courts by expert witnesses.

### CRMJ 518 Legal Discourse (2)

Overviews the different specialties in forensic science. Discusses different kinds of evidence in terms of evidence processing; methods of testing, analyzing, and recording laboratory results; interpreting results as criminal evidence.

### CRMJ 519 Moot Court (2)

Provides an opportunity for students to practice testifying as expert witnesses in a simulated trial setting.

### CRMJ 520 Restorative Justice (3)

Provides a new perspective on the purpose and role of the criminal justice system by examining how restorative justice attempts to forge new relationships between offenders and the people and communities they have victimized.

### CRMJ 574 Criminological Theory (4)

Provides students with a detailed examination of the best-known and most influential theories of crime causation. Examines and evaluates selected theories from sociological, psychological, and behavioral perspectives.

### CRMJ 588 Topics in Forensic Science (2)

Addresses current interests in specific areas of forensic science, offered at the discretion of the Department of Social Work and Social Ecology. Topics may include quality assurance, forensic chemistry and

controlled substances, forensic biology, forensic toxicology, questioned documents, and others. Sections consist of lectures but may also include laboratory experience under the guidance of criminalists.

#### CRMJ 599 Directed Study/Special Project (1-4)

Limited to matriculating master's degree in criminal justice students who wish to pursue independent investigations in criminal justice practice or policy under the direction of a department faculty member.

#### CRMJ 620 Forensic Mental Health (3)

Overviews the specialized mental health and substance-abuse disorders treatment for persons incarcerated in jails, prisons, or special forensic psychiatric hospitals. Reviews effective treatment methods in forensic institutions and examines the current criminal justice system's handling of persons with mental illness and substance-abuse disorders.

#### CRMJ 630 Criminal Justice Planning and Administration (3)

Examines the structure, function, and effective operation of criminal justice agencies and organizations—including law enforcement, the courts, and corrections—within the overall context of the criminal justice system.

#### CRMJ 640 Forensic Evidence (3)

Overviews specialties in forensic science. Discusses different kinds of evidence in terms of evidence processing; methods of testing, analyzing, and recording laboratory results; interpreting the results as criminal evidence.

#### CRMJ 697 Research (2)

Supports students who choose to complete the thesis option. Provides research matriculation in the collection and analysis of data for the thesis. Students required to register for two quarters, or a total of 4 units.

#### CRMJ 698 Thesis (2)

The culminating work of the student's independent research, under the direction of the research advisor.

Registration during the quarter in which student defends research and submits final document to the department and School of Science and Technology.

#### CRMJ 757A Professional Practicum and Seminar (3)

Experiential learning in criminal justice. Students must satisfactorily complete 160 practicum hours and 20 hours of concurrent seminar.

#### CRMJ 757B Professional Practicum and Seminar (3)

Experiential learning in criminal justice. Students must satisfactorily complete 160 practicum hours and 20 hours of concurrent seminar.

#### CRMJ 757C Professional Practicum and Seminar (3)

Experiential learning in criminal justice. Students must satisfactorily complete 160 practicum hours and 20 hours of concurrent seminar.

#### CRMJ 787 Advanced Professional Practicum and Seminar (4)

Experiential learning in advanced criminal justice practice. Students must satisfactorily complete 200 practicum hours and 20 hours of concurrent seminar.

### CLINICAL SOCIAL WORK

#### CSWK 652 Social Problems within Racial and Ethnic Minority Populations (2)

Overviews the most significant social problems affecting racial and ethnic minority populations. Focuses initially on examining the interactive nature of environmental stresses and successful functioning. Further emphasizes the unique practice role of social work in structuring interventions and culturally appropriate treatment approaches.

#### CSWK 666 Women's Clinical Issues and Treatment (2)

Presents students with the major psychosocial considerations and modalities applicable for working with women in clinical settings. Addresses racial, ethnic, and sociopolitical-economic issues.

### CSWK 668 Men's Clinical Interventions and Treatment (2)

Focuses on psychosocial issues faced by men that have implications for clinical interventions. Gives attention to appreciating the influence of life stage, role definitions, race, ethnicity, and gender orientation. Focuses on the psychosocial, emotional, economic, and familial impact of health-status change (including chronic illness, disability, and AIDS).

### CSWK 669 Child and Adolescent Clinical Issues and Treatment (2)

Explores the use of creative and expressive techniques as alternatives to traditional assessment and intervention methods used with children and adolescents in medical, mental health, and other community-intervention settings. Students gain knowledge and skill in the use of play therapy, art therapy, programmed writing, and other expressive intervention techniques.

### CSWK 671 Research Orientation I (2)

First quarter of a three-quarter sequence that introduces doctoral students to the research process, with an emphasis on research-problem identification and formulation. Students continue their orientation with the study of theoretical models and conceptual frameworks. Students complete a series of required readings on the epistemology of theory construction in the social sciences, and prepare a conceptual framework or theoretical model.

### CSWK 672 Research Orientation II (2)

Second quarter of a three-quarter sequence that introduces doctoral students to the research process, with an emphasis on research-problem identification and formulation. Students continue their orientation with the study of theoretical models and conceptual frameworks. Students complete a series of required readings on the epistemology of theory construction in the social sciences, and prepare a conceptual framework or theoretical model.

### CSWK 673 Research Orientation III (2)

Third quarter of a three-quarter sequence that introduces doctoral students to the research process,

with an emphasis on research-problem identification and formulation. Students focus on writing competence and presentation of a theory paper to seminar participants and doctoral program faculty. Paper includes a review of literature, a theoretical framework, and a clearly described research problem. Satisfactory completion of this paper meets the theory-paper requirement of the comprehensive examination.

Prerequisite: CSWK 681, CSWK 672.

### CSWK 676 Advanced Clinical Theory I: Psychoanalytic and Attachment (3)

The first course of a two-part sequence that differentially examines a number of interrelated psychodynamic theories as they apply to clinical practice. Considers differing views of the therapeutic process with clients from a wide range of diagnostic categories. Illuminates theoretical perspectives from classic and contemporary case material. Introduces content that deals with the effects of trauma on psychosocial development, as well as issues of race and historical and cultural context. Discusses salient themes of pioneering psychodynamic theories such as psychic conflict, interpreting resistance, interpreting transference, and the working alliance. Reviews the relevance of the contribution of Attachment Theory as it relates to bio-psycho-social-spiritual developmental normalcy.

### CSWK 677 Advanced Clinical Theory II: Ego Psychology, Self Psychology and Object Relations (3)

The last course of a two-part sequence that differentially examines a number of interrelated psychodynamic theories, as well as ecological perspectives as they apply to clinical practice. Considers differing views of the therapeutic process with clients from a wide range of identity/self-esteem, adaptation, and competency. Illuminates theoretical perspectives from the classic works of Perlman, Hollis, and Hamilton to the more contemporary work of Germain and Gitterman. Uses the Life Model Approach to examine the effects of trauma on psychosocial development, underscoring the influence of race and culture.

**CSWK 681 Research Seminar I (2)**

First quarter of a three-quarter sequence. Introduces students to a wide variety of current research models and methodologies. Faculty and guest lecturers give students depth in various specialized research projects. Students prepare written responses to each presentation. Students present to the faculty the research problem and research design for their research paper. The research paper is a requirement of the comprehensive examination.

**CSWK 682 Research Seminar II (2)**

Second quarter of a three-quarter sequence. Students proceed through the steps of the research design. Students focus on data analysis, presentation, and interpretation. Students present the findings of their research to seminar participants and the doctoral program faculty.

Prerequisite: CSWK 681.

**CSWK 683 Research Seminar III (2)**

Third quarter of a three-quarter sequence. Students focus on writing and presenting a competent research paper to seminar participants and doctoral program faculty. Paper must demonstrate competence in articulating a research question, formulating relevant hypotheses, identifying an appropriate research design, conducting analysis of the data, and presenting and discussing the findings. Satisfactory completion of this paper meets the research paper requirement of the comprehensive examination.

Prerequisite: CSWK 681, CSWK 682.

**CSWK 684 Advanced Developmental Psychopathology I: Children/Adolescents (3)**

A practice course that examines psychopathology, viewed from the intrapsychic and interpersonal perspectives. Central theme analyzes the development and expression of psychopathology from the perspective of person-in-the-environment. Pays particular attention to issues of poverty, class, race, ethnicity, gender, and distributive justice as influences on psychopathology. Emphasizes critical analysis of treatment interventions as it applies to the educator and advanced practitioner. Considers research methods for the study of clinical practice.

**CSWK 685 Advanced Developmental Psychopathology II: Adult Lifespan (3)**

A practice course that examines psychopathology viewed from the intrapsychic and interpersonal perspectives. Places particular emphasis on conducting a developmental diagnosis and evolving psychosocial treatment strategies that are sensitive to different levels of psychic structure and social oppression. Pays particular attention to issues of poverty, class, race, ethnicity, gender, and distributive justice as influences on psychopathology. Emphasizes critical analysis of treatment interventions as it applies to the educator and advanced practitioner. Consideration given to research methods for the study of clinical practice.

**CSWK 686 Advanced Clinical Practice: Clinical Assessment, Diagnosis, and Paradigms of Practice (3)**

Examines the relevance and practical utility of remaining attuned to current assessment and diagnostic protocols within behavioral health professions. Discussion utilizes the Diagnostic and Statistical Manual but is not limited to one structural viewpoint or clinical philosophy. Gives attention to the affect of culture-bound syndromes on assessment and diagnosis. Prepares social worker educators and advanced clinicians for the realities of the nonstatic evolutionary process of assessment and diagnosis. Paradigms of practice explain changes in the bio-psychosocial-spiritual configurations of individual clients, as well as changes in the formulations of assessment and diagnosis over time.

**CSWK 687 Methods of Teaching and Evaluation in Clinical Social Work Education (3)**

Reviews the history of social work education within the changing context of the profession. Examines learning and teaching theories as applied to practice knowledge and skills in social work education. Examines differences in the educational requirements of the settings in which teaching about clinical social work takes place—academic, agency, and supervisory. Discusses modalities and techniques of classroom teaching. Describes and analyzes the national curriculum standards that govern schools of social work at baccalaureate and master's degree levels.

**CSWK 688 Independent Study in Clinical Social Work (1-6)**

Limited to Ph.D. degree clinical social work students who intend to obtain clinical practice experience. A diversity of clinical settings acceptable, as long as psychotherapy is provided.

**CSWK 697 Research (4, 8)**

Credit for dissertation research. Total of 20 units required.

**CSWK 699 Dissertation (12)**

Credit for the doctoral dissertation. Should be taken during the last quarter of registration prior to completion and defense.

**DERMATOLOGY****DERM 891 Dermatology Elective (1.5-18)****DENTAL EDUCATIONAL SERVICES****DNES 305 Etiology and Management of Dental Caries (2)**

Etiology, prevention, and management of dental caries. The specific plaque hypothesis; the role of diet, host resistance, and time in caries. Remineralization, principles of medical management, caries risk assessment, patient education.

**DNES 504 Spanish for the Dental Professional (2)**

Provides specific words, phrases, and dental terminology used by the dental professional to communicate with patients whose primary language is Spanish.

**DNES 700 Orientation to Tooth Morphology (2)**

Tooth morphology, terminology, morphologic characteristics, and the interrelationship of permanent teeth. Laboratory experience waxing various teeth.

**DNES 705 Etiology and Management of Dental Caries (2)**

Etiology, prevention, and management of dental caries. The specific plaque hypothesis; role of diet, host

resistance, and saliva in caries. Diagnosis, lesion progression, remineralization. Principles of medical and surgical management. Caries risk assessment. Establishes a caries-management program. Patient education.

**DNES 707 Personal Development (2)**

Practical introduction to human behavior, self-acceptance, personal development, stress management, and development of a professional manner.

**DNES 708 Introduction to the Dental Profession (1)**

Overview of dentistry as it has evolved into a health care profession. History of dentistry, characteristics of professions, dental ethics, purpose and structure of professional organizations, discussion of the specialties. Introduces personal finance.

**DNES 718 Communication Basics for the Dentist (1)**

Student develops interpersonal competencies in the various professional communication roles expected of a dentist. Topics include team building, cross-cultural communication, dental fears and phobias, mental illness, and behavior change.

**DNES 789 National Board Part I Review (2)**

Reviews basic and preclinical sciences to prepare students for the National Board Examination Part I.

**DNES 794 Public Health Dentistry (2)**

Introduces community dentistry, oral epidemiology, public health programs, preventive dentistry, health education, and volunteer programs.

**DNES 804 Applied Statistics (2)**

Introduces research methodology. Develops critical statistical thinking, enabling students to critique research results reported in dental journals and to understand and correctly interpret the research so that new findings can be properly implemented in dental practice. Provides students with statistical tools necessary to pursue lifetime learning in the dental sciences.

**DNES 806 Research Design (2)**

Developing a research protocol. Authoring skills, role of the mentor and investigator, topic selection, assurances and approvals (animals/IRB), fiscal responsibility, and research misconduct.

**DNES 806L Research Design Laboratory (1)**

Student reviews literature and designs a research proposal in preparation for professional presentation of a table clinic. Student conducts research experiment or project culminating in presentation of the results at a professional meeting.

**DNES 807 Practice Management I (2)**

Management of a dental practice, including: business economic principles, practice-management systems, financial considerations in dental practice, budgeting and debt management, dental service fees and collections, and third-party payment systems.

**DNES 809 Practice Management II (2)**

Establishing and monitoring practice goals, leadership and staff relations, patient relations, and marketing. Employment as a dentist, locating practice opportunities, attaining practice ownership, incorporating technology into dental practice, ongoing professional growth.

**DNES 817 Practice Management I for IDP Students (1)**

Introduction to the management of a dental practice, including: business economic principles, practice management systems, financial considerations in dental practice, budgeting and debt management, dental service fees and collections, and third-party payment systems.

**DNES 818 Practice Management II for IDP Students (1)**

Establishing and monitoring practice goals, leadership and staff relations, patient relations, and marketing. Employment as a dentist, locating practice opportunities, attaining practice ownership, incorporating technology into dental practice, ongoing professional growth.

**DNES 851 The Dentist and the Law (2)**

Addresses statutes, regulations, and case law that govern the practice of dentistry.

**DNES 889 National Board Part II Review (2)**

Reviews basic and clinical sciences and their application in case-based testing format to prepare students for National Board Examination Part II.

**DENTAL HYGIENE****DNHY 216 Oral Health and Preventive Dentistry (2)**

Introduces preventive dentistry concepts, including the history of dentistry and dental hygiene in oral health promotion and disease prevention. Emphasizes the prevention of oral diseases through effective patient education and motivation, including current theories and principles of psychology as they relate to learning and teaching, personality development and change, and interpersonal processes and dynamics in oral health care education. Includes instruction in oral health care techniques for clinical application during concurrent preclinical laboratory sessions.

**DNHY 217 Community Oral Health Theory (2)**

Philosophy, principles, language, and objectives of dental public health. Critical review of literature, including epidemiology of oral disease. Principles and practices involved in teaching community oral health. Lesson plan development. Methods and practice of professional presentation.

**DNHY 218 Community Oral Health Practicum (2)**

Fieldwork in local schools and the community.

**DNHY 290 Research Design and Biostatistics (3)**

Introduces research methodology. Fundamentals of statistical analysis and critique of research data in scientific literature. Student reviews literature and designs proposal in preparation for community oral health practicum.

**DNHY 303 Dental Materials and Techniques (2)**

Materials and equipment used in dentistry. Practice in the manipulation and use of common materials.

**DNHY 305 Oral Anatomy Lecture (2)**

Anatomy of the teeth and surrounding tissues.

**DNHY 305L Oral Anatomy Laboratory (1)****DNHY 309 Radiology I (3)**

Principles governing radiation production and safety relative to radiographic anatomy/dental materials. Fundamentals of intraoral and extraoral techniques, darkroom procedures, and mounting of radiographs. Practical application of techniques. Basic fundamentals of quality assurance.

**DNHY 310 Radiology II (2)**

Continues laboratory techniques. Intraoral and extraoral radiographic interpretation, including anatomy, pathology and interpretation of the disease process of the oral hard tissues. Basic fundamentals of radiographic selection criteria.

**DNHY 321 Preclinical Dental Hygiene I Lecture (2)**

Preclinical phases of dental hygiene, including instrumentation techniques, patient management, intra- and extraoral soft-tissue assessment, charting procedures, disease processes, patient-health assessment, basic operatory preparation, clinical asepsis, and oral health care techniques.

**DNHY 321L Preclinical Dental Hygiene I Laboratory (2)****DNHY 322 Preclinical Dental Hygiene II Lecture (2)**

Continues DNHY 321.  
Prerequisite: DNHY 321.

**DNHY 322L Preclinical Dental Hygiene II Laboratory (2)**

Prerequisite: DNHY 321, DNHY 321L.

**DNHY 323 Preclinical Dental Hygiene III (2)**

Continues DNHY 322.

Prerequisite or concurrent\*: DNHY 321, DNHY 322\*, DNHY 321L, DNHY 322L\*

**DNHY 323L Preclinical Laboratory (1)**

Prerequisite or concurrent\*: DNHY 321L, DNHY 322L\*, DNHY 321, DNHY 322\*.

**DNHY 328 Dental Hygiene Portfolio****Practicum (1)**

Student develops a project to show evidence of personal growth and success in the dental hygiene core competencies.

**DNHY 375 Dental Hygiene Clinic (1)**

Clinical application of skills and techniques of dental hygiene. Prophylaxes on pediatric and adult patients.

**DNHY 376 Dental Hygiene Clinic (4)**

Continues DNHY 375.

Prerequisite or concurrent: DNHY 375.

**DNHY 380 Medically Compromised Patients (2)**

Lectures dealing with the medically compromised patient relative to the use of local anesthetics, drug interactions, need for antibiotic premedication, and necessary modification in treatment planning. Repeated registrations required to fulfill total units.

**DNHY 381 Pharmacology for the Dental Hygienist I (2)**

Introduces the basic principles of pharmacology. Emphasizes the use, actions, and clinical implications/contraindications to medications used by dental patients.

**DNHY 382 Pharmacology for the Dental Hygienist II (1)**

Continues DNHY 381. Emphasizes application through the use of case studies.

**DNHY 390 Introductory Statistics (2)**

Fundamentals of statistical analysis and critique of research data in scientific literature and in student research projects. Inferential and descriptive statistics,

frequency distribution, histograms, bar graphs, and statistical tests. Computer applications in preparing and analyzing research data. Domain II.

#### DNHY 391 Introduction to Grant Writing (2)

An overview of the basic principles and practice of effective public health and education grant writing. Introduces the processes, structures, factors, and essential skills required to develop competitive funded proposals. Describes key elements in proposal preparation; identifies potential funding sources; addresses project design, creating budgets and sustainability plans; and describes the grant-review processes.

#### DNHY 405 Introduction to Periodontics (2)

Reviews gross and microscopic anatomy of the periodontium in health and disease. Primary etiology of periodontal disease. Examines patient's clinical periodontal status. Introduces the diagnostic and treatment-planning process.

#### DNHY 406 Orthodontics Concepts for Dental Hygiene (1)

Basic skeletal and dental growth and development as applied to orthodontics. Treatment modalities. Retention principles and methods. Impressions for orthodontic models. Intraoral measurements for orthodontic procedures. Placing and removing orthodontic separators. Placing, ligating, and removing prepared arch wires. Removing excess cement from orthodontic bands. Checking for loose bands. Seating adjusted retainers and headgear. Instructing the patient. Using ultrasonic scaler to remove excess cement.

#### DNHY 408 Professional Ethics (2)

Develops understanding of hygienist's obligations to the public and to his/her professional association. Defines the ethical and mature conduct expected of professional health care providers. Compares and contrasts professional ethics and personal morality as they relate to dental hygiene practice. Domain I.

#### DNHY 409 Jurisprudence and Practice Management (2)

Laws and regulations that govern the practice of dental hygiene, with special emphasis on California regulations. Standards of government regulations. Obligations of the hygienist to the public and to his/her profession. Domain I.

#### DNHY 410 Cultural Competency in Health Care (2)

Explores cultural competency as it relates to the health, illness, and healing beliefs in caring for people from diverse backgrounds. Addresses Christian perspectives on wholeness.

#### DNHY 411 Dental Hygiene Topics I (2)

Student develops advanced hygiene-care planning skills, with emphasis on knowledge synthesis. Topics cover aspects of patient care, including whole-patient care and patients with special needs.

#### DNHY 412 Dental Hygiene Topics II (2)

Continues instruction in advanced clinical skills. Areas covered include pulp vitality, dentinal hypersensitivity, esthetic whitening procedures, chemotherapeutic agents, and use of technology for the dental hygiene process of care.

#### DNHY 413 Dental Hygiene Topics III (2)

Topics related to employment for dental hygienists. Additional topics include various opportunities in the dental hygiene profession and educational advancement strategies.

#### DNHY 414 Personal Finance (2)

Personal finance topics, including credit, taxes, insurance, real estate, budgeting, housing, and inflation.

#### DNHY 415 Applied Nutrition (2)

Basic concepts of nutrition. Balance, adequacy, nutrient density, dietary choice, weight management, nutrition, and oral health. Addresses nutritional needs of children and the aged, and medically and dentally compromised patients. Dietary assessment and counseling.

**DNHY 416 Dental Health Education I (2)**

Current theories and principles of psychology as they relate to learning and teaching, personality development and change, and interpersonal processes and dynamics.

**DNHY 417 Dental Health Education II (2)**

Principles and practices involved in teaching dental public health. Fieldwork in local schools and community. Methods and practice of professional presentation.

**DNHY 418 Critical Issues of Health Care (2)**

Old age as part of the natural developmental sequence. Physical, psychological, and social needs of the elderly. Ways the allied health practitioner can contribute to wellness and independence. Important issues of HIV/AIDS, including global impact, prevention, treatment, and ethical issues.

**DNHY 419 Essentials of Public Health for Dental Hygienists (3)**

Public health background, issues and concepts—including history from ancient times to HMOs; definitions, organization and infrastructure; function, practices, programs, and services. Contributions of important public health practitioners. Political, social, and economic considerations of public health programs.

**DNHY 421 Research I (2)**

Introduces research methodology. Evaluates literature, emphasizing statistics adequate for interpretation of the literature. Student reviews literature and designs a research proposal in preparation for professional presentation of a table clinic or informational project.

**DNHY 422 Research II (2)**

Review and emphasis of research methodology. Develops literature review, emphasizing statistics adequate for interpretation of the literature. Student continues to develop a research proposal in preparation for professional presentation of a table clinic or

informational project. Student conducts research experiment or project culminating in presentation of the results at a professional meeting.

**DNHY 425 Educational Psychology for Health Professionals (3)**

Fundamentals of psychological principles related to learning in professional and higher education. Major theories of learning and behavior change; as well as research in the areas of cognitive, social, emotional, and moral development. Emphasizes the nature of learning at all age levels, motivation, communication skills; and the influence of cultural, racial, gender, ethnic, and socioeconomic diversity; and stimulates high-level thinking and problem solving.

**DNHY 428 Health Care Management (3)**

Management theory, planning, organizing, directing, and controlling (including budgetary controls). Department productivity and theories of work simplification. Preparation of resumes, interviewing skills, professional attitudes, group theory, and group dynamics. Students spend the last two-to-three weeks doing special projects designed and supervised by their department.

**DNHY 431 Public Health Dentistry (3)**

Philosophy, principles, language, and objectives of public health and public health dentistry. Critical review of the literature.

**DNHY 435 Special Topics in Periodontal Therapy (2)**

Studies advanced periodontal topics and special problems related to periodontal therapy.

**DNHY 436 Ethical and Legal Principles in Education (2)**

Discusses theoretical and practical applications of the ethical and legal principles and issues encountered in an educational setting.

**DNHY 437 Ethical Principles in Public Health for the Dental Hygienist (2)**

Discusses theoretical and practical appraisals of the ethical principles and issues encountered by public health administrators, educators, and investigators.

**DNHY 441 Principles of Education I (3)**

Introduces methods of effective instruction and curriculum design for adult learners. Topics include learning and teaching styles, development of course goals, learning outcomes and objectives; teaching methods and strategies for face-to-face and online instructional presentations, public education, in-service, and continuing education; and cultivation of respect for diversity in learning.

**DNHY 442 Principles of Education II (3)**

Integrates knowledge and skills related to educational methodology with emphasis on experiential teaching; outcomes assessments, including test construction and implementation; curriculum vitae and resume writing; accreditation; leadership in higher education; and promotion and tenure. Students prepare and present lectures and develop an examination for a didactic course.

Prerequisite: DNHY 441.

**DNHY 444 Teaching Practicum (3)**

Develops the student teacher's skills in the preparation and presentation of didactic material relevant to the education of dental hygiene students. Provides practical experience in teaching methods through active participation in all aspects of the assigned didactic or laboratory.

**DNHY 446 Principles of Clinical Instruction (3)**

Provides students experience in developing criteria and methods for teaching strategies and evaluation mechanisms to be used in preclinical and clinical instruction. Emphasizes clinical evaluation procedures and the skills and strategies utilized to promote interpersonal and psychomotor skill development in students.

**DNHY 449 Treating the Special-Needs Patient (3)**

Develops the student-teacher's ability not only to identify patients with special care needs, but also to recognize and understand the appropriate care alternatives. Addresses the role of commonly prescribed medications used for treatment to determine if treatment modifications are appropriate.

**DNHY 450 Junior Clinical Seminar (1)**

A two-quarter course that introduces topics and issues directly and indirectly related to the comprehensive practice of dental hygiene.

**DNHY 451 Clinical Seminar I (1)**

Topics and issues related to clinical competency and development of critical-thinking skills through the use of patient-care examples and class discussion.

**DNHY 452 Clinical Seminar II (1)**

Topics and issues related to clinical competency and preparation for the clinical board examination. Student development of advanced patient-care plans.

**DNHY 453 Clinical Seminar III (1)**

Topics and issues related to clinical competency. Presentation of advanced patient-care plans. Prerequisite or concurrent: DNHY 452.

**DNHY 464 Web-Based Techniques (2)**

Introduces students to use of the Web for instructional purposes. Students evaluate the usefulness of various on-line journals and databases, as well as conduct productive database literature searches. Critical analysis of scientific publications provides practice applying formal rules of evaluating and ranking scientific evidence.

**DNHY 475 Dental Hygiene Clinic I (4)**

Integrates all components of oral health care into the clinical treatment of patients.

Prerequisite or concurrent: DNHY 475.

**DNHY 476 Dental Hygiene Clinic II (4)**

Integrates all components of oral health care into the clinical treatment of patients.

Prerequisite or concurrent: DNHY 475.

**DNHY 477 Dental Hygiene Clinic III (4)**

Integrates all components of oral health care into the clinical treatment of patients.

Prerequisite for concurrent\*: DNHY 475, DNHY 476\*.

**DNHY 478 Advanced Clinical Concepts (2)**

Reviews advanced skills in dental hygiene instrumentation needed as a clinical educator. Topics include alternative fulcrums and hand positions, uses of specialty instruments, and alternative techniques for instrumentation and clinician ergonomics.

**DNHY 484 Legal Issues in Health Care (2)**

Introduces the legal system as it pertains to health care professionals. Concepts of malpractice, litigation, consent for and refusal of dental treatment, advanced directives, and patient confidentiality. Discusses employment issues, including discrimination and sexual harassment. Development of health and safety programs per OSHA regulation, risk management, legal issues in vehicle operations and equipment, and EMS and law-enforcement interactions.

**DNHY 495 Dental Hygiene National Board Preparation (1, 2)**

Lecture and case-based reviews of the entire dental hygiene curriculum—including, but not limited to: prerequisite basic sciences; preclinical, laboratory and clinical sciences; and behavioral sciences. Reviews in preparation for the dental hygiene national board examination will be directly related to concurrent test-taking skill workshops based on standardized testing evidence for success.

**DNHY 498 Dental Hygiene Directed Study (1-10)**

Independent research on problems/topics related to dentistry, dental hygiene, and dental education; collaboration with researcher/faculty member. Written report required.

Prerequisite: DNHY 421, DNHY 422, DNHY 390.

**DNHY 499 Research Writing (2)**

Elective course for students wishing to write their research study for submission to professional journals for possible publication.

**DIETETIC TECHNOLOGY****DTCH 201 Human Nutrition (3)**

Fundamentals of normal nutrition. Carbohydrates, proteins, fats, vitamins, and minerals; their roles in human metabolism. Introduces nutrition in the life cycle. Per week: lecture 3 hours.

**DTCH 202 Food Selection and Presentation (5)**

Foods and their nutritive values. Changes associated with maturation, preservation, table preparation, transportation, and storage in relation to food safety. Nutritional concepts and cultural food patterns in planning and producing meals. Meal service in family, social, and professional settings. Per week: lecture 3 hours, practicum 6 hours. Laboratory fee.

**DTCH 203 The Art of Food Presentation (3)**

Art of food presentation to enhance acceptance of food. Nutritional concepts and cultural food patterns in planning and producing meals. Focuses on meal service at home and in professional and social settings. Per week: lecture 2 hours, practicum 3 hours. Laboratory fee.

Prerequisite or concurrent: DTCH 201, DTCH 202\*; or consent of instructor.

**DTCH 204 Community Nutrition (4)**

Education of community members in different areas related to nutrition requiring knowledge of normal nutrition and life-cycle issues. Nutrition assessment; medical nutrition-therapy topics such as obesity, CHD, diabetes, etc. Legislative process and politics. Program planning, implementation, management, and evaluation. Counseling, teaching, and facilitating group processes. Interpreting data and research findings. Identifying and accessing community-nutrition resources. Community interactions that promote a healthy lifestyle, including but not limited to nutrition topics. Per week: lecture 2 hours, practicum 6 hours.

Prerequisite: DTCH 201, DTCH 239, DTCH 241.

### DTCH 205 Professional Issues in Nutrition and Dietetics (1)

Growth of dietetic technology and of nutrition and dietetics as professions, and their role in the restoration and maintenance of health. Illustrates nontraditional roles of the dietetic technician and the registered dietitian. Emphasizes the development of professionalism accountability, and the responsibility for lifelong learning. Preparation of a professional portfolio.

### DTCH 239 Life-Cycle Nutrition (2)

Management of the normal nutrition needs of individuals across the lifespan. Focuses on pregnancy, lactation, normal infant growth and development, childhood, and adolescence—with an overview of school feeding programs. Adult men and women's health issues. Geriatrics. Per week: lecture 1 hour, practicum 3 hours.

Prerequisite: DTCH 201 or DTCS 301.

### DTCH 241 Introduction to Clinical Nutrition (5)

Basic knowledge of the responsibilities of the clinical dietetic technician and clinical dietitian: review of the medical record, documentation in the medical record, medical terminology, and patient interviewing. Clinical management that includes normal nutrition needs of individuals across the lifespan, with a focus on pregnancy and lactation; normal infant growth and development; childhood and adolescence, with an overview of school feeding programs. Introduces nutrition assessment, adult men and women's health issues, geriatrics, anemia, food allergies, vegetarian patterns. Per week: lecture 3 hours, practicum 6 hours.

Prerequisite: Introductory chemistry, complete sequence with laboratory; anatomy and physiology, with laboratory; or equivalent.

### DTCH 242 Medical Nutrition Therapy I (5)

Basic biochemical and physiological conditions that necessitate dietary modifications in the clinical management of the patient, including cardiovascular disease and hypertension, diabetes, cancer, HIV/AIDS, and other disorders. Continues practice in interviewing and counseling the patient, nutrition assessment and documentation, and use of computer-assisted

nutritional analysis. Ongoing study of medical terminology. Advanced topics: lipids, antioxidants, and phytochemicals. Per week: lecture 3 hours, practicum 6 hours.

### DTCH 243 Medical Nutrition Therapy II (5)

Basic biochemical and pathophysiologic processes that necessitate dietary modifications in the clinical management of the patient with pulmonary disease, including cystic fibrosis; digestive disorders; disorders of the liver, biliary system, and pancreas; alcoholism; renal disease; solid-organ transplantation; sepsis/trauma; metabolic disorders; and neurologic disorders, including spinal cord injury and stroke. Continues nutrition assessment, patient interviewing, and counseling. Applies enteral and parenteral nutrition support when indicated in the clinical management of patients with these conditions; introduces preparation of an in-depth case study. Per week: lecture 2 hours, practicum 9 hours.

### DTCH 246 Nutrition Care in Long-term Care (3)

Applies basic nutrition skills in preparation and service of meals that meet the nutrition prescription for the long-term patient. Emphasizes normal and clinical nutrition, focusing on specific foods that are allowed and not allowed.

### DTCH 271 Quantity Food Purchasing, Production, and Service (5)

Emphasizes methods to achieve quantitative and qualitative standards in quantity food production. Menu planning for institutions. Practicum in food purchasing, production, and service. Open to dietetics students only. Per week: lecture 2 hours, practicum 9 hours.

### DTCH 272 Food-Systems Management (4)

Studies food-service systems. Effective utilization of resources within the food system. Computer application in food-systems management. Per week: lecture 2 hours, practicum 6 hours.

Prerequisite: DTCH 271.

**DTCH 276 Nutrition Care Management in Long-term Care (3)**

Develops and applies management skills in the operation of a dietary department in long-term care. Emphasizes development of quality standards, productivity, menu planning, food production and service, food purchasing, and human resource management.

**DTCH 277 Sanitation and Safety for the Dietary Manager (2)**

Develops and applies sanitation and safety standards in the long-term care facility.

**DTCH 278 Supervised Practice in Dietary Management (2)**

Emphasizes application of didactic instruction in the facility where the student is employed. Includes 150 hours supervised practice.

**DTCH 281 Operations Management in Quantity Food Productions (4)**

Applies operations-management techniques to food-systems management, including: quantitative decision making, development of work standards, and productivity management. Operations-analysis evaluation and quality control. Role of the nutritional services department supervisor. Leadership. Per week: lecture 2 hours, practicum 6 hours.

Prerequisite: DTCH 272.

**DTCH 291 Dietetic Technology Affiliation (2)**

Supervised experience in dietetic technology in community hospitals, extended-care facilities, county hospitals, public health departments, and school food service. Performance review and evaluation. Minimum of three weeks (120 clock hours) at the end of the program.

Prerequisite: DTCH 281.

**DTCH 299 Independent Study in Dietetic Technology (1-5)**

Project or paper submitted by student on a topic of current interest in an area of dietetic technology. Regular meetings provide student with guidance and evaluation.

**DIETETICS****DTCS 300 Contemporary Nutrition (3)**

Provides the essential science foundation needed to adequately comprehend nutrition topics. Includes scientific discussions and a variety of real-life applications and examples. Provides nutrition information that can be utilized by the student to modify his or her diet to meet personal needs. Discusses vegetarian diets and the Seventh-day Adventist approach to health. For students with a limited background in college-level biology, chemistry, or physiology.

**DTCS 301 Human Nutrition (3)**

Fundamentals of normal nutrition. Carbohydrates, proteins, fats, vitamins, minerals; their roles in human metabolism. Introduction to nutrition in the life cycle. Per week: lecture 3 hours.

**DTCS 302 Food Selection and Presentation (5)**

Foods and their nutritive values. Changes associated with maturation, preservation, table preparation, transportation, and storage in relation to food safety. Nutritional concepts and cultural food patterns in planning and producing meals. Meal service in family, social, and professional settings. Per week: lecture 3 hours, practicum 6 hours. Laboratory fee.

**DTCS 303 The Art of Food Presentation (3)**

Art of food presentation to enhance acceptance of food. Nutritional concepts and cultural food patterns in planning and producing meals. Focuses on meal service at home and in professional and social settings. Per week: lecture 2 hours, practicum 3 hours. Laboratory fee.

**DTCS 304 Community Nutrition (4)**

Education of community members in different areas related to nutrition. Requires knowledge of normal nutrition and life-cycle issues. Nutrition assessment; medical nutrition-therapy topics such as obesity, CHD, diabetes, etc. Legislative processes and politics. Program planning, implementation, management, and evaluation. Counseling, teaching, and facilitating group processes. Interpreting data and research findings.

Identifying and accessing community nutrition resources. Community interactions that promote a healthy lifestyle, including but not limited to nutrition topics. Per week: lecture 2 hours, practicum 6 hours.

#### DTCS 305 Professional Issues in Nutrition and Dietetics (1)

Growth of nutrition and dietetics as a profession, and the role of the professional in restoration and maintenance of health. Illustrated nontraditional roles of the registered dietitian and dietetic technician, registered. Emphasis on development of professionalism, accountability, and responsibility for life-long learning. Preparation of a professional portfolio.

#### DTCS 311 Human and Clinical Nutrition for Nursing (4)

Fundamentals of normal nutrition. Carbohydrates, proteins, fats, vitamins, minerals; their roles in human metabolism. Investigates the role of nutrition at various stages in the life cycle of the individual in health and disease. Nutrition intervention in the prevention and treatment of disease in the clinical setting.

#### DTCS 312 Clinical Nutrition for Nursing (2)

Nutrition intervention in the prevention and treatment of disease in the clinical setting.

#### DTCS 321 Nutrition and Human Metabolism (4)

Nutritional requirements and metabolism of essential nutrients for the human organism at the cellular level. Focuses on macro- and micronutrients metabolism. Per week: lecture 4 hours.

Prerequisite: Anatomy and physiology, biochemistry.

#### DTCS 339 Life-Cycle Nutrition (2)

Management of the normal nutrition needs of individuals across the lifespan. Focuses on pregnancy and lactation, normal infant growth and development, childhood, and adolescence—an overview of school feeding programs. Adult men and women's health issues. Geriatrics. Per week: lecture 1 hour, practicum 3 hours.

Prerequisite: DTCS 301.

#### DTCS 341 Introduction to Clinical Nutrition (5)

Basic knowledge of the responsibilities of the clinical dietitian: review of the medical record, documentation in the medical record, medical terminology, and patient interviewing. Clinical management will include normal nutrition needs of individuals across the lifespan, with a focus on pregnancy and lactation normal infant growth and development; childhood and adolescence, with an overview of school feeding programs. Introduces nutrition assessment, adult men and women's health issues, geriatrics, anemia, food allergies, vegetarian diets, nutrition quackery, obesity, eating disorders, and ethnic dietary patterns. Per week: lecture 3 hours, practicum 6 hours.

Prerequisite: or equivalent; anatomy and physiology with laboratory; introductory chemistry.

#### DTCS 342 Medical Nutrition Therapy I (5)

Basic biochemical and physiological conditions that necessitate dietary modifications in the clinical management of the patient, including: cardiovascular disease and hypertension; diabetes; cancer; HIV/AIDS; and other disorders. Continues practice in interviewing and counseling the patient, nutrition assessment and documentation, and use of computer-assisted nutritional analysis. Ongoing study of medical terminology. Advanced topics: lipids, antioxidants, and phytochemicals. Per week: lecture 3 hours, practicum 6 hours.

Prerequisite: DTCS 341; or equivalent course.

#### DTCS 343 Medical Nutrition Therapy II (5)

Basic biochemical and pathophysiologic processes that necessitate dietary modifications in the clinical management of the patient with pulmonary disease—including cystic fibrosis; digestive disorders; disorders of the liver, biliary system, and pancreas; alcoholism; renal disease; solid-organ transplantation; sepsis/trauma; metabolic disorders; and neurologic disorders—including spinal cord injury and stroke. Continues nutrition assessment, patient interviewing, and counseling. Applies enteral and parenteral nutrition support when indicated in the clinical management of patients with these conditions. Introduces preparation of an in-depth case study. Per week: lecture 2 hours, practicum 9 hours.

**DTCS 371 Quantity Food Purchasing, Production, and Service (5)**

Emphasizes methods to achieve quantitative and qualitative standards in quantity food production. Menu planning for institutions. Practicum in food purchasing, production, and service. Open to dietetics students only. Per week: lecture 2 hours, practicum 9 hours.

**DTCS 372 Food Systems Organization and Management (4)**

Studies food-service systems. Effective utilization of resources within the food system. Computer application in food-systems management. Per week: lecture 2 hours, practicum 6 hours.

**DTCS 395 Nutrition and Dietetics Practicum (12)**

Supervised experience in medical nutrition therapy, community, and administrative dietetics in hospitals, outpatient clinics, public health departments, and food systems. Performance review and evaluation. Ten weeks (400 clock hours) during the summer at the end of the junior year.

**DTCS 396 Food Systems Management—Affiliation (6)**

Supervised experience in community dietetics in public health departments and other public health facilities. Performance and review. Five weeks (200 hours) during the summer at the end of the junior year.

**DTCS 397 Community Nutrition Affiliation (6)**

Supervised professional practice affiliation for community nutrition.

Prerequisite: DTCS 305.

**DTCS 405 Senior Seminar (1)**

Develops professional skills, team efforts to market nutrition in the community, volunteer efforts in the community, professional networking, and special topics as determined by nutrition and dietetics faculty. Emphasizes professional portfolio and transition to entry-level nutrition educator/dietitian/food service director. Introduces preparation of an in-depth case study.

**DTCS 425 Pharmacology in Medical Nutrition Therapy (2)**

General overview of pharmacology, including kinetics, dynamics, and therapeutics of drugs. Basic definitions, sources of information, classification of drugs, and principles and mechanisms of drug actions. Emphasizes drug-nutrient interactions.

**DTCS 426 Food Systems Management Affiliation (6)**

Supervised experience in food systems management in health care, education, and commercial food service operations. Performance, documentation, and review. Five weeks (200 hours) during the summer term.

**DTCS 427 Community Nutrition Affiliation (6)**

Supervised professional practice in public health nutrition. Six units (200 hours) in the summer term.

Includes documentation, evaluation, and review.

Prerequisite: DTCS 305.

**DTCS 428 Clinical Nutrition Affiliation (6)**

Supervised professional practice in medical nutrition therapy. Develops knowledge and skills in health care facilities for the delivery of quality nutrition care.

Regular performance review, assessment and activity logs document development of professional skills.

Minimum of five weeks (200 clock hours) during the summer term.

**DTCS 442 Nutrition Counseling (3)**

Applies techniques of nutrition counseling, with emphasis on improving skills in verbal and nonverbal communication, assertiveness, dealing with cultural differences, dealing with death and dying. Skills in administration for the nutrition counselor. Ethical implications in health care. Per week: lecture 2 hours, practicum 3 hours.

**DTCS 445 Nutrition Care Management (4)**

Applies operations analysis, financial management, quantitative decision making, and productivity-management techniques to enhance the delivery of nutrition care. Staff justification, continuous quality improvement, reimbursement for nutrition services, case management, and entrepreneurship.

**DTCS 452 Advanced Nutrition (4)**

Presents advanced topics of normal nutrition, with emphasis on case studies to illuminate metabolic pathways and effects of disease.

**DTCS 453 Advanced Medical Nutrition Therapy (3)**

Case-study approach to the theory and application of critical-care nutrition to complex medical conditions. Interprets and synthesizes the following information: fluid and electrolyte balance, acid/base balance, vital signs, ICU monitoring forms, interpretation of laboratory data and diagnostic tests, medical and surgical history, and drug/nutrient interactions. Focuses on a problem-list approach to nutrition assessment, documentation, intervention, and outcome evaluation. Clinical rotation in critical-care setting. Per week: lecture 2 hours, practicum 3 hours.

**DTCS 461 Food Science (4)**

Chemical, physical, and biological effects of maturation, processing, storage, and preservation on the structure, composition, palatability, product quality, and microbiological safety of food and its additives. Per week: lecture 4 hours, laboratory 3 hours. Laboratory fee.

Prerequisite: Basic foods, human nutrition, organic chemistry.

**DTCS 473 Medical Nutrition-Therapy Affiliation (6, 12)**

Applies knowledge and skills in clinical facilities as a staff dietitian. Regular conferences to aid in developing professional competence. Major applied project relating to clinical or community nutrition. For 6 units, minimum of five weeks (200 clock hours); for 12 units, minimum of ten weeks (400 clock hours).

**DTCS 474 Food Systems-Management Affiliation (3)**

Develops competencies in total quality management; quality control; production planning, including forecasting production demand; linear programming; program evaluation and review technique (PERT), productivity management, including line balancing; financial management, including economics; food and

labor cost control; budgeting project; and financial analysis of operations. Per week: lecture 3 hours, practicum 3 hours.

Prerequisite: DTCS 445.

**DTCS 476 Exercise Physiology in Medical-Nutrition Therapy (3)**

Basic preparation for development and leadership of exercise programs. Includes: exercise-physiology training, acute and chronic effects of exercise, simple assessment of fitness, role of exercise in prevention of common health problems, and management of selected risk factors. Discusses endurance, strength, flexibility, and aerobic exercises. Laboratory included.

Prerequisite: Anatomy and physiology.

**DTCS 479 Food-Systems Management Affiliation (12)**

Applies knowledge and skills in the administrative dietetics area as a staff dietitian. Regular conferences to aid in developing professional experience. Minimum of ten weeks (400 clock hours) during the Spring Quarter of the senior year.

**DTCS 491 Orientation to Research in Dietetics Laboratory (1)**

Experience in nutrition and dietetics research, including hypothetical-formulation research methods, data collection, and presentation of findings. Per week: practicum 3 hours.

Prerequisite: AHCJ 351.

**DTCS 497 Advanced Clinical Experience (0)**

Advanced clinical experience in selected areas of professional dietetic practice.

Prerequisite: DTCS 473 or DTCS 478 or DTCS 479.

**DTCS 499 Nutrition and Dietetics Independent Study (1-5)**

Project or paper to be submitted on a topic of current interest in an area of nutrition and dietetics. Regular meetings provide the student with guidance and evaluation. Elected on the basis of need or interest.

**DTCS 505 Graduate Seminar—Portfolio (3)**

Discusses issues related to the profession of technology and its application in the delivery of nutrition care. Student portfolio documents personal development of advanced management and leadership skills.

**DTCS 506 Professional Seminar in Nutrition and Dietetics (1)**

Review and application of topics in nutrition and dietetics in preparation for professional practice and the registration examination for dietitians. Student presentations covering professional competencies and material essential for high-level practice.

**DTCS 525 Nutrition Care Marketing (3)**

Applies marketing concepts to health care-delivery systems and food and nutrition services. Emphasizes strategic market-management approach for developing and evaluating strategies and programs in food and nutrition services. Includes development of a case study in nutrition care marketing.

**DTCS 526 Pharmacology in Medical Nutrition Therapy (2)**

Pharmacology at the graduate level, including kinetics, dynamics, and therapeutics of drugs. Basic definitions, sources of information, classification of drugs, and principles and mechanisms of drug actions. Emphasizes drug-nutrient interactions.

**DTCS 536 Health Care Financial Management (3)**

Management of the nutrition care-management system involving prospective reimbursement and dietitian billing, business plan development, budget development and analysis of budget variances, operation statements, and productivity related to a department budget.

**DTCS 545 Nutrition Care Management (4)**

Applies classical management theories and current application in the delivery of nutrition care; applies continuous quality management, staffing decision making, operations analysis, business planning, quantitative decision making, and productivity-

management techniques to enhance the delivery of nutrition care. Includes reimbursement for nutrition services, servant leadership, case management, and entrepreneurship. Major paper due at end of quarter.

**DTCS 554 Advanced Medical Nutrition Therapy (3)**

Uses case-study approach to apply critical care nutrition to complex medical conditions. Interprets and synthesizes decision information regarding fluid and electrolyte balance, acid-base balance, vital signs, ICU and surgical history, and drug-nutrient interactions. Focuses on problem-based evaluation. Develops and analyzes a clinical case study. Emphasizes geriatric care and the special needs of this population.

**DTCS 566 Food Chemistry and Experimental Foods (4)**

Chemical, physical, and biological changes of food in processing and preservation. Experimentation in recipe development and improving the nutritional quality of food.

**DTCS 574 Advanced Food Systems Management (3)**

Develops competencies in total quality management; quality control; production planning, including forecasting production demand; linear programming; program evaluation and review technique (PERT); productivity management, including line balancing; financial management, including economics; food and labor cost control; budgeting project; and financial analysis of operations. Per week: lecture 3 hours, practicum 3 hours.

**DTCS 575 Food Systems Management (4)**

Develops administrative skills in effective management of food systems. Qualitative and quantitative standards, budget development and analysis, labor-management relations, computer-assisted information system.

**DTCS 576 Exercise Physiology in Medical Nutrition Therapy (3)**

Develops leadership in the development and presentation of exercise programs. Includes exercise-

physiology training, acute and chronic effects of exercise, simple assessment of fitness, role of exercise in prevention of common health problems, and management of selected risk factors. Discusses endurance, strength, flexibility, and aerobic exercises. Laboratory included.

#### DTCS 579 Capstone Course in Nutrition Care Management (3)

Develops a systems viewpoint of advanced management skills and application of technology. Advanced application of operations management in nutrition care management; development and application of high ethical standards in all aspects of the profession—including patient care, purchasing, and human-resource management. Delivery of food in emergency or crisis situations. Identification of trends that affect the operation of the department—including sustainable food supplies, organic foods, and modified foods.

#### DTCS 589 Capstone Course in Nutrition & Dietetics (3)

Develops a systems viewpoint of advanced medical nutrition therapy, management skills, and application of technology. Advanced application of operations management in nutrition care; development and application of high ethical standards in all aspects of the profession—including patient care; and human-resource management. Identifies trends that affect the operation of the department.

#### DTCS 595 Nutrition and Dietetics Graduate Practicum (12)

Supervised professional practice in medical nutrition therapy, community nutrition, and food systems management. Professional experiences in health care, public health centers, and food production facilities. Performance review and assessment, written weekly reports of learning achieved, and review. Ten weeks (400 clock hours) during the summer term.

#### DTCS 599 Nutrition & Dietetics Independent Study (1-5)

Project or paper to be submitted on a topic of current interest in an area of nutrition and dietetics. Regular meetings provide the student with guidance and evaluation. Elected on the basis of need or interest.

#### DTCS 696 Nutrition Care-Management Project (6)

Develops a nutrition care-management project

#### DTCS 777 Food Systems Management-Affiliation (6)

Five weeks (200 hours) of supervised experience in food systems management in health care or school food service.

Prerequisite: DTCS 575

#### DTCS 778 Clinical Nutrition Affiliation (3-12)

As a staff dietitian, student applies knowledge and skills in medical nutrition therapy. Regular conferences to aid in developing advanced-level professional competence. Major applied project relating to medical nutrition therapy. Taken for five weeks (200 hours) for 6 units in the summer and ten weeks (100 clock hours) for 3 units in the next Autumn Quarter, followed by 10 weeks (400 clock hours) in the Winter Quarter for 12 units.

## EMERGENCY MEDICINE

#### EMDN 821 Emergency Medicine Clerkship (1.5-3)

Two-week required rotation of seven eight-hour emergency department (ED) shifts. A variety of Loma Linda University Community Hospital ED, Loma Linda University Medical Center ED, Loma Linda University Children's Hospital ED shifts (pediatric side); and an administrative shift—including time in the radio room, on the triage desk, and with the transport nurse. Didactic sessions include attendance at emergency medicine residency conferences and grand rounds, and one-on-one learning experience with the senior administrative resident each Monday morning. Also

included are hands-on suture laboratory, EKG reading tutorial, and case studies in reading common emergency radiographs.

### EMDN 891 Emergency Medicine

#### Elective (1.5-18)

Two-week or four-week rotation of four eight-hour emergency department (ED) shifts weekly. Shifts include a variety of Loma Linda University Community Hospital ED, Loma Linda University Medical Center ED, Loma Linda University Children's Hospital ED shifts (pediatric side); and an administrative shift—including time in the radio room, on the triage desk, and with the transport nurse. Didactic sessions include attendance at emergency medicine residency conferences and grand rounds, and one-on-one learning experience with the senior administrative resident each Monday morning. Also included are a hands-on suture laboratory, EKG reading tutorial, and case studies in reading common emergency radiographs.

## EMERGENCY MEDICAL CARE

### EMMC 308 Pharmacology (3)

General overview of pharmacology—including pharmacokinetics, pharmacodynamics, and therapeutics of drugs. Basic definitions, sources of information, classification of drugs, and principles and mechanisms of drug actions. Emphasizes prehospital drug categories.

### EMMC 314 ECG Interpretation and Analysis (2)

Develops basic ECG interpretation skills. Focuses on anatomy and physiology, underlying pathophysiology, and basic rhythm recognition. Overview of related treatments. Emphasizes skills needed by bedside practitioner to differentiate between benign and life-threatening dysrhythmias.

### EMMC 315 Cardiology (3)

Assists the health care provider to develop assessment skills and to increase knowledge of medical management of the patient with acute and chronic cardiovascular disorders. Focuses on anatomy and physiology, underlying pathophysiology, advanced history taking and physical assessment, cardiovascular

pharmacology, electrical modalities, cardiac diagnostic testing, and current research. Emphasizes the emergency care of patients with myocardial infarction and trauma to the cardiovascular system. Assignment includes interaction with cardiac patients and observation of diagnostic studies in the clinical setting.

### EMMC 316 12-Lead ECG Interpretation (2)

Designed for health care providers who are familiar with basic ECG monitoring and are seeking to learn principles of application and interpretation of the 12-lead system. Emphasizes recognition of the acute myocardial infarction. Additional topics include identifying axis deviation, acute ischemic conditions, electrolyte imbalances, bundle-branch block, and infarct impostors. Practical application of information to bedside care of cardiac patients, emphasizing patient assessment, data collection, and use of the 12-lead to guide rapid intervention. Certificate issued upon successful completion of the course.

Prerequisite: Successful completion of a basic ECG interpretation examination.

### EMMC 317 Community Emergency Response Team I (1)

Theory and practice of the community emergency response team role. Addresses disaster preparedness, fire suppression, disaster medical care, search and rescue, crisis psychology, response to terrorism, and team organization and administration. Requires completion of skills laboratory.

### EMMC 325 Current Issues in Emergency Medical Care (2)

Seminar-style discussion on current issues and controversies in emergency medicine. May include topics such as prehospital use of thrombolytic therapy; managed care; primary-care, advanced scope paramedic practice, etc.

### EMMC 331 Theories of Emergency Medical Services I (3)

Introduces prehospital medical services. Roles and responsibilities of paramedics and EMTs. EMS systems design, constraints, and operating problems. EMS

environment and scene issues. Medical-legal issues. History and current state of prehospital care and medical oversight.

### EMMC 332 Theories of Emergency Medical Services II (3)

Investigates the dimensions of emergency medical services. Influence of environment on oxygen delivery. Develops paradigms for EMS. Decision making in the constrained environment. Stress models and role theories. Discusses EMS as sequential environments from public health to critical care.

### EMMC 351 Neonatal Resuscitation (1)

Neonatal anatomy and physiology. Asphyxia and its effects on the newborn. Intubation, medications, and ventilation techniques. Thermoregulation as it relates to resuscitation of the neonate. Skills laboratory for delivery resuscitation, including megacode.

### EMMC 389 Junior Seminars (1)

Discusses issues of professionalism and career development in the whole person context; written, oral, and electronic communication; writing and research skills; use of computer resources.

### EMMC 425 Instruction and Curriculum Design in Emergency Services (3)

Methods of effective instruction and curriculum design for adult learners. Discusses classroom-management techniques and instructional presentation in public education, in-service and continuing education, college classroom, clinical teaching, conferences, and individual guidance. Applies curriculum design theories to development of instructional units and objectives, evaluation procedures, and assessment tools. Introduces learning-experience design, appropriate technology selection, learner-centered handout/syllabus development, and cultivation of respect for diversity in learning.

### EMMC 435 Disasters, WMD, and Terrorism (3)

Introduces EMS response involving large-scale natural disasters and weapons of mass destruction (WMD). Explores prehospital and hospital treatment. Evaluates current issues facing EMS personnel. Crisis

and consequence management, theories of terrorism response, and state and federal resources. Discusses interagency roles, overview of social and psychological aspects, policy development and the media, comparison of response protocols of disaster versus terrorist incidents.

### EMMC 436 Trauma and Surgical Care (2)

Emergency evaluation, assessment, and care of the trauma patient. Prehospital resuscitation, stabilization, and rapid transport. Overview of traumatic injuries, multisystem trauma, surgical management, and care of the trauma patient. Principles of care of the patient after stabilization and surgery. Discusses kinematics, emerging trends in trauma care, trauma centers, and injury-prevention programs.

### EMMC 444 Diversity in EMS (2)

A senior-level emergency medical care core-curriculum course designed to expose students to specialty areas of EMS that often are overlooked. Includes wilderness medicine, search and rescue, event/mass-gathering medicine, sports medicine, aeromedical EMS, water-rescue and dive EMS, hazardous materials and toxicology, tactical and forensic EMS, catastrophic and disaster EMS, and international EMS.

### EMMC 445 Perinatal and Pediatric Care (3)

Emergency evaluation and care of the perinatal and pediatric patient. Cardiac, gastrointestinal, hematologic, renal, and metabolic conditions and treatment. Discusses appropriate versus inappropriate child development and behavior, including developmental stages, temperaments, feeding disorders, sleep disorders, mentally challenged, and attention deficit. Psychosocial aspects of pediatric, child, and adolescent psychiatric disorders.

### EMMC 446 Physical Diagnosis (2)

Systemic review of assessment techniques utilized in patient assessment. Emphasizes assessment of major body systems. Overview of physical examination techniques and interpretation of findings. Lecture, reading, and discussion of case.

**EMMC 447 Geriatrics and Aging (2)**

A forum for discussing current trends in aging and for identifying the needs of an older population. Discusses psychological and social changes in the older adult. Physiologic process of aging and the medical considerations unique to age. Management of geriatric trauma, medical emergencies, and the impact of chronic diseases. Establishing a social response to aging and viable health care-delivery models for older adults.

**EMMC 448 Advanced Physical Diagnosis and Critical Care (2)**

Advanced assessment techniques utilized in management of critical care patient. Emphasizes interpretation of laboratory tests, chest radiographs, arterial blood gases, and other tests used to evaluate the patient. Theories of mechanical ventilation and oxygen therapy. Administration of aerosol treatments, gases, and gas mixtures. Operation of transport ventilators and intravenous pumps and infusion devices.

**EMMC 451 Health Care Management for Prehospital Providers (2)**

Basic principles of management and how they relate to EMS systems. Federal, state, and local authority for EMS delivery and services, resources for and constraints of EMS systems, relationship to and impact on public safety and health care-delivery systems, interface of public and private organizations, current and future issues.

**EMMC 452 Seminars in EMS Management I (2)**

Management theories applied to EMS management and practice. Public/private sector integration, public/media relations, government relations, stress management, management/leadership-skills development, decision making, performance improvement.

Prerequisite: EMMC 451.

**EMMC 453 Seminars in EMS Management II (2)**

Further applies management theories to EMS management and practice. The quality management process and its relationship to continuous learning, promoting organizational/system change, evaluating

effectiveness of performance-improvement projects, strategic planning, and integration of EMS with public safety and public health.

Prerequisite: EMMC 451, EMMC 452.

**EMMC 464 Ethics and Leadership in Emergency Services (2)**

Examines the theory and conceptual framework to view and practice ethical leadership as a collective enterprise. Explores emerging paradigms of leadership. Clarifies and contrasts differing approaches to leadership and leadership development. Compares and contrasts the situational approach of the processes of administration, management, and leadership. Utilizes learner-designated activities to develop a personal philosophy of leadership, assess individual characteristics, and relate those strengths to a leadership situation.

**EMMC 471 Senior Project I (2)**

Project developed, implemented, and evaluated by students for in-depth experience in area of choice. May include research; community projects; and/or education, management, or clinical affiliations. Students work under direct supervision of assigned faculty mentor.

**EMMC 472 Senior Project II (2)**

Continues project developed in EMMC 471.

Prerequisite: EMMC 471.

**EMMC 484 Legal Issues in Health Care (2)**

Introduces the legal system as it pertains to health care professionals. Concepts of malpractice, litigation, consent for and refusal of medical treatment, advanced directives, and patient confidentiality. Discusses employment issues, including discrimination and sexual harassment. Develops health and safety programs per OSHA regulations, risk management, legal issues in vehicle operations and equipment, and EMS and law-enforcement interactions.

**EMMC 489 Senior Seminars (1)**

Discusses issues of professionalism, portfolio development and refinement, short- and long-term goal setting, and development of resume/curriculum vitae.

Prerequisite: Senior-level academic status.

Prerequisite: Senior-level academic status.

**EMMC 498 Special Topics (1-4)**

Special topics in emergency medical care.

**EMMC 499 Special Topics Laboratory/Clinical Practicum (1-8)**

Special topics in emergency medical care laboratory and clinical practicum.

**ENDODONTICS****ENDN 534 Endodontic Treatment Conference (1-2)**

Evaluates and discusses diagnosis, treatment planning, prognosis, and outcome of endodontic treatment cases. Repeated registrations required to fulfill the total units.

**ENDN 601 Principles of Endodontics (2)**

Comprehensive study of various aspects of endodontics. Repeated registrations required to fulfill the total units.

**ENDN 604 Literature Seminar in Endodontics (2)**

Reviews literature pertaining to the principles and practice of endodontics. Repeated registrations required to fulfill total units.

**ENDN 654 Practice Teaching in Endodontics (1)**

Supervised teaching in the endodontic preclinical laboratory and predoctoral clinic. Repeated registrations required to fulfill total units.

**ENDN 697A Research (1)**

Student identifies a research project, prepares a protocol, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

**ENDN 697B Research (1, 2)**

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

**ENDN 698 Thesis (1)****ENDN 725 Clinical Practice in Endodontics (1-8)**

Provides practice and experience in all aspects of endodontics. Emphasizes obtaining experience in treating complex endodontic cases. Repeated registrations required to fulfill total units.

**ENDN 726 Clinical Practice of Implant Dentistry in Endodontics (1, 2)**

Clinical experience in the clinical diagnosis and treatment of patients who may benefit from implant dentistry therapy. Repeated registrations required to fulfill total units.

**ENDN 831 Endodontics I (1)**

Didactic course provides foundational knowledge to prepare the student to manage patients with diseases of pulpal origin.

**ENDN 832 Endodontics II (1)**

Preliminary laboratory course that introduces basic skills necessary to perform endodontic treatment on permanent teeth with uncomplicated root canal systems.

**ENDN 834 Endodontics III (1)**

Didactic course that contains essential information on various topics in endodontics and elevates the students' diagnostic and treatment-planning skills.

**ENDN 835 Endodontics IV (1)**

Laboratory course that provides student with the foundational knowledge and skills necessary to perform endodontic treatment on uncomplicated permanent teeth.

ENDN 875 Endodontics Clinic (1)

## ENGLISH

ENGL 111 Freshman English (3)

Reading skills and techniques. Student practices written communications, with emphasis on expository, critical, argumentative, and research writing. Available only at international program sites.

Prerequisite: Grade of C or better in ESL courses, or satisfactory performance on a placement test.

ENGL 112 Freshman English (3)

Reading skills and techniques. Student practices written communications, with emphasis on expository, critical, argumentative, and research writing. Available only at international program sites.

Prerequisite: Grade of C or better in ESL courses, or satisfactory performance on a placement test.

ENGL 113 Freshman English (3)

Reading skills and techniques. Student practices written communications, with emphasis on expository, critical, argumentative, and research writing. (Available only at international program sites.)

Prerequisite: Grade of C or better in ESL courses, or satisfactory performance on a placement test.

ENGL 300 Research Writing for Health Care Professionals (2)

Students learn to write research-oriented papers using sources located in health care literature

ENGL 478 Theory and Application of Linguistics (3)

Introduces general linguistics. Covers the core linguistic areas of syntax, phonetics, phonology, morphology, and semantics; also peripheral linguistic areas such as sociolinguistics, pragmatics, and psycholinguistics.

## ENGLISH AS A SECOND LANGUAGE

ENSL 077 English as a Second Language (2-10)

Teaches American English to speakers of other languages so that they may use this language for whatever purposes they choose. Meets the needs of English for academic purposes and is also open and adaptable to students with a variety of language needs. Students progress at their own rate as individual language needs in areas such as pronunciation, reading, writing, grammar, and conversation are met. Students expected to have fifteen contact hours for each unit of registration.

ENSL 177 English as a Second Language (2-12)

Enables University students to improve their proficiency in speaking and in understanding spoken, academic American English. Emphasizes appropriate listening and conversation skills, as well as attention to problems arising from the student's native language.

## ENVIRONMENTAL HEALTH

ENVH 414 Introduction to Environmental Health (3)

Introduces an overview of the major areas of environmental health, such as ecology, environmental law, and population concerns; environmental diseases and toxins; food, water, and air quality; radiation; noise; and solid and hazardous waste.

ENVH 421 Cartography and Map Design (3)

Cartographic principles and guidelines, including geodesy, map projections, coordinate and locational systems, scale and distance, direction, vertical factors, mapping methods and techniques, and graphic representation of Earth patterns. Provides the foundation for understanding advanced geospatial technologies including GIS, remote sensing, and global positioning systems.

ENVH 422 Principles of Geographic Information Systems (4)

Comprehensive overview of the concepts, functions, applications, technologies, and trends pertaining to

automated geographic information systems (GIS). Framework for understanding the design, development, implementation, and management of GIS. Topics include: GIS hardware and software considerations, data resources, technical issues and applications in GIS.

#### ENVH 423 Practical Issues in GIS (4)

Key tasks and issues faced by GIS managers and practitioners responsible for implementing and managing health GIS systems in government or private-sector organizations. Presents sound principles and approaches for GIS implementation, as well as project management and organizational issues, to provide the necessary foundation of information on alternatives and pitfalls. Main topics include: GIS needs assessment, software/hardware considerations, financial and staffing requirements, project-scope delineation, project planning and control, pilot projects.

#### ENVH 424 Desktop GIS Software

##### Applications (4)

Introduces state-of-the-art, PC-based GIS applications. Student acquires the conceptual knowledge as well as the hands-on experience needed to optimally utilize available functions within desktop GIS technology for display, editing, analysis, and presentation of spatial and thematic data. Focuses on ArcView GIS and its analytical extensions.

#### ENVH 434 Advanced GIS Software

##### Applications (3)

Comprehensive overview of the concepts, functions, skills, applications, technologies, and trends of modern remote sensing in environmental and health-data acquisition and analysis; as well as applications in related public health issues. Topics include GIS-based image interpretation and data generation, satellite remote sensing, introduction to IDRISI Kilimanjaro and ERDAS Imagine; as well as other modeling tools, such as ArcGIS Modler, Stella, ArcPAD, GPS, CARTALink, etc.

#### ENVH 435 Sources, Capture, and Integration of GIS Data (3)

Provides overview of some of the technologies and methods used in capturing, processing, integrating, and

displaying GIS data. Topics include: global positioning systems, satellite digital imagery, image processing, aerial photography, digital orthophotography, GIS applications for the World Wide Web, and GIS data sources on the Internet. Fundamentals of conceptual and physical design, construction, currency, and integrity of geospatial databases.

#### ENVH 436 Spatial Analysis with GIS (4)

Focuses on GIS functionality suited for modeling and analyzing complex spatial relationships. Basic functions for the selective retrieval of spatial information and the computation or mapping of statistical summaries. Advanced quantitative methods of spatial statistics for analyzing different data-feature types and data structures, and investigating patterns in spatial data. Main topics include: feature manipulation, distance measurement, spatial overlay, proximity analysis, spatial-correlation analysis, point-pattern analysis, spatial interaction, surface analysis, network analysis, grid analysis, and spatial modeling within GIS.

#### ENVH 437 GIS in Public Health (2)

Reviews GIS methods and analytical techniques with potential for improving public health research and practice. Fields of public health considered individually. Identifies specific GIS approaches and techniques. Considers specific disciplines, including: epidemiology, health promotion, international health/development, health care administration, environmental health and contamination, and emergency management. Current applications of GIS technology and methods at the international, national, and local levels.

Prerequisite: ENVH 436.

#### ENVH 438 Introduction to Web GIS (4)

Introduces basic Web-based techniques, design and publication of maps, and geographic analysis through the Internet. Students learn to design Web maps and implement geographic analysis via the Internet. Includes lectures, laboratory exercises, and a final project. Discusses understanding REST Web services, building geospatial mashup applications, optimizing Web map services, creating and using geoprocessing

Web services, and mobile GIS. Students develop and present an Internet mapping service to the class using application of their choice.

### ENVH 498 Health Geographics Senior

#### Project (2, 4)

Three-quarter senior research or applications project conducted during the student's final academic year. Student demonstrates mastery of spatial analysis skills by assessing relevant public and oral presentations. May be repeated for additional credit. Must have a total of 12 units. Paper and oral presentation required during final quarter of registration.

### ENVH 499 Directed Study/Special Project (1-4)

Individual arrangements for undergraduate, upper division students to study under the guidance of a program faculty member. May include readings, literature review, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any undergraduate degree program.

### ENVH 509 Principles of Environmental Health (3)

Rural and urban environmental factors that affect human-health status, enjoyment of the quality of life, and human survival. Focuses within a framework of air, water, food quality, residential environments, industrial sites, recreational patterns, and environmental risk avoidance. Stresses prevention of disease and promotion of healthful environments. Not applicable toward a major in environmental health.

### ENVH 515 Food Quality Assurance (3)

Principles and techniques of quality assurance for food preparation and prevention of food-borne diseases. Sanitary and safe preparation, storage, transportation, and handling of foodstuffs and products—both commercially and residentially. Criteria and practical methodology of inspection and surveillance techniques, facilities design, and plan checking. Food degradation, contamination, additives, and toxicants. Performance criteria for food handlers, with application to environmental techniques in education, enforcement, and consultation. Field trips.

Prerequisite: Program prerequisite courses or written consent of program advisor.

### ENVH 521 Cartography and Map Design (2)

Map design and content, design procedures, production techniques, color selection, use of text, creation of visual hierarchy and visual balance. Explores thematic and general mapping with use of GIS data for mapping purposes. Discusses ArcGIS software. Map critiquing. Provides the foundation for understanding advanced geospatial technology, including GIS, remote sensing, and global positioning systems.

### ENVH 522 Principles of Geographic Information Systems and Science (3)

Comprehensive overview of the concepts, functions, applications, technologies, and trends pertaining to automated geographic information systems (GIS). Topics include: GIS hardware and software considerations, data resources, technical issues and applications in GIS.

### ENVH 523 Practical Issues in GIS (3)

Key tasks and issues faced by GIS managers and practitioners responsible for implementing and managing health GIS systems in government or private-sector organizations. Presents sound principles and approaches for GIS implementation, as well as project management and organizational issues, to provide the necessary foundation of information on alternatives and pitfalls. Main topics include: GIS needs assessment, software/hardware considerations, financial and staffing requirements, project-scope delineation, project planning and control, pilot projects.

### ENVH 524 GIS Software Applications and Methods (3)

Project-oriented course introduces state-of-the-art, PC-based GIS technology and applications. Provides the conceptual knowledge and hands-on experience needed to optimally utilize available functions within desktop GIS technology for modeling, displaying, editing, analyzing, and presenting spatial and thematic data. Focuses on ArcGIS and its analytical extensions, as well as Leica Geosystems ERDAS Imagine.

### ENVH 525 Special Topics in Environmental and Occupational Health (1-4)

Lecture and discussion on a current topic in environmental and occupational health. May be repeated for a maximum of 4 units applicable to degree program.

### ENVH 526 Seminar in Geographic Information Systems (1)

Covers various aspects of GIS technology and its applications to health that might otherwise be excluded from the usual and customary health geoinformatics academic curriculum. Topics of interest include metadata creation and management, health geoinformatics spatial data infrastructure, data interoperability, and mobile mapping technology. Presenters with specific expertise invited to cover areas of interest.

### ENVH 527 Geospatial Technologies for Emergency Preparedness and Management (3)

Applies geospatial data, tools, and methods to preparedness and emergency management. Examines the current status of the use of geospatial data, tools, and infrastructure in preparedness and disaster management. Explores approaches for the effective integration of existing geospatial tools into the framework of emergency preparedness and management; strategies for improving geospatial decision support in this field; and various other issues related to data availability, security, and policies. Emphasizes technology application.

Prerequisite: ENVH 524; prior knowledge of GIS.

### ENVH 535 Integration of Geospatial Data in GIS (2)

Surveys capturing, processing, integrating, and displaying GIS data. Focuses on public health applications of global positioning systems, satellite digital imagery, image processing, aerial photography, digital orthophotography, GIS applications for the World Wide Web, and GIS data sources on the Internet.

### ENVH 536 Spatial Analytic Techniques and GIS (3)

Modeling and analyzing complex spatial relationships through GIS technology. Selective retrieval of spatial information and computation or mapping of statistical summaries. Advanced methods of analysis using spatial statistics.

### ENVH 537 Health Care Geographics (2)

GIS in health services research and the health care sector. Introduces GIS-based methods of mapping, modeling, and analyzing issues, such as patients' access to health care and services, locating new medical facilities and health services, delineating medical service areas and consumer markets. Presents emerging applications of GIS to the scale of individual facilities and the mapping of the human body itself.

### ENVH 538 Introduction to Web GIS (3)

Introduces basic Web-based techniques, design and publication of maps, and geographic analysis through the Internet. Students learn how to design Web maps and implement geographic analysis via the Internet. Includes lectures, laboratory exercises, and a final project. Emphasizes understanding of REST Web services, building geospatial mashup applications, optimizing Web map services, creating and using geoprocessing Web services, and mobile GIS.

### ENVH 539 GIS Applications in Environmental Health (2, 3)

GIS display, modeling, and analysis of environmental hazards/toxicants, as well as population's exposure to environmental contaminants. Includes geography and modeling of hazard sources, hazard surveillance, spatial characterization/modeling of contamination and GIS-enhanced risk assessment/management. Considers the

use of GIS for managing public health safety problems. Presents current applications of GIS in environmental health and disaster/emergency response. Third unit requires additional GIS project that includes substantial analysis of environment data and discussions of results through written and oral presentation.

Prerequisite: ENVH 524 or ENVH 536; or consent of instructor.

### ENVH 546 Introduction to Spatial

#### Epidemiology (2)

Provides overview of GIS-based mapping and statistical methods for describing, displaying, quantifying, and modeling spatial variations in disease, especially with respect to exposures at the small-area scale. Main topics include disease mapping, analysis of spatial clustering of health events, disease surveillance, and ecological modeling. Presents currently implemented spatial epidemiologic applications at the international, national, and local levels.

### ENVH 547 GIS for Public Health Practice (2)

Community health assessment and planning, chronic-disease prevention, public health, health-disparities analysis, and immunization.

### ENVH 549 Remote Sensing Applications in the Health Services (3)

Comprehensive overview of the concepts, functions, skills, applications, technologies, and trends of modern remote sensing in environmental and health data acquisition and analysis, as well as applications in related public health issues. Topics include GIS-based image interpretation and data generation, satellite remote sensing, remote sensing applications, and case studies in public health. Software tools used include introduction to IDRISI Kilimanjaro and ERDAS Imagine; as well as other modeling tools such as ArcGIS, STELLA, ArcPAD, GPS, CartaLinx, etc.

### ENVH 555 Advanced Remote Sensing Application and Systems Modeling in Health and Earth Science (3)

Introduction to 'systems science' as both a conceptual approach to analysis and as a methodology for enhancing research and application within the

environment, health, and earth systems. Provides students with fundamental knowledge of dynamic modeling tools, particularly focused on using STELLA and iThink (from Isee Systems); as well as other tools that integrate spatial and nonspatial datasets, e.g. ArcModeler, Geode, TerraVIVA, Netweaver, and various SAS tools, etc. Applies "systems thinking and analysis" to specific interdisciplinary issues within public health and other applied sciences.

### ENVH 557 Geographical Techniques for Health and Environmental Analysis (3)

Geographic tools for graphic display and spatial analysis of international and U.S. domestic health, epidemiological health services, and environmental health problems and issues. How geographical information systems (GIS); desktop mapping; geocoded, computerized databases and medical geographical applications are used in health and environmental planning, decision making, and research.

### ENVH 558 Global Environmental Health (2)

Global implications of human impact on terrestrial, atmospheric, and marine environments. Considers dilution and dispersion of pollutants, climatic changes, endangered species, desertification, deforestation, vehicle emissions, free-trade agreements, renewable resources, and export of hazardous industry to developing nations. Impact of political, economic, and cultural factors on present and future mitigation strategies.

### ENVH 559 Environmental Health for Developing Countries (3)

Major challenges associated with environmental health and hygiene practices in developing nations. Water-resource development/operations and maintenance, infection and disease-vector control, pesticide management, food quality and availability, solid-waste management, uncontrolled urban settlements, occupational health, and the implications of localized atmospheric pollutants.

### ENVH 566 Outdoor Air Quality and Human Health (3)

Sources and characteristics of air pollutants and their effects on humans and human environment. Methods used in sampling of pollutants, controls, and abatement of air-quality standards violations.

Prerequisite: Program prerequisite courses; or written consent of program advisor.

### ENVH 567 Hazardous Materials and Solid-waste Management (3)

Production, collection, transportation, treatment, recycling, and disposal of solid wastes and hazardous materials. Toxic effects and hazard-producing characteristics of these materials; and the process of disposal-site design, siting, and operation.

Prerequisite: Program prerequisite courses; or written consent of program advisor.

### ENVH 568 Water Quality Assurance (3)

Principles and processes involved in providing safe and adequate water supplies. Water-source development, quantity and quality assurance, source and system design, and inspection parameters. Protection of water sources from contamination; and the abatement of, and correction techniques applied to, degraded water quality. Potable water supplies, fresh and saline bodies of water, and municipal liquid-waste disposal.

Prerequisite: Program prerequisite courses; or written consent of program advisor.

### ENVH 569 Environmental Sampling and Analysis (4)

Practical laboratory experience that serves as an introduction to techniques used in measurement and evaluation of environmental health problems. Techniques pertinent to air, water, and food sanitation. Occupational stressors and radiological health.

Prerequisite: Program prerequisite courses; or written consent of program advisor.

### ENVH 575 Indoor Air Quality (3)

Social and technical factors associated with nonindustrial, indoor air-quality issues. Ventilation,

source assessment, complaint investigations, control measures, sanitation, building design, enforcement criteria, and case studies.

Prerequisite: Microbiology or consent of instructor.

### ENVH 578 Principles of Occupational Health (3)

Issues related to the effects of occupational exposures on health and safety of workers. Principles of preplacement evaluations, biological and environmental monitoring of hazards, surveillance testing, and disease/injury prevention and treatment.

### ENVH 579 Occupational Health Management (3)

Planning, implementing, and evaluating health programs in occupational settings. Principles of case management, cost containment, worker evaluation and placement, referrals, and rehabilitation. Current legislation, regulations, and legal issues.

### ENVH 581 Principles of Industrial Hygiene (3)

Introductory course in industrial hygiene. Industrial/occupational health, hygiene and safety, philosophy, legislation, and regulation.

Prerequisite: Program prerequisite courses; or written consent of program advisor.

### ENVH 585 Institutional Environmental Health (3)

Biological and chemical methods for identifying and controlling the environmental factors influencing health in institutional sites, hospitals, acute- and extended-care facilities, foster- and day-care sites, correctional institutions, schools, and other related institutions. Includes epidemiology and etiology of hospital-acquired infections and their control.

### ENVH 586 Environmental Health Administration (3)

Introduces the administration and management of organizations involved in environmental health within the context of the health care system. Provides an overview of regulatory and policy issues, applicable statutes, and emerging management systems.

**ENVH 587 Environmental Toxicology (3)**

Principles and mechanisms of toxicology as applied to environmentally encountered toxic agents. Toxicants of current public health importance and their pathologic effect on representative tissues and organs. Dose-response relationships; hazard and risk assessment; and determination of toxicity of environmental carcinogens, teratogens, mutagens, pesticides, metals, plastics, and organic solvents.

Prerequisite: Program prerequisite courses; or written consent of program advisor.

**ENVH 589 Environmental Risk Assessment (3)**

Principles and methods of risk assessment associated with human exposure to toxic chemicals and other environmental hazards. Quantitative risk-assessment methodologies and approaches. Ecological risk assessment; risk management issues involved in taking appropriate public health action; risk communication, acceptability, and perception; and informational resources.

**ENVH 605 Seminar in Environmental and Occupational Health (1)**

Areas of current interest. May be repeated for additional credit.

**ENVH 694 Research (1-14)**

Independent research on problems currently receiving study in the department. Research program arranged with faculty member(s) involved. Minimum of thirty hours required for each unit of credit. Limited to qualified master's degree students.

Prerequisite: Consent of instructor responsible for supervision and of program advisor.

**ENVH 696 Directed Study/Special Project (1-4)**

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include readings, literature reviews, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any master's degree program.

Prerequisite: Consent of instructor responsible for supervision and of program advisor.

**ENVH 698 Laboratory (1-6)**

Individual and/or group arrangements for selected students to participate in a structured laboratory experience in specified areas of environmental health.

Prerequisite: Consent of instructor responsible for supervision and of program advisor.

**ENVH 699 Applied Research (2)**

Assignment to private, government, international, or voluntary health agency or other approved organization where practical application of the materials studied on campus is made under the guidance of the department faculty and the organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

Prerequisite: Consent of department advisor and of instructor(s) for responsible supervision.

**ENVH 797 MIP Residency in Environmental Health (12)**

Individual guided study in operational field practice under faculty supervision. Limited to graduate students in the ENVH Master's International Program (M.P.H./MIP) whose projects have been approved by their committees.

**ENVH 798A Field Practicum (6)**

Assignment to private, government, international, or voluntary health agency or other School of Public Health-approved organization in which practical application of the materials studied on campus is made under the guidance of the department faculty and the organization involved. May consist of a research project. May be repeated for additional credit.

Prerequisite: Course requirements; and consent of instructor(s) responsible for supervision and of program advisor.

**ENVH 798B Field Practicum (12)**

Assignment to private, government, international, or voluntary health agency or other School of Public Health-approved organization in which practical application of the materials studied on campus is made

under the guidance of the department faculty and the organization involved. May consist of a research project. May be repeated for additional credit.

Prerequisite: Course requirements; and consent of instructor(s) responsible for supervision and of program advisor.

## ENVIRONMENTAL SCIENCES

### ENVS 401 Earth System Science and Global Change (4)

A systems-level approach to understanding environmental issues. Explores the dynamic biogeophysical processes in the atmosphere, biosphere, geosphere, hydrosphere, and sociosphere. Focuses on acquiring an interdisciplinary understanding of the basic principles and concepts of earth system science and the human dimensions of global environmental change.

### ENVS 402 Earth System Science and Global Change II (4)

Part II of a two-quarter sequence that takes a systems-level approach to understanding environmental issues. Explores the dynamic biogeophysical processes in the atmosphere, biosphere, and sociosphere. Focuses on acquiring an interdisciplinary understanding of the basic principles and concepts of earth system science and the human dimensions of global environmental change.

### ENVS 434 The Environmental Context of Community Health (3)

Studies the biological, ecological, and human environmental factors of a region; and of community health and how environmental factors affect it. Students engage local communities, learn about local ecology and health issues, and participate in ongoing projects that build on community assets and address the key needs. Includes dialogue with community partners as they consider interventions to improve the health of their communities, along with possible implementation strategies. Initial meeting on Loma Linda University campus, followed by three weeks of on-site environmental and community health study in a developing country.

### ENVS 455 Environmental Law and Regulation (4)

Introduces local, state, federal, and global laws and policies regarding the use, ownership, protection, and regulation of natural resources. Emphasizes understanding of the decision-making process behind the rights and limits of private, public, and governmental parties when utilizing or protecting natural resources.

### ENVS 475 Field Practicum: Applied Environmental Sciences (4)

Students and teachers working together in the field apply geospatial tools, environmental and conservation science methods and concepts, and social policy analytical frameworks to sustainability problems within a given ecosystem, community, or region. Study includes both domestic and international locations, e.g., Mesoamerica, the U.S. Southwest, southern California, etc.

### ENVS 485 Seminar in Environmental Sciences (1)

Selected topics dealing with recent developments. May be repeated for additional credit.

### ENVS 487 Internship in Environmental Sciences (4, 8)

Working under the joint supervision of a faculty member and an off-campus sponsor, student develops an environmental sciences academic component within the internship. Student also participates directly in the maintenance or conservation of the environment. May be repeated for additional credit for up to 8 units.

Prerequisite: Internship and registration approval by a faculty member in the Department of Earth and Biological Sciences.

### ENVS 488 Topics in Environmental Sciences (1-4)

Reviews current knowledge in specified areas of environmental sciences. Registration indicates specific topic to be studied. May be repeated for additional credit. Offered on demand.

**ENVS 495 Special Projects in Environmental Sciences (1-4)**

Special project in the field, laboratory, or library under the direction of a faculty member. May be repeated for additional credit.

**ENVS 497 Undergraduate Research (1-4)**

Original investigation and/or literature study pursued under the direction of a faculty member. May be repeated for additional credit.

**ENVS 534 The Environmental Context of Community Health (3)**

Studies the biological, ecological, and human environmental factors of a region; and of community health and how environmental factors affect it. Students engage local communities, learn about local ecology and health issues, and participate in ongoing projects that build on community assets and address the key needs. Includes dialogue with community partners as they consider interventions to improve the health of their communities, along with possible implementation strategies. Initial meeting on Loma Linda University campus, followed by on site environmental and community health study in a developing country.

**EPIDEMIOLOGY****EPDM 414 Introduction to Epidemiology (3)**

Methods and strategies used to investigate distribution, determinants, and prevention of disease in human populations. Disease classification, measures of disease frequency and relative effect, and methods used to isolate effects. Assessments of environmental conditions, lifestyles, and other determinants of disease. Interpretation of results and statistical associations. Critical evaluation of scientific literature. Student presents personal literature study. Laboratory included.

Prerequisite or concurrent: STAT 414

**EPDM 505 Principles of Epidemiology MBA (3)**

Distribution and determinants of health events and disease outcomes in human populations. Assessments of environmental conditions, lifestyles, various treatments, and other circumstances influencing disease and disease prognosis. Measures of disease outcomes

and frequency, and use of these measures in health care. Major types of epidemiological investigation.

Interpretation of statistical associations. Study of how to read and critically evaluate scientific literature.

Presentation of personal literature study. Laboratory included.

Prerequisite: HADM 519; STAT 509 or STAT 521 or STAT 505.

**EPDM 509 Principles of Epidemiology I (0, 3)**

Outlines the principles and methods used to investigate the distribution, determinants, and prevention strategies for disease in human populations. Major topics include measures of disease frequency, measures of effect, measures of potential impact, comparison and contrast of study designs, methods to control confounding and assess causation, statistical significance testing, screening for latent disease, and interpretation of results. Laboratory included.

Prerequisite or concurrent\*: STAT 509\* or STAT 521\* or STAT 505.

**EPDM 510 Principles of Epidemiology II (3)**

Continues exploring topics in cumulative incidence, incidence rates (density), hazard rates, matching, stratified analysis, confounding, interaction, and validity. Includes topics on Mantel-Haenszel relative-effect measures; statistical power; confidence intervals; sample size; and least-significant, relative-risk measures. Covers sources of information bias, selection bias, incidence-prevalence biases, and confounding in epidemiologic studies—including quantitative measures to assess and correct for these biases (i.e., correlation analysis, Bland Altman plot, intraclass correlation coefficient, Cohen's kappa, sensitivity analysis, correction for measurement error in the gold standard, selection ratios). Laboratory includes EPI INFO, SAS, and other computer programs; as well as problem sets used in applied epidemiology.

Prerequisite: EPDM 509.

**EPDM 511 Advanced Epidemiologic Methods (2)**

Studies complex epidemiologic models found in current epidemiology literature. Course topics include: analysis of study design, bias and misclassification,

building a linear model for epidemiologic inference, logistic regression analysis, and analytic strategies used in epidemiologic analysis of complex data sets.

Laboratory component of course involves microcomputer analyses of epidemiologic data sets.

Prerequisite: EPDM 510; STAT 521.

### EPDM 512 Multivariate Modeling in Epidemiology (1, 3)

The third course in epidemiologic methods. Focuses on methods of multivariable modeling common in biomedical data analysis. Covers the theory of these models in lectures on generalized linear models and maximum likelihood methods. Emphasizes use of the logistic regression model to analyze data from case-control studies (simple, nested, matched-pair), cohort studies, and prevalence surveys. Poisson regression techniques. Principles of multivariable model building (variable selection, variable specification, trend testing), model diagnostics (influence, fit), and the power/sample size needed to fit these models. Basic nonparametric survival analysis (hazard [instantaneous, cumulative] and survival [instantaneous, cumulative] functions). Provides the basis for lectures on multivariate survival analyses using the Cox proportional hazard model. Models nonproportional hazards. Laboratory exercises include analysis of epidemiologic data sets in SAS.

Prerequisite: EPDM 509; STAT 522.

### EPDM 515 Clinical Trials (3)

Theory and practice of intervention studies, including community and clinical trials. Design, analysis methods, randomization, masking schemes, management of complex trials, ethical considerations, and meta analysis. Laboratory includes: power calculations, interpretation of published reports, randomization, and design of trials.

Prerequisite or concurrent: EPDM 509.

### EPDM 525 Special Topics in Epidemiology (1-4)

Lecture and discussion on a current topic in epidemiology. May be repeated for a maximum of 4 units applicable to degree program.

Prerequisite or concurrent: EPDM 509.

### EPDM 528 Applied Epidemiology and Clinical Preventive Services (3)

Applied epidemiology concepts for acute and chronic diseases for which prevention is available. Includes concepts in infectious disease epidemiology, chronic disease epidemiology, and recommendations for clinical preventive services, such as screening, prophylaxis, counseling, and immunizations.

Prerequisite: EPDM 509

### EPDM 534 Epidemiology of Maternal-Child Health (3)

Applies epidemiologic issues to maternal and child health topics, emphasizing analysis and interpretation of data. Introduces key studies and standard data sets used to describe and compare maternal and child health outcomes both domestically and globally. Includes framework for critical review of studies in the field. Limited to maternal and child health, epidemiology, and doctoral students; or consent of instructor.

Prerequisite: EPDM 509; STAT 509 or STAT 521.

### EPDM 544 Epidemiology of Infectious Disease (3)

Introduces students to the epidemiologic and public health aspects of infectious diseases occurring both in developing and developed countries. Emphasizes long-standing diseases that remain real or potential problems; diseases with changing ecology due to immunization, medical treatment and other preventive programs; and infectious diseases that have become problems through the evolution of modern society. Discusses the role of surveillance systems in infection control. Examines the relationship between the epidemiology and ecology of disease and the possibility of preventive measures.

Prerequisite: EPDM 509.

### EPDM 555 Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement (3)

Epidemiologic methods of outcomes research and continuous quality-improvement techniques in medical care processes. Medical care as a process, use of control charts in process improvement, measurement of quality of care, and patient satisfaction with medical care. Cost

benefit, cost effectiveness, cost utility, and decision-tree analysis applied to medical care and public health.

Laboratory includes: demonstration of process control charts, flow charts, Pareto diagram, decision tree, and data scanning.

Prerequisite: EPDM 509 or EPDM 510.

### EPDM 564 Epidemiology of Chronic Diseases (3)

Provides a critical review of the epidemiology of the leading chronic diseases, including cardiovascular disease, cancer, and diabetes. Acquaints students with coding systems for the diseases. Emphasizes research that relates to control and prevention of these diseases. Acquaints students with experimental designs and analytic techniques commonly used in chronic disease epidemiology. Discusses experimental and epidemiologic evidence relating risk factors such as diet, smoking, exercise, and biologic variables; as well as interactions between genes and environment to these chronic diseases. Incidence, secular trends, burden, mortality, survival, and surveillance as they relate to chronic diseases. Brief overview of anatomy, pathology/morphology of these diseases.

Prerequisite or concurrent: EPDM 509.

### EPDM 565 Epidemiology of Cancer (3)

Critically reviews epidemiology of the major causes of cancer death in developed nations, including anatomic (ICD-9 and ICD-0-2/3) and morphologic/pathogenic (ICD-0-2/3) classifications schemes. Emphasizes research and health-promotion issues that relate to control and prevention of cancer. Topics include pathology vocabulary; multistage model of carcinogenesis; sources of cancer data; validity and value of population measures of cancer; magnitude of the cancer problem; trends in cancer frequency, incidence, burden, mortality, and survival; surveillance objectives and methods; consistent risk and protective factors for major cancer types; the role of infectious diseases in cancer etiology and progression; nutrition and cancer; screening objectives, recommendations, and controversies; and interactions.

Prerequisite: EPDM 509.

### EPDM 566 Epidemiology of Cardiovascular Disease (3)

Descriptive epidemiology of the major cardiovascular diseases, including: myocardial infarction, sudden death, angina pectoris, hypertension, and stroke. Acquaintance with experimental designs and analytic techniques commonly used in cardiovascular epidemiology. Experimental and epidemiological evidence relating risk factors such as diet, smoking, blood lipids, blood pressure, and exercise to cardiovascular diseases. Acquaintance with the design and results of the major intervention studies.

Prerequisite: EPDM 509.

### EPDM 567 Epidemiology of Aging (3)

Global demographic trends, determinants, and measures of population-age structure. Health, morbidity, disability, and mortality; comprehension of morbidity and mortality; mechanisms, biomarkers, and genetics of aging. Aging research: surveys, clinical trials, and ethics. Chronic conditions/diseases (i.e., dementia, musculoskeletal conditions, osteoporosis, obesity, diabetes, cardiovascular disease); risk factors (i.e., diet, smoking, physical activity); and prevention. Economic aspects, drug use. Laboratory includes critical evaluation of current literature reports.

Prerequisite or concurrent: EPDM 509 or EPDM 510; STAT 509 or STAT 521.

### EPDM 568 International Epidemiology (2)

Introduces research methods for conducting global health surveys using complex sampling techniques (cluster sampling, lot quality-assurance sampling). Exercises include data analysis and programming with EPI INFO, survey design, and geographic information systems.

Prerequisite: EPDM 509; STAT 509 or STAT 521.

### EPDM 588 Environmental and Occupational Epidemiology (3)

Evaluates epidemiologic principles and methodologic approaches used in the assessment of environmental exposure, selection of applicable study designs, and determination of analytic methods used in the investigation of environmental health problems within populations. Epidemiologic analysis of selected and

controversial environmental exposures that impact significantly on public health practice and on disease morbidity and mortality outcomes.

Prerequisite: EPDM 509 or EPDM 510; STAT 509 or STAT 521.

#### EPDM 605 Seminar in Epidemiology (1)

Presentations and discussions of topics of current interest in epidemiology. Students work in groups on topics selected at the beginning of a quarter. Requires a written report and oral presentation at the completion of a project. Seminar facilitates maximal interaction among doctoral students and faculty to facilitate professional development. Doctoral students required to enroll Fall Quarter each year they are in the program, but attendance and participation are required Fall, Winter, and Spring quarters.

Prerequisite: EPDM 509; doctoral degree status or consent of instructor.

#### EPDM 625 Special Topics in Epidemiology (1-3)

Lecture and discussion on a current topic in epidemiology. May be repeated for a maximum of 6 units applicable to degree program. Recommended for doctoral students.

Prerequisite: EPDM 509.

#### EPDM 635A Epidemiological Studies of Seventh-day Adventists A (1)

Background, objectives, methodologies, results, and public health implications of most epidemiological studies conducted on Seventh-day Adventists worldwide, but especially in California. Data on the health behaviors and health/disease experience of this low-risk population. Discussion of potential biases and other issues.

Prerequisite or concurrent: EPDM 509

#### EPDM 635B Epidemiological Studies of Seventh-day Adventists B (1)

Discusses methodological issues pertinent to studies of Adventists, including the evidence for the longevity of California Adventists. Student critically evaluates current literature on epidemiologic studies of Adventists—including a thorough discussion of lifestyle, selection, and survival hypotheses—and

presents findings during a discussion session. Student writes a scholarly paper on one topic relevant to epidemiologic studies among Adventists.

Prerequisite or concurrent: EPDM 635A.

#### EPDM 682A Seminar in Preventive Medicine (1)

Provides an overview of preventive medicine topics. Includes a framework for critical review of scientific literature, as well as opportunities to develop additional necessary professional skills. General guidance in development of a research project, including design, analysis, and interpretation. Restricted to preventive medicine residents.

#### EPDM 682B Seminar in Preventive Medicine (1)

Provides an overview of preventive medicine topics. Includes a framework for critical review of scientific literature, as well as opportunities to develop additional necessary professional skills. General guidance in development of a research project, including design, analysis, and interpretation. Restricted to preventive medicine residents.

Prerequisite or concurrent: EPDM 509; STAT 509 or STAT 521

#### EPDM 682C Seminar in Preventive Medicine (1)

Provides an overview of preventive medicine topics. Includes a framework for critical review of scientific literature, as well as opportunities to develop additional necessary professional skills. General guidance in development of a research project, including design, analysis, and interpretation. Restricted to preventive medicine residents.

Prerequisite or concurrent: EPDM 509; STAT 509 or STAT 521.

#### EPDM 682D Seminar in Preventive Medicine (1)

Provides an overview of preventive medicine topics. Includes a framework for critical review of scientific literature, as well as opportunities to develop additional necessary professional skills. General guidance in development of a research project, including design, analysis, and interpretation. Restricted to preventive medicine residents.

### EPDM 683A Preventive Medicine in Public Health (1)

Includes advanced concepts in epidemiology, as necessary for the public health medical professional. Provides a supervised opportunity for development of leadership and presentation skills. Restricted preventive medicine residents.

Prerequisite or concurrent: EPDM 509; STAT 509 or STAT 521.

### EPDM 683B Preventive Medicine in Public Health (1)

Includes advanced concepts in epidemiology, as necessary, for the public health professional. Provides a supervised opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

Prerequisite or concurrent: EPDM 509; STAT 509 or STAT 521.

### EPDM 683C Preventive Medicine in Public Health (1)

Includes advanced concepts in epidemiology, as necessary, for the public health professional. Provides a supervised opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

Prerequisite or concurrent: EPDM 509; STAT 509 or STAT 521.

### EPDM 683D Preventive Medicine in Public Health (1)

Includes advanced concepts in epidemiology, as necessary, for the public health professional. Provides a supervised opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

### EPDM 685 Preliminary Research Experience (2)

Experience gained in various aspects of research under the guidance of a faculty member and by participation in an ongoing project. Must be completed prior to beginning dissertation research project. Limited to doctoral degree students.

### EPDM 692 Research Consultation (1-4)

Individual advice on project design, data collection, analysis, and evaluation. Restricted to School of Public Health students and staff.

### EPDM 694 Research (1-14)

Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

Prerequisite: Consent of instructor responsible for supervision and of academic advisor.

### EPDM 696 Directed Study/Special Project (1-4)

Individual arrangements for advanced students to study under the guidance of a faculty member. May include readings, literature reviews, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any master's degree program.

Prerequisite: Consent of instructor responsible for supervision and of program advisor.

### EPDM 698 Dissertation (1-14)

Based on the doctoral research study, student writes a dissertation in submitted-paper format; submits the individual manuscripts to scientific journals; and responds to reviewers' comments.

### EPDM 699A Applied Research (1)

Assignment to private, government, international, or voluntary health agency or other department-approved organization where practical application of the materials studied on campus is made under the guidance of the department faculty and the organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

### EPDM 699B Applied Research II (1)

Assignment to private, government, international, or voluntary health agency or other department-approved organization where practical application of the materials studied on campus is made under the guidance of the department faculty and the

organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

#### EPDM 699C Applied Research III (1)

Assignment to private, government, international, or voluntary health agency or other department-approved organization where practical application of the materials studied on campus is made under the guidance of the department faculty and the organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

#### EPDM 699D Applied Research IV (1)

Assignment to private, government, international, or voluntary health agency or other department-approved organization where practical application of the materials studied on campus is made under the guidance of the department faculty and the organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

#### EPDM 798 Field Practicum (1-4)

Provides opportunities for students to integrate the epidemiologic skills they have learned with public health practice in a community setting. Students seeking the M.P.H. degree in epidemiology typically register for at least two, 1-unit EPDM 798 courses, for a minimum of 240 hours of practical experience in public health.

### EARTH SYSTEM SCIENCE

#### ESSC 541 Remote Sensing in the Social, Health, and Biosciences (4)

Provides students fundamental, modern, remote sensing knowledge and skills for environmental data acquisition and analysis; as well as applications in related social, earth, health, and biosciences. Topics include GIS-based image interpretation and spatial data generation; satellite remote sensing applications; and case studies in sustainable development, social policy, health, and biosciences. Spatial analysis software tools

used include Clark Laboratories' IDRISI Kilimanjaro and Leica-Geosystems' ERDAS Imagine; as well as ArcPAD, ArcGIS, GPS/Garmin-Recon.

### FAMILY MEDICINE

#### FMDN 599 Directed Elective Study (1.5-18)

#### FMDN 701 Family Medicine Clerkship (1.5-6)

Students spend a four-week rotation in family practice clinical setting. Assignments vary and may be with community physicians or in residency-based clinics. Emphasizes integrating biomedical, psychosocial, and spiritual issues, as well as appropriate preventive care. An OSCE is given at the end of every twelve-week block in conjunction with pediatrics.

#### FMDN 821 Family Medicine

##### Subinternship (1.5-6)

Students spend four weeks participating as members of the Family Medicine Inpatient Service team providing patient care at Loma Linda University Community Medical Center and affiliated hospitals, and two afternoons seeing patients in a residency-based outpatient clinic.

#### FMDN 891 Family Medicine Elective (General Family Medicine) (1.5-18)

Students work with Loma Linda Family Practice faculty to provide both inpatient and outpatient care.

### FAMILY STUDIES

#### FMST 504 Advanced Family Studies (4)

A critical survey of the research and theory growing out of the fields of family studies and family sociology. Provides students with a background on the social and historical factors that form the contexts within which families are defined and function. Students make application of course material to the practice of marriage and family therapy.

**FMST 505 Social Research Methods:****Quantitative (3)**

Analyzes current social research methods. Practice in the use of techniques. Scientific method.

Prerequisite: Introductory course in statistics as an undergraduate research-methods course.

**FMST 506 Advanced Social Research Methods (3)**

Qualitative methodology. Prepares students to undertake research projects using the intensive interview method of qualitative research. Practical and epistemological issues and problems in qualitative research explored in a workshop format.

**FMST 514 Cross-cultural Counseling and Family Values (2)**

Structure and function, changing patterns, future in urban society. Relationship of changes in society to widespread family problems. Student becomes familiar with a wide range of social and ethnic backgrounds—including but not limited to people of color, Asians, Native Americans, and Hispanics.

**FMST 515 Professional Issues in Family-Life Education (3)**

Surveys the professional practice of family life education, examines the legal and ethical issues that govern the practice of family life education, investigates the major policies and legal codes that govern family behavior in the United States and other countries, evaluates strategies for professional development in the field, and delineates boundaries regarding the scope of practice in this field and in family therapy.

**FMST 517 Hispanic Family: Theory and Research (3)**

Covers three areas pertaining to Hispanic family issues. Covers a psycho-sociocultural theoretical framework; explores an array of issues (e.g., acculturation, biculturalism, values development, crisis and conflict); develops a model for understanding the multicultural family in the U.S.A. based on Hispanic family experiences.

**FMST 518 Advanced Theories in Child Development (3)**

Examines child development from the perspectives of family systems, symbolic interactionism, structural functionalism, family development, social construction, and others. Investigates theories and stages of development—from birth through adolescence—from classical and contemporary literature in the physical, cognitive, language, social, emotional, and moral development domains.

**FMST 519 Teaching in Higher Education (2)**

Discusses theory, techniques, and processes in the teaching of MFT, including an examination of didactic and experiential techniques.

**FMST 524 Family Resource Management (2)**

Challenges of health care costs, child care, reorganizing and downsizing organizations, managing cultural diversity, and equal employment opportunity. Responding to needs of families and employees through consistent and effective planning so that people become more productive and more satisfied with their lives at work and at home.

**FMST 525 Sociology of the Family (2)**

Studies the structure, function, and changing patterns of families in society; the relationships between family problems and changes in society, and their impact on children.

**FMST 526 Marriage and the Family (3)**

Studies the family from perspectives of psychology, anthropology, biology, history, politics, and religion. Investigates the major movements or moving forces in society that have influenced families living in the United States and elsewhere. Evaluates the important contemporary issues in families and presents theories of family functioning that inform therapeutic and educational interventions by professionals.

**FMST 528 Parenting (2)**

Principles and practices relating to parent-child relationships. Emphasizes family roles, communication, conflict resolution, values development, and parenting-skill development.

**FMST 529 Family Life Education (3)**

Systematic comparative analysis of the historical development, theoretical perspectives, types of programs, and research in family-life studies.

**FMST 577 Family Life Workshop (2)****FMST 601 Statistics I (4)**

Introduces regression analysis and analysis of variance (ANOVA), with emphasis on hypothesis-testing and the development of general models that partition overall variability. Topics covered include simple and multiple regression, one-way and factorial, repeated-measures of ANOVA, and analysis of covariance. Evaluation and assumptions of nonparametric alternatives.

**FMST 602 Statistics II (4)**

Broad introduction using linear (matrix) algebra to maximize likelihood estimation generally, using several important multivariate statistical techniques, including but not limited to multivariate analysis of variance, multivariate regression, path analysis, and structural equations causal modeling, log-linear models, and time series analysis; also evaluates alternatives to maximum likelihood estimation.

Prerequisite: MFTH 601 or FMST 601.

**FMST 603 Statistics III (4)**

An advanced course in multivariate statistics that includes topics such as multidimensional scaling, cluster analysis, factor analysis, path analysis, structural equations modeling, log-linear modeling, time-series analysis, and hierarchical linear models. Focuses on understanding these advanced techniques and their application to data analysis.

Prerequisite: MFTH 602 or FMST 602.

**FMST 604 Advanced Qualitative Methods (4)**

An overview of qualitative methods and their application to research of marriage and family therapy. Includes an examination of ethnographics, naturalistic inquiry, phenomenological research, the grounded theory approach, and narrative inquiry.

**FMST 605 Advanced Quantitative Methods (4)**

An advanced overview of quantitative research methods in marriage and family therapy, including experiments and quasi-experiments, survey methodology, and outcome studies.

**FMST 608 Analysis and Presentation Issues in Research (3)**

Brings together and integrates material from the previous research classes. Deals with the ethics of research, and with questions of reliability and validity in both quantitative and qualitative methods. Emphasizes problems of coherently and succinctly presenting research results in proposals, posters, brief reports, and articles.

**FMST 614 Family Communication (3)**

Theoretical foundations of human communication. Therapeutic techniques of major communication theorists in marital and family therapy.

**FMST 635 Single Adult in Family and Society (3)**

Perceptions, needs, challenges, and opportunities during the periods of adult singleness in the life cycle.

**FMST 668 Qualitative Research Practicum (2)**

Provides students with practical experience in conducting and evaluating qualitative research. Emphasizes methods of analysis and presentation of the research. Students review a manuscript that is ready for submission to an academic journal and critically analyze the work of others.

**FMST 684 Doctoral Seminar (1)**

Students develop and refine their dissertation proposals through presentation and discussion with faculty and other students in a workshop format. Dissertation proposal is an expected outcome of this series of courses.

FMST 694 Directed Study: Family Studies (1-3)

FMST 695 Internship in Family Studies (1-4)

FMST 696A Advanced Topics in Family Studies:  
Parenting (3)

Directed study in parenting.

FMST 696B Advanced Topics in Family Studies:  
Family Resource Management (3)

Directed study in family resource management

FMST 696C Advanced Topics in Family Studies:  
Family Life Education (3)

Directed study in family life education.

FMST 696D Advanced Topics in Family Studies:  
Child Development in Family Context (3)

Directed study in child development in family context.

FMST 696E Advanced Topics in Family Studies:  
Divorce and Remarriage (3)

Directed study in divorce and remarriage.

FMST 696F Advanced Topics in Family Studies:  
Marriage and the Family (3)

Directed study in marriage and the family.

FMST 697 Research (1-6)

Independent research relating to marital and family therapy, under the direction of a faculty advisor.

FMST 698 Project or Thesis (3)

FMST 699 Dissertation Research (1-20)

Completes independent research contributing to the field of family studies.

Prerequisite: Advancement to doctoral candidacy.

## GEOLOGY

GEOL 126 Introduction to Field Geology (2-3)

Studies principles of geology at classic field locations. Students required to prepare a report illustrated with digital photos (PowerPoint presentation or equivalent).

Includes camping and extended hikes. A good-quality digital camera and accessories required. Variable units dependent on course duration and content.

GEOL 204 Physical Geology (4)

Introductory geology course that provides the student with a broad picture of geological processes operating on and within the earth. Introduction to minerals, sedimentary and igneous rocks, and fossils. Weathering, earthquakes, volcanism, erosion and sedimentation, and plate tectonics. Three class hours, one three-hour laboratory or field trip per week.

GEOL 316 Mineralogy (4)

Studies minerals, including: crystallography and crystal chemistry, phase diagrams, and systematic classification. Mineral identification based on hand sample, optical, and other analytical techniques. Three class hours and one three-hour laboratory or field trip per week.

GEOL 317 Igneous and Metamorphic  
Petrology (4)

Systematically studies igneous and metamorphic rocks, including: classification by petrography and geochemical methods; application of one-, two-, and three-component phase diagrams; and models of petrogenesis. Three class hours and one three-hour laboratory or field trip per week.

GEOL 325 Rocky Mountain Field Geology (2, 3)

Geological and/or paleontological studies at selected localities in the Rocky Mountains. One unit credit per week of field activity. Additional credit may be given for optional projects completed after the field activity.

GEOL 326 Geology of Southern California (3, 4)

Studies the geology of southern California, with emphasis on local areas of geologic interest, including the Loma Linda area, Mojave Desert, Anza Borrego Desert, and the coastal area. Introductory geological principles, earthquakes and faults, and geology and paleontology of regional areas. Student registers for lectures only (3 units) or for lectures and field trips (4 units).

**GEOL 416 Sedimentology and Stratigraphy (6)**

Interprets the sedimentary rock record through a study of rock types, depositional processes, and models. Studies stratigraphic nomenclature and approaches to correlation on local, regional, and/or global scales. Laboratory analysis of primary and diagenetic mineralogy, textures, and sedimentary structures in clastic and carbonate rocks. Field descriptions of sedimentary rocks, structures, and sequences; and field experience in interpreting depositional processes and stratigraphic relationships.

**GEOL 424 Structural Geology (4)**

Theory of stress and strain, and examination of rock deformation in a framework of plate tectonics. Includes problems and applications. Three class hours—with required full-day and half-day field trips—and one three-hour laboratory or field trip per week.

**GEOL 426 Invertebrate Paleontology (4)**

Structure, classification, ecology, and distribution of selected fossil invertebrate groups. Principles and methods involved in the study and analysis of invertebrate fossils. Three class hours and one three-hour laboratory per week.

**GEOL 427 Vertebrate Paleontology (4)**

Fossil vertebrates, with emphasis on the origins of major groups. Systematics, biology, and biogeography of ancient vertebrates. Three class hours and one three-hour laboratory per week.

**GEOL 431 Geochemistry (4)**

Chemical concepts and their geochemical applications in areas of interest in elementary geology.

Prerequisite: College chemistry; or consent of instructor.

**GEOL 437 Geophysics (4)**

Applies classical physics to the study of the earth. Studies the earth's gravitational, geomagnetic, geothermal, and seismic characteristics; as well as the dynamics of the earth's crust, plate tectonics, and radioactive dating.

Prerequisite: Physics and college mathematics.

**GEOL 443 Historical Geology (4)**

Introduces earth history with in-depth examination of the stratigraphic record of rocks and fossils. Three class hours and one three-hour laboratory per week.

**GEOL 444 Paleobotany (4)**

Fossil plants; their morphology, paleoecology, taphonomy, classification, and stratigraphic distribution. Analyzes floral trends in the fossil record. Three class hours and one three-hour laboratory or field trip per week.

**GEOL 448 Field Seminar in Historical Geology (4)**

Field analysis of the stratigraphic and fossil record, with emphasis on interpretation and discussion of models of deposition. Includes one week of lecture and a two-week field trip to specific sites in the western United States. Summer only.

**GEOL 455 Modern Carbonate Depositional Systems (3)**

Examines modern and Pleistocene carbonate systems in the field, using these environments as models for understanding sediment production, facies development, and early diagenesis for many ancient carbonates. Presentations and readings on specific environments combined with field descriptions, mapping, analysis, and reports. Requires rigorous hiking and snorkeling in shallow water.

**GEOL 456 Field Methods of Geologic Mapping (4)**

Advanced geologic mapping of complex areas, with interpretation of their history; includes mapping of igneous, metamorphic, and sedimentary rocks. Experience in preparation of geologic reports of each mapped locality.

**GEOL 464 Environmental Geology (3)**

Geological and hydrogeological principles that apply to subsurface waste and contaminant characterization. Reviews remediation techniques and hazardous-waste disposal alternatives. Three class hours per week.

Prerequisite: GEOL 441, 442 recommended.

**GEOL 465 Hydrogeology (4)**

Theory and geology of groundwater occurrence and flow, the relation of ground water to surface water, and the potential distribution of ground water by graphical and analytical methods. Three class hours and one three hour laboratory per week.

**GEOL 475 Philosophy of Science and Origins (4)**

Concepts in the history and philosophy of science, and application of these principles in analyzing current scientific trends.

**GEOL 484 Readings in Geology (1-4)**

Reviews literature in a specific area of geology. Students make presentations from the literature and submit current papers dealing with the assigned topic.

**GEOL 485 Seminar in Geology (1)**

Selected topics dealing with recent developments.

**GEOL 486 Research and Experimental Design (2)**

Concepts, methods, and tools of research—including experimental design and data analysis.

**GEOL 487 Field Geology Studies (1-6)**

Special field study trips lasting one or more weeks. Student involvement required, including field presentations and fieldwork assignments, such as the measurement and analysis of sedimentary sections, facies profiling, paleontologic excavation, mapping, or other geological or paleontology field activity. One unit of credit per week. May be repeated for additional credit.

**GEOL 488 Topics in Geology (1-4)**

Reviews current knowledge in specified areas of the earth sciences. Registration should indicate the specific topic to be studied. May be repeated for additional credit. Offered on demand.

**GEOL 489 Readings in Paleontology (1-4)**

Reviews the literature in a specific area of paleontology. Students make presentations from the literature and submit current papers dealing with the assigned topic.

**GEOL 495 Special Projects in Geology (1-4)**

Special project in the field, laboratory, museum, or library under the direction of a faculty member. Registration indicates the specific field of the project.

**GEOL 497 Undergraduate Research (1-4)**

Original investigation and/or literature study pursued under the direction of a faculty member. May be repeated for additional credit.

**GEOL 525 Paleopalynology (4)**

Morphology, paleoecology, classification, and stratigraphic distribution of plant microfossils. Introduces biostratigraphic and paleoecologic analytical methods. Per week: lecture 3 hours, laboratory 3 hours; or one field trip.

Prerequisite: GEOL 405;

**GEOL 545 Taphonomy (4)**

Processes that affect an organism from death until its final burial and fossilization, and utilization of this information in reconstructing ancient assemblages of organisms. Three class hours per week. One laboratory per week to study, describe, and interpret fossil assemblages of vertebrates, invertebrates, and microfossils.

**GEOL 546 Ichnology (2)**

Fossilized traces produced by animal activity, such as tracks, burrows, feeding traces, etc. Two class hours per week.

**GEOL 554 Limnogeology (4)**

Ancient lake deposits, including their sedimentologic, paleontologic, mineralogic, geochemical, and stratigraphic characteristics. Investigates as analogs the depositional processes occurring in modern lakes. Laboratory and several extended field trips.

**GEOL 555 Carbonate Geology (4)**

Advanced look at the geology of carbonate rocks, including petrology; depositional environments; and overview of current topics of research. Laboratory experience in the analysis of carbonate rocks and rock sequences. Field trip to an ancient carbonate sequence.

**GEOL 556 Paleoenvironments (4)**

Applies paleontologic, sedimentologic, and geochemical data and methods to interpretation of past sedimentary environments, with emphasis on organism-sediment relationships. Investigates analog processes, sediments, and organisms in modern depositional environments.

Prerequisite: GEOL 441, GEOL 442; or consent of instructor.

**GEOL 558 Philosophy of Science (4)**

Selected topics in the history and philosophy of science, and application of these principles in analyzing contemporary scientific trends.

**GEOL 559 Philosophy of Science and Origins (1)**

Studies selected topics in the history and philosophy of science, and applies these principles in analyzing current scientific trends. Provides an advanced update in the topic for students who have had a similar course at the undergraduate level.

**GEOL 565 Analysis of Sedimentary Rocks (4)**

Provides exposure to a range of analytical tools used to answer questions in sedimentary geology.

Emphasizes three instruments—optical microscope, x-ray diffractometer, and scanning electron microscope—and introduces other analytical approaches. Participants will use case studies to develop skills in project design, collection of quantitative data, and evaluating existing datasets.

**GEOL 566 Sedimentary Processes (4)**

Advanced methods and principles of sedimentology, with emphasis on analysis and interpretation of sedimentary structures and the processes that produced them. Discusses in detail sedimentary facies, depositional environments, chemogenic and biogenic sedimentation, and postdepositional diagenetic processes. Research or project paper required. Three class hours and one three-hour laboratory or field trip per week, and several extended field trips.

**GEOL 567 Stratigraphy and Basin Analysis (4)**

Advanced methods of stratigraphy and basin analysis, including facies analysis, depositional systems,

sequence stratigraphy, paleogeography, and basin modeling. Research or project paper required. Three class hours and one laboratory or field trip per week, and two extended field trips.

**GEOL 569 Tectonics and Sedimentation (4)**

Analyzes depositional systems developed in various tectonic settings. Compares unique depositional styles in strike-slip basins, foreland basins, arc-trench systems, rift margins, and aulacogens. Three class hours and one laboratory or field trip per week.

**GEOL 574 Environmental Geology (3)**

Geological and hydrogeological principles that apply to subsurface waste and contaminant characterization. Reviews remediation techniques and hazardous waste-disposal alternatives. Three class hours per week.

Prerequisite: GEOL 441, 442 recommended.

**GEOL 575 Hydrogeology (4)**

Theory and geology of groundwater occurrence and flow, the relation of groundwater to surface water, and the potential distribution of groundwater by graphical and analytical methods. Three class hours and one three-hour laboratory per week.

**GEOL 588 Topics in Geology (1-4)**

Reviews current knowledge in specified areas of the earth sciences. When registering, the student must indicate specific topic to be studied. May be repeated for additional credit. Offered on demand.

**GEOL 589 Readings in Paleontology (1-4)**

Reviews the literature in a specific area of paleontology. Students make presentations from the literature and submit current papers dealing with the assigned topic.

**GEOL 594 Readings in Geology (1-4)**

Reviews the literature in a specific area of geology. Students make presentations from the literature and submit current papers dealing with the assigned topic.

**GEOL 595 Lacustrine Readings (1)**

Readings and analysis of current and classic scientific literature dealing with modern and ancient lake

environments—including geochemistry, sedimentology, biology and paleontology, and related subjects.

Activities include student presentations of papers, discussion, and research proposals and reports. One extended, multiday field trip required.

#### GEOL 607 Seminar in Geology (1)

Selected topics dealing with recent developments.

#### GEOL 616 Research and Experimental Design (2)

Concepts, methods, and tools of research—including experimental design and data analysis.

#### GEOL 617 Proposal Writing and Grantsmanship (2)

Skills and practice of effective proposal writing, and strategies for locating and obtaining research grants.

#### GEOL 618 Writing for publication (2)

Explores the mechanics and processes of preparing, submitting, revising, and resubmitting a manuscript for publication in a peer-reviewed journal. Designed for students who are well along in the process of writing their first manuscript for publication. Prepares students to handle the manuscript revision process when the manuscript is returned from reviewers, as well as the final stage of resubmission to the journal.

#### GEOL 695 Special Projects in Geology (1-4)

Special project in the field, laboratory, museum, or library under the direction of a faculty member.

Registration indicates the specific field of the project.

#### GEOL 697 Research (1-8)

#### GEOL 698 Thesis Research (1-8)

Credit for research and for writing the master's thesis. Grade received does not indicate whether thesis is completed and approved.

#### GEOL 699 Dissertation Research (1-8)

Credit for research and for writing the doctoral dissertation. Grade received does not indicate whether dissertation is completed and approved.

## GERONTOLOGY

#### GERO 515 Diversity and Aging (3)

Assists students in understanding the complexity of variables related to the aging process. Examines ethnicity, gender, social class, and culture within the context of the physical, mental, social, political, and financial effects of aging.

#### GERO 599 Directed Study/Special Project (1-4)

Limited to matriculating master's degree in gerontology students who wish to pursue independent investigations in criminal justice practice or policy under the direction of a department faculty member.

#### GERO 615 Economics and Management Issues of Older Adult Services (4)

Acquaints students with economic and management issues and their impact on social policies that direct older adult services. Uses descriptions of economic and management issues to analyze system impact on social policies related to the older adult population. Students learn how to meet the challenges inherent in a dynamic and rapidly changing environment and develop skills and competencies for meeting future challenges and bridging the gap between theory and practice.

#### GERO 617 Bio-psycho-social-spiritual Theories of Aging (4)

An interdisciplinary team-taught learning experience that provides an integrative understanding of the bio-psycho-social-spiritual aspects and theories of aging, and the impact of these on older adults and their families.

#### GERO 687A Field Practicum and Seminar in Gerontology (4)

Experiential learning in gerontology. Students placed in practicum sites as determined by program committee. Students satisfactorily complete 160 practicum hours and 20 hours of concurrent seminar.

**GERO 697 Research (2-4)**

Supports students choosing to complete the thesis option. Provides research matriculation in the collection and analysis of data for the thesis. Students required to register for two quarters, or a total of 4 units.

**GERO 698 Thesis (2)**

The culminating portion of the student's independent research, under the direction of the research advisor. Students register for class during the quarter in which they defend their research and submit their final document to the department and to the School of Science and Technology.

**GERO 757A Professional Practicum and Seminar (3)**

Students complete 3 units of professional practicum during each quarter. Each 3 units require 160 hours of practicum and 20 hours of seminar.

**GERO 757B Professional Practicum and Seminar (3)**

Students complete 3 units of professional practicum during each quarter. Each 3 units require 160 hours of practicum and 20 hours of seminar.

**GERO 757C Professional Practicum and Seminar (3)**

Experiential learning in gerontology settings. Students placed at practicum sites that serve geriatric clients. Students must satisfactorily complete 160 practicum hours and 20 hours of concurrent seminar.

**GERO 787 Advanced Professional Practicum and Seminar (4)**

Experiential learning in advanced gerontology practice. Students must satisfactorily complete 200 practicum hours and 20 hours of concurrent seminar.

**GLOBAL HEALTH****GLBH 205 Essentials of Microbiology (3)**

A one-quarter course specifically designed to meet the needs of global health students. Covers the basic concepts of microbiology, microbes, metabolism,

genetics of microorganisms, and communicable diseases. Emphasizes diseases of global public health significance.

**GLBH 514 Ethnographic Methods in Public Health (3)**

Systematically examines issues of health care access, policy, disease burden, and client-provider interactions within social, historical, and cultural contexts for at-risk populations.

**GLBH 515 Understanding Health Disparities (3)**

Systematically examines issues of disease distribution, health care access, policy, and client-provider interactions within social, economic, historical, and cultural contexts for the main minority groups in the U.S.: Asian and Pacific Islanders, Blacks, Latinos, and Native Americans.

**GLBH 516 HIV/AIDS: Implications for Public Health (3)**

Historical, epidemiological, and public health aspects of HIV/AIDS. Viral, immunologic, laboratory, and clinical manifestations associated with HIV/AIDS. Approaches to preventing/controlling the epidemic. Socioeconomic, political, and health impact of HIV/AIDS; and the related implications in terms of legal, ethical, and health care-management issues. Laboratory/field work earned by the student's active participation and involvement in a variety of field-based activities, such as: clinic-intake interviews, analysis of existing epidemiologic databases, grant writing, health education, hospice care, etc.

**GLBH 517 Dynamics of Culture and Health (3)**

Analyzes cross-cultural issues that affect health and the delivery of health care. Applies practical health education models in multicultural communities. Uses case studies, videos, and selected readings illustrating the important role that cultural beliefs and practices play in public health—both in domestic and international settings. Indicates how to use this awareness to provide better health care and promote health.

### GLBH 519 Principles of Disaster Management I (3)

Through a variety of disaster case studies both current and historical, familiarizes students with the complex discipline of emergency and disaster management as well as the core principles that form its foundation both nationally and internationally.

### GLBH 520 Principles of Disaster Management II (3)

Utilizes a case-study approach to examine the actions and interventions of emergency managers in multiple phases of a disaster. Emphasizes development of an operational understanding of the emergency support functions that have national and global application.

### GLBH 521 Principles of Disaster Management III (3)

Utilizes a case-study approach to examine the actions and interventions of emergency managers to multiple phases of a disaster. Emphasizes development of an operational understanding of the emergency support functions that have local and regional application.

### GLBH 524 Cultural Competence and Health Disparities (2)

Introduces and examines diversity and cultural responsiveness in public health and health care. Examines the roles played by population diversity, health professions diversity, and cultural responsiveness in addressing and eliminating health and health care disparities in both national and global health. Discusses the historic context of social inequities impacting health and health care; and the roles played by biological inheritance, race and ethnicity identifiers, socioeconomic, socioenvironment, and health care beliefs and behavior in health care services delivery. Introduces cultural competency in public health and tenets for developing and applying cultural awareness in the field. Explores culture—defined as the values and beliefs that generate patterned behaviors, expectations, and world view—and its role in accessing, utilizing, and delivering positive outcomes in health care.

### GLBH 534 Agriculture in Development (3)

Food-production systems and issues in agricultural development. Attitudes and approaches for rural development practitioners.

### GLBH 543 Epidemiology of Infectious Disease Projects (1)

Appropriate project/study or a comprehensive review of an infectious disease of major public health significance.

Prerequisite: EPDM 509.

### GLBH 544 Epidemiology of Infectious Disease (3)

Epidemiology of major acute and chronic infectious diseases worldwide. Characteristics of host, agent, environment, immunity of individuals, and populations. Methods of control and eradication; types of epidemics; and experimental, serological, and analytical techniques used in epidemiology of infectious disease.

Prerequisite: EPDM 509.

### GLBH 545 Integrated Community Development (4)

Issues, problems, resources, and strategies of implementing integrated community-development projects. Basic developmental needs of rural and urban communities. Taught from perspectives of developmental anthropology, agriculture, economic development, and the role of global health organizations. Includes fieldwork in a developing country.

Prerequisite: GLBH 565, GLBH 567, GLBH 569.

### GLBH 547 Refugee and Displaced Population Health (3)

Studies the current global issue of refugees and displaced persons—including internally displaced persons (IDPs)—focusing on physical and psychological health risks to the affected populations. Addresses public health organization of a refugee/IDPs camp—including triage systems, levels of health care, environmental control, and social organization; as well as international legal and regulatory issues, and targeted programs to promote health and security by

international, national, and private organizations. Discusses economic, political, and ethical issues relating to the repatriation and resettlement of displaced populations.

### GLBH 548 Violence and Terrorism Issues (3)

Different types of violence and terrorism, methods of attack, training, funding, communication, and responses to terrorism (counter-terrorism). Socioeconomic, political, and medical impact of violence and terrorism, with focus on approaches for intervention and prevention. Public health implications of violence and terrorism. Design of a violence intervention/prevention program.

### GLBH 550 Women in Development (3)

Global epidemiological profile of women in terms of educational patterns, economic productivity, social status, and mortality patterns. Risks to physical and psychosocial health. National and international legal and regulatory issues and programs to promote access to health care, economic productivity, and the health of women.

### GLBH 555 Technology in Emergency Management (3)

Overview of technology concepts and tools that support decision-making, communication, and incident command toward more effective preparedness, response, recovery, and mitigation efforts. Explores application of the Internet, networks and communication systems, maps and geographic systems (GIS and GPS), direct and remote sensing, decision-support systems, hazard analysis and modeling, and warning systems. Discusses current operational problems and limitations, and emerging tools and trends in application of technology.

### GLBH 556 Community Data Analysis for Sustainable Development (3)

Explores analysis of community-health aspects in local and international settings, applying GIS tools and techniques to pertinent health and development data sets for the purpose of identifying assets and risk factors contributing to and affecting sustainable development in marginalized and underserved communities.

Prerequisite: ENVH 522, ENVH 524.

### GLBH 557 Epidemiology of Disasters (3)

Assesses the health effects of natural and man-made disasters and identifies factors that contribute to these effects. Addresses selection of health indicators in disaster situations; means of evaluating data collected within the constraints of the disaster situation; reporting systems; techniques of statistical sampling; and modern information-technology systems used for emergency preparedness, including rapid computerization of post-disaster health information. Analyzes risk factors for adverse health effects; discusses baseline for measuring trends over time and monitoring population-based mortality; and identifies limitations and weaknesses of methods of disaster assessment.

### GLBH 558 Public Health Issues in Emergencies (3)

Explores the immediate, critical public health considerations and environmental health issues of concern in an emergency or disaster, including safe drinking water and food, shelter, sanitation, and prevention of communicable diseases. Explores these topics in depth as they pertain to disaster and emergency planning, response, and mitigation. Utilizes case studies and a table-top exercise to ensure practical application of the principles presented in the class.

### GLBH 559 Psychosocial Models and Interventions (3)

Major models of stress, crisis, and psychological trauma; and how they relate to health care providers. Psychosocial reactions and responses of populations, individuals, and care providers to societal disruption and trauma, medical emergencies, and death and dying. Applies principles for suicide intervention, critical-incident debriefings, and death notification. Roles of

psychiatrists, psychologists, social workers, family therapists, and chaplains. Methods of providing temporary, adequate psychological care for individuals in psychosocial crisis.

### GLBH 560 Economic, Legal, and Policy Issues in Disasters (3)

Addresses economic, legal, and policy issues arising from disasters. Overview of economic disaster-assistance models and practices for individuals and communities, including grants, loans, and hazard-mitigation programs. Examines the confluence of disaster legislation and policy; public health law; disaster declarations; and the authority of federal, state, and local governments. Implications of vulnerable populations, socioeconomic assessments, population displacement, and sustainable development.

### GLBH 561 Epidemiology of Tobacco Use and Control I (3)

A module-based course (the first of a three-part series) that presents a comprehensive overview of the tobacco pandemic and provides a foundation for understanding global/national tobacco-prevention and -control issues and strategies. Explores the epidemiology of this growing public health challenge and its significant impact on societal health and economics. Examines the underlying principles governing the multi-sectoral and multidisciplinary approaches developed as part of the coordinated public health response (within the context of the WHO Framework Convention on Tobacco Control). Introduces basic techniques of monitoring, surveillance, and evaluation as used in tobacco- prevention/control programs.

### GLBH 562 Epidemiology of Tobacco Use and Control II (3)

Explores the theoretical foundation for tobacco control. Considers the impact of tobacco-control policy and legislative and regulatory measures on prevalence, initiation, and cessation of tobacco use. Compares the effect of socioeconomic status variables on measures of smoking behavior among racial/ethnic groups. Reviews validity studies in tobacco use. Explores clustering of tobacco use with other drugs, other risk behavior, and psychiatric disorders. Estimates sensitivity and

specificity of individual and environmental factors that influence the susceptibility of individuals to tobacco dependence. Includes issues such as counteracting the tobacco industry and forming effective partnerships in tobacco control; monitoring, surveillance, evaluation, and reporting of tobacco use and control; and developing a national plan of action for tobacco control.

### GLBH 564 Fundamentals of Community Health and Development I (2)

The first of a three-part series of module-based learning experiences necessary to the management of primary health care and development programs serving vulnerable populations in resource-scarce areas. Current world health programs, with a focus on the ecologic, demographic, developmental, and sociocultural determinants of health. Topical areas include: program management and evaluation, food security and agricultural sustainability, communicable diseases, essential drugs and immunizations, population/family planning and maternal-child health, traditional practices and cross-cultural communications, environmental issues, urban health, populations at risk, relief operations, literacy, microenterprise, and public health policy/advocacy.

### GLBH 565 Interventions in Community Health and Development I (3)

The first in a series of module-based courses that presents selected methodological techniques and skills useful in the planning, implementation, and evaluation of primary health care programs—particularly in international settings. Student describes key principles in program planning, implementation, and evaluation of sustainable public health programs in international settings; becomes familiar with the use of specific tools and approaches associated with program planning, implementation, and evaluation (including the use of the Logical Framework Analysis or LogFRAME model); demonstrates the ability to plan and conduct a thirty-cluster sample survey to assess immunization coverage; develops and presents a project-specific, detailed implementation plan (DIP); understands and summarizes the key aspects of project evaluation methods, as required by international funding agencies.

Prerequisite: EPDM 509; STAT 509 or STAT 521.

### GLBH 566 Fundamentals of Community Health and Development II (2)

The second of a three-part series of module-based learning experiences necessary to the management of primary health care and development programs serving vulnerable populations in resource-scarce areas. Current world health programs, with a focus on the ecologic, demographic, developmental, and sociocultural determinants of health. Topical areas include: program management and evaluation, food security and agricultural sustainability, communicable diseases, essential drugs and immunizations, population/family planning and maternal-child health, traditional practices and cross-cultural communications, environmental issues, urban health, populations at risk, relief operations, literacy, microenterprise, and public health policy/advocacy.

Prerequisite: GLBH 564.

### GLBH 567 Interventions in Community Health and Development II (3)

The second in a series of module-based courses that presents selected methodological techniques and skills useful in the planning, implementation, and evaluation of primary health care programs—particularly in international settings. Student describes key principles in program planning, implementation, and evaluation of sustainable public health programs in international settings; becomes familiar with the use of specific tools and approaches associated with program planning, implementation, and evaluation (including the use of the Logical Framework Analysis or LogFRAME model); demonstrates the ability to plan and conduct a thirty-cluster sample survey to assess immunization coverage; develops and presents a project-specific, detailed implementation plan (DIP); understands and summarizes the key aspects of project evaluation methods, as required by international funding agencies.

### GLBH 568 Fundamentals of Community Health and Development III (2)

The third of a three-part series of module-based learning experiences necessary to the management of primary health care and development programs serving vulnerable populations in resource-scarce areas. Current world health programs, with a focus on the

ecologic, demographic, developmental, and sociocultural determinants of health. Topical areas include: program management and evaluation, food security and agricultural sustainability, communicable diseases, essential drugs and immunizations, population/family planning and maternal-child health, additional practices and cross-cultural communications, environmental issues, urban health, populations at risk, relief operations, literacy, microenterprise, and public health policy/advocacy.

Prerequisite: GLBH 564, GLBH 566.

### GLBH 569 Interventions in Community Health and Development III (3)

The third in a series of module-based courses that presents selected methodological techniques and skills useful in the planning, implementation, and evaluation of primary health care programs—particularly in international settings. Student describes key principles in program planning, implementation, and evaluation of sustainable public health programs in international settings; becomes familiar with the use of specific tools and approaches associated with program planning, implementation, and evaluation (including the use of the Logical Framework Analysis or LogFRAME model); demonstrates the ability to plan and conduct a thirty-cluster sample survey to assess immunization coverage; develops and presents a project-specific, detailed implementation plan (DIP); understands and summarizes the key aspects of project evaluation methods, as required by international funding agencies.

Prerequisite: GLBH 567.

### GLBH 584 Special Topics in Global Health (1-3)

Lecture and discussion on a current topic in global health. May be repeated for a maximum of 4 units applicable to degree program.

### GLBH 605 Seminar in Global Health (1)

Issues, trends, organizational structure, and practice of international public health. Issues impacting global health, the structure and functions of government and NGOs in the delivery of public health services, and preparation to practice international health. Selected guest lecturers and student participation.

**GLBH 606 Advanced Seminar in Global Health (2)**

Research methodologies applied to program operations and health and development problems in developing countries. Cultural, ethical, and technical issues in conducting research in other societies. May be repeated for additional credit. Limited to doctoral degree students.

**GLBH 685 Preliminary Research Experience (2)**

Various aspects of research under the guidance of a faculty member and by participation in an ongoing project. Must be completed prior to beginning dissertation/research project. Limited to doctoral degree students.

**GLBH 692 Research Consultation (2)**

Individual advice on research design, data collection, data analysis, and reporting of results.

**GLBH 694 Research (1-4)**

Independent research on problems being studied in the School of Public Health or associated institutions; collaboration with researcher/faculty member. Research program arranged with faculty member(s) involved and approved by advisor. Minimum of thirty hours required for each unit of credit. Written report required. Limited to qualified master's and doctoral degree students.

**GLBH 695 Practicum in Field-Based Survey and Evaluation (3)**

Individualized, arranged participation in field survey and evaluation, with preceptorship by affiliating nongovernment organizations (NGOs) in the developing world or underserved population settings. Limited to doctoral degree students.

Prerequisite: GLBH 567.

**GLBH 696 Directed Study/Special Project (1-4)**

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include readings, literature reviews, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any master's degree program.

**GLBH 698 Dissertation (1-12)**

Student prepares manuscript presenting results of doctoral research study. Limited to doctoral degree candidates.

**GLBH 699 Applied Research in Global Health (2, 4)**

Focuses on operations/evaluation research and/or program development that involves application of knowledge/skills acquired earlier in the academic program. Field sites may include private or governmental health organizations functioning in a cross-cultural environment. Guidance to be provided by supervising faculty and agency personnel. Written paper per departmental guidelines.

**GLBH 700 MIP-Peace Corps Field Practicum (0)**

Designed for students who must maintain continuous registration in the School of Public Health as a condition of the twenty-seven month Peace Corps field practicum that is part of their master's degree program.

**GLBH 796 Internship (12)**

Individual, mentored study in organizational management and development under the direction of an international nongovernmental organization that has a contractual agreement with the department. Limited to graduate GLBH students who have been recommended by the department and accepted by the nongovernmental organization for this internship experience and whose project proposals have been approved by both entities.

**GLBH 797 MIP Residency in Global Health (12)**

Individual, guided study in operational field practice, under faculty supervision. Limited to graduate students in the INTH Master's Internationalist Program (M.P.H./MIP) whose projects have been approved by their committee.

**GLBH 798 Culminating Activity/Field Practicum (1-12)**

Written report, proposal, or evaluation of a program or project in which the student has been or will be involved. Student applies concepts and skills taught in course work, under the guidance of department faculty

and agency supervisors. For students who lack relevant professional experience in an international or cross-cultural health/development program, a three-week (40 hours/week) assignment to an approved agency will be arranged. Students with appropriate experience register for 3 units and write a culminating activity paper under the direction of department faculty.

## GRADUATE DENTISTRY

### GRDN 514 Introduction to Biomedical Research (4)

Provides basic information necessary to develop a research proposal. Focuses on applied statistics, as well as proposal writing—which emphasizes critical evaluation of the literature, proposal design, and proposal methodology. Culminates in an approved research proposal suitable for submission to the departmental Research Guidance Committee (RGC). Lectures, seminars.

### GRDN 535 Clinical Oral Pathology (2)

Emphasizes oral manifestations of disease. Diagnosis, prognosis, and treatment of various oral neoplasms.

### GRDN 601 Practice Management (2)

Prepares student for specialty practice. Concepts of employment, records, incorporating, insurance, and practice planning.

### GRDN 609 Professional Ethics (2)

Provides students with a theological and philosophical framework for professional ethics. Topics include individual rights, autonomy, informed consent, and responsibilities of the professional person in the dental field, as well as in society as a whole.

### GRDN 622 Biomedical Science I (4)

Advanced, two-quarter course offered every other year (alternating with GRDN 623) during Autumn and Winter quarters. Course content includes applied oral bacteriology, immunology, topics in oral medicine, applied pharmacology, and orofacial pain. Students expected to have prior basic knowledge in the various topic areas.

### GRDN 623 Biomedical Science II (4, 5)

Advanced, two-quarter course offered every other year (alternating with GRDN 622) during Autumn and Winter Quarters. Course content includes cell biology, applied oral pathology, biology of hard tissues, physiology, and biochemistry. Students expected to have basic knowledge in the various topic areas.

### GRDN 632 Basic Microsurgery Techniques (2)

An integrated, forty-hour laboratory course tailored to the needs of the individual student. Principles and application of microscope operator and use, microinstrumentation, microdissection, micromanipulation, and microsuturing techniques. Performance of various microvascular and microneural repair procedures.

## GRADUATE STUDIES—CONJOINT

### GSCJ 514 Editing, Style, and Grammar for Academic Writing and Publication (2)

Focuses on mastery of the editing stage of academic manuscript preparation. Applicable to all academic works, including publishable research results, term papers, dissertations, theses, and proposals. Covers the self-editing option, editing techniques, grammar, punctuation, and style. Addresses APA and other styles.

### GSCJ 518 Interdisciplinary Professional Experience (1-4)

Professional interdisciplinary experience. Experiences may occur in multiple settings, including field, clinic, outpatient and inpatient. May be repeated up to eight times.

## GYNECOLOGY AND OBSTETRICS

### GYOB 599 Gynecology and Obstetrics Directed Study (1.5-18)

### GYOB 701 Gynecology and Obstetrics Clerkship (1.5-9)

A six-week rotation that introduces women's reproductive health. Provides the student with a broad

exposure to women's health and gives a glimpse of what is involved in the specialty of obstetrics and gynecology.

GYOB 891 Gynecology and Obstetrics  
Elective (1.5-18)

## HEALTH ADMINISTRATION

HADM 501 Health Policy and Leadership  
Seminar (1)

An orientation seminar designed for the first or second quarter of the M.P.H. degree in health policy and leadership. Identifies the expectations of the degree, raises awareness and understanding of academic standards, and promotes cohort and professional loyalty.

HADM 504 Database Concepts (3)

Introduces databases and database management. Increases students' understanding of the most common databases and their functions, as well as the process of planning and implementing these databases. Emphasizes the management aspect of databases and the qualities a manager should possess.

HADM 506 Principles of Health Care Finance (3)

An overview course covering the time value of money, valuation, risk and rates of return, financial analysis, financial forecasting, working capital management, capital budgeting, cost of capital, and long-term financing. Course can be waived by students who have taken an upper division finance course prior to enrolling at LLU from an accredited four-year university.

HADM 507 Principles of Financial Accounting  
in Health Care (3)

Overview of the accounting cycle, balance sheets, income statements, basic accounting principles, ethics, internal controls, accounting for assets, current liabilities, and stockholder's equity. Course can be waived by students who have taken an upper division accounting course prior to enrolling at this University from an accredited four-year university.

HADM 509 Principles of Health Policy and  
Management (3)

Introduces concepts of the health policy process of the current health delivery system, with a focus on administration of health care organizations.

HADM 510 Health Policy Analysis and  
Synthesis (3)

Integrates skills and concepts from previous courses taken in managerial problem-solving. May be repeated for additional credit.

HADM 514 Health Care Economic Policy (3)

Concepts of health care supply and demand, and resource allocation in view of political constraints imposed in market and planned economies. Health-service pricing and policy issues in quantity, quality, and cost of health care in domestic and international environments.

HADM 515 Maintenance and Operation of  
Information Systems (3)

Covers the process of maintenance and management of data communications systems, as well as network administration. Covers analysis and development of information security systems, system auditing, information system documentation, system maintenance plans, and development of maintenance and security plans.

HADM 516 International Economic Policy (3)

Focuses on how to effectively reduce dependence on foreign aid, improve access to capital, invest in the people, and bolster rates of currency exchange to improve regional and national economies. Provides overview of international economics, along with an assessment of the impact privatization of state companies, democratic initiatives, free-trade, and tax reform have on a country shifting toward a market economy.

HADM 517 Business Communication (3)

Exposes students to current and authoritative communication technology and business communication concepts, with emphasis on both process and product. Addresses subjects essential in

managerial communication, including: the foundations of communications; the 3 x 3 writing process; business correspondence; reports, proposals, and presentations; and employment communications.

#### HADM 519 Data Analysis and Management (3)

Using Excel, emphasizes concepts and applications of the most common data-analysis methods. Emphasizes selection of appropriate method of analysis and of reporting results. Utilizes Access for health care data management. Proficiency promoted through a variety of tasks: importing, exporting, merging and linking files; creating, updating, and querying databases; basic programming, application development, and data entry.

#### HADM 520 Long-Term Care Administration (3)

Administration of long-term care facilities. Licensing requirements as presented in the California Code of Regulations Title 22 and the Code of Federal Regulations Title 42.

#### HADM 525 Special Topics in Health Administration (1-4)

Lecture and discussion on a current topic in health administration. May be repeated for a maximum of 4 units applicable to degree program.

#### HADM 526 Data Communication Theory (3)

Provides an overview of how information systems work. Covers the fundamentals of information systems hardware and software, including existing databases on local and national networks. Internet and Intranet projects required. Includes distributed data processing, client server systems, local area networks (LAN), wide area networks (WAN), and data communications, including voice and image.

#### HADM 528 Organizational Behavior in Health Care (3)

How human resources are utilized to accomplish organizational goals within health care settings. Development of basic contributions to administrative theory and practice. Focuses on human responses to varied organizational structures.

#### HADM 529 Health Care Negotiations and Conflict Resolution (3)

Diagnoses the complex, competing issues among different social, political, and economic initiatives promoted by both liberals and conservatives. Focuses on and emphasizes shared interests and fears of individuals and entities promoting competing policies, which leads to a more productive negotiation process and makes conflict resolution more attainable.

#### HADM 530 Quantitative Decision Analysis (3)

Explains quantitative methods used to analyze and improve the decision-making process in health care organizations. Decision analysis, break-even analysis, managerial accounting, financial management, linear programming, network modeling, game theory, simulation, and cutting-edge forecasting techniques included in the primary concepts examined.

#### HADM 532 Public Health Law (3)

Introduces students to the broad spectrum of legal issues related to public health, with emphasis on the federal and state legal bases for authority exercised in matters relating to the public's health. Focuses on individual rights, governmental authority, and the inherent tension between the two in regard to public health matters. Addresses federal and state constitutional law, statutory law, and administrative rules, as applicable.

#### HADM 534 Healthcare Law (3)

Examines the legal and judicial processes as they relate to health care. Considers criminal and civil law. Emphasizes principles of contract law.

#### HADM 536 Health Policy Communications (3)

Helps students communicate effectively with the mass media and current stakeholders in the current health system. Explores aspects of effective listening, response strategies, conflict management, negotiations, leadership styles, interpersonal agendas, and group dynamics. Focuses on oral and written communication, as well as critical-thinking messages.

### HADM 542 Managerial Accounting for Health Care Organizations (3)

Financial data used in decision making. Cost behavior, activity-based costing, cost allocation, product costing and pricing, operational budgets, capital budgeting, and behavioral aspects of control.

Prerequisite: HADM 507; One course in financial accounting, or consent of instructor.

### HADM 545 Government Policy and Health Disparities (3)

Examines the federal government's use of funding and regulation to influence health care delivery in the United States. Reviews the role of state and local governments in developing and implementing health policy. Explores the issue of health disparities in framing health-policy discussions.

### HADM 549 Health Care Investment and Portfolio Issues (3)

Provides overview of financial markets, instruments, and institutions addressing financial concepts and tools that have been used successfully in progressively managed firms. Discusses financial markets that corporations, governmental agencies, and financial institutions use while conducting business. Theory of pricing of instruments, institutional structure, and determinants of growth of financial markets.

### HADM 555 Health Care Delivery Systems (4)

Reviews current trends in health care financing; integrated delivery systems; managed care, as well as some focus on health care operations, including: billing, coding, pricing, utilization review, case management, and systems. Reviews and discusses current events and research relating to the health care system structure throughout the world and relative to U.S. health care policy.

### HADM 559 Health Care Marketing (3)

Applies marketing concepts to health care delivery systems. Emphasizes a strategic market-management approach for developing or evaluating strategies and programs for a health care organization.

### HADM 560 Asset Protection Planning for Health Professionals (3)

Introduces estate planning, asset-protection strategies, family limited partnerships (FLPs) and limited-liability companies (LLCs), life insurance, irrevocable life insurance trusts, durable powers of attorney, and revocable inter vivos trusts.

### HADM 564 Health Care Finance (3)

Public and private health care financial issues, including third-party reimbursement, managed care, and health care-provision schemes. Financial planning for health care institutions, with consideration of capital markets and development of the tools of risk-return analysis, time valuation of money, and project selection.

Prerequisite: HADM 506;

### HADM 574 Managing Human Resources in Health Care Organizations (3)

Purposefully explores how the strategic management of human resources creates value and delivers results in health care. Addresses an emerging human-resource paradigm, in addition to focusing on the traditional perspectives of human resources that center around the personnel function.

### HADM 575 Management Information Systems in Health Care (3)

Systems theory and application in the design and operation of integrated management information systems in a health care setting. Examines hardware, software, and human interfaces.

### HADM 580 Foundations of Leadership (3)

Provides a broad general introduction to the literature of leadership studies, taking particular note of the competencies, skills, and expectations of leaders, as found in current theories and practices.

### HADM 581 Orientation for Leadership I: Vision and Understanding (4)

The first in the series designed to provide an orientation for leadership. Student evaluates personal skills and understanding of leadership while creating a personal vision of his or her role in leadership for the future

**HADM 582 Orientation for Leadership II:  
Exploring the Nature of Leadership (4)**

The second in the series designed to provide an orientation for leadership. Focuses on the definition and scope of leadership, the qualities of leadership, and various leadership styles. Explores the nature of leadership within both the individual and organizational context. May be taken concurrently with HADM 581 or HADM 583.

**HADM 583 Orientation for Leadership III:  
Setting a New Direction (4)**

Builds on the work completed in HADM 581. Under the guidance of an assigned advisor, students create either an academic or personal development plan to be submitted as part of the admission requirement for the doctoral leadership degree.

Prerequisite: HADM 581.

**HADM 584 Current Topics in Health Policy and  
Leadership (1)**

Lectures and discussion on current issues in leadership. Specific content varies from quarter to quarter. May be repeated for additional credit.

**HADM 585 Policy Development for a Twenty-  
First Century Health System (3)**

Addresses the unique application of leadership theory and best practice to the field of public health, health care, and related areas.

**HADM 586 Building Healthy Communities:  
Integrative Health Policy (3)**

Examines the public health system, how health policy is developed, and the diverse stakeholders involved in the process. Examines effective partnerships with government agencies, the private sector, nongovernmental organizations, communities, and social entrepreneurs. Explores and analyzes in depth how these partnerships have worked together to make positive health improvements through effective policies will be explored.

**HADM 587 Statistics to Policy: What Turns the  
Dial? (3)**

Provides students with the skills needed to translate research into policy and practice. Focuses on collaboration with government agencies and community groups in evaluating outcomes associated with changing policies at the institution, community, and state levels.

**HADM 588 Leadership, Policy, and  
Environmental Change (3)**

Examines public health approaches to improve health through environmental and policy change. Explores theoretical and practical applications of legislative advocacy in the area of health policy.

**HADM 589 Advanced Practice in  
Leadership (1-4)**

While working closely with leadership specialists, student observes, demonstrates, evaluates specific leadership styles, and explores alternative approaches while working closely with leadership specialists. Permission of instructor required. May be repeated for a total of 4 units.

**HADM 595 Leadership—Past, Present, and  
Future (3)**

An in-depth study of the historical and theoretical foundations of leadership, exploring a wide range of sources across time and culture. Emphasis will be placed on major theories influencing the current understanding of leadership and its relationship to management.

**HADM 601 Health Systems-Operations  
Management (3)**

Uses quantitative methods to analyze and improve business processes within an organization. Regression analysis, simulation, decision analysis, capacity planning, inventory models, linear programming, scheduling, and cost-benefit analysis.

**HADM 604 Health Systems Strategic  
Planning (3)**

Decision-making and planned change through the strategic planning process. Performance review and

evaluation of services and resource administration. Strategic plan and contingency plans, mission statement, objectives, courses of action, and resource allocation. Presentation and approval process.

### HADM 605 Health Care Quality Management (3)

Focuses on quality systems that include developing clear mission or vision, setting measurable strategic quality goals, deploying goals for action by identifying specific activities to be done, and controlling results. Analysis of quality process in health care historically, with emphasis on key strategies for success.

### HADM 610 Synthesis Seminar in Health Administration (1)

Integrates skills and concepts from previous courses taken in managerial problem-solving. May be repeated for additional credit.

### HADM 685 Preliminary Research Experience (3)

Experience gained in various aspects of research under the guidance of a faculty member and by participation in an ongoing project. Must be completed prior to beginning the dissertation research project.

### HADM 686 Writing Seminar (1)

Assists students in understanding the process of organizing and writing dissertation abstracts and/or proposals. Focuses primarily on good writing technique. Gives attention to both critical and creative writing.

### HADM 689 Graduate Seminar in Leadership (2)

While working under the direction of a department faculty member, student applies leadership theory to specific situations and evaluates the effectiveness of such interventions. Limited to doctoral. Permission of instructor required. May be repeated for a total of 8 units.

### HADM 690 Health Care Management Capstone (4)

A capstone course that completes the M.B.A. degree program. Integrates the core and cross-cutting health

care management competencies, resulting in a learning experience that combines health care perspectives, theories, skills, and tools in an applied format. Final products—derived through case studies, guest lectures, and literature reviews—include a comprehensive strategic plan, which incorporates all the elements of a business plan designed specifically for a health care organization.

### HADM 691 Integrated Management Capstone 1 (2)

One of two capstone courses that completes the M.B.A. degree program. Integrates the core and cross-cutting health care management competencies, resulting in a learning experience that combines health care perspectives, theories, skills, and tools in an applied format. Final products—derived through case studies, guest lectures, and literature reviews—include a comprehensive strategic plan, which incorporates all the elements of a business plan designed specifically for a health care organization.

### HADM 692 Integrated Management Capstone 2 (2)

The second of two capstone courses that completes the M.B.A. degree program. Integrates the core and cross-cutting health care management competencies, resulting in a learning experience that combines health care perspectives, theories, skills, and tools in an applied format. Final products—derived through case studies, guest lectures, and literature reviews—include a comprehensive strategic plan, which incorporates all the elements of a business plan designed specifically for a health care organization.

Prerequisite: HADM 691.

### HADM 695 Health Administration Field Practicum (3)

Individual arrangements for selected students to participate in a guided, structured practical experience applying health administration skills and knowledge gained in the classroom in practice settings.

### HADM 696 Directed Study/Special Project (1-4)

Individual arrangements for advanced students to study under the guidance of a program faculty member.

May include readings, literature reviews, or other special projects. Minimum of thirty hours required for each unit of credit.

#### HADM 697 Dissertation Proposal (1-4)

Student develops the dissertation proposal. Research adviser develops with the student mutually agreed-upon objectives. Evaluation based on the accomplishment of these objectives. Culminates in a dissertation proposal.

#### HADM 698 Dissertation (1-8)

Participant prepares dissertation manuscript presenting the results of doctoral research study.

#### HADM 699 Applied Research (1-4)

Assignment to private, government, international, or voluntary health agency or other approved organization where practical application of the materials studied on campus is made under the guidance of the department faculty and the organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

Prerequisite: Consent of department advisor and of instructors responsible for supervision.

#### HADM 710 Management Associate Practicum 1 (12)

Provides practical training for students in the M.B.A. degree program in health care administration. Placement director and mentors monitor student progress throughout this experiential learning opportunity that develops critical career skills. MAP 1 placement, based on student's skill sets and interests—as well as the organization's resources and requirements—requires a 20-hour work week minimum (minus posted LLU vacations), for a cumulative total of 400 hours over a period of two consecutive academic quarters. Student's final paper and oral presentation detail MAP experience.

#### HADM 711 Management Associate Practicum 2 (12)

Continues practical training for students in the M.B.A. degree program in health care administration.

Placement director and mentors monitor student progress throughout this experiential learning opportunity that develops critical career skills. MAP 2 placement, which occurs during the fourth quarter of the program, requires a 20-hour work week minimum (minus posted LLU vacations), for a cumulative total of 400 hours over a period of two consecutive academic quarters. Student's final paper and oral presentation detail MAP 2 experience.

Prerequisite: HADM 710.

#### HADM 712 Management Associate Practicum 3 (12)

Continues practical training for students in the M.B.A. degree program in health care administration. Placement director and mentors monitor student progress throughout this experiential learning opportunity that develops critical career skills. MAP 3 placement, which occurs during the sixth quarter of the program, requires a 20-hour work week minimum (minus posted LLU vacations), for a cumulative total of 400 hours over a period of two consecutive academic quarters. Student's final paper and oral presentation detail MAP 3 experience.

Prerequisite: HADM 711.

#### HADM 724A Residency in Institutional Administration (3)

Applies in a practical way, under the guidance of a preceptor in an institutional setting, the materials studied on campus. Must be taken during consecutive quarters until required hours have been completed.

#### HADM 724B Residency in Institutional Administration (6)

Applies in practical way, under the guidance of a preceptor in an institutional setting, the materials studied on campus. Must be taken during consecutive quarters until required hours have been completed.

#### HADM 724C Residency in Institutional Administration (9)

Applies in practical way, under the guidance of a preceptor in an institutional setting, the materials studied on campus. Must be taken during consecutive quarters until required hours have been completed.

### HADM 724D Residency in Institutional Administration (12)

Applies in practical way, under the guidance of a preceptor in an institutional setting, the materials studied on campus. Must be taken during consecutive quarters until required hours have been completed.

### HADM 797 Health Policy and Leadership Field Practicum (3)

Serves as the venue for completing the final quarter of field practicum required for graduation. Student presents a summary of his/her experience and demonstrates the seven competencies designed for the M.P.H. degree in health policy and leadership. Requires completion of a reflective essay outlining the student's educational experience, as well as a summary of what it has meant to him/.her. Combines application (field practicum), assessment (portfolio), and the recognition of professional readiness (high exit velocity). Provides opportunities for students to attend ten health administration colloquia and ten public health seminars.

Prerequisite: Last two quarters of their program.

### HADM 798A Health Administration Field Practicum (12)

Supervised experience in a public health-service organization. Opportunity to integrate skills and concepts from courses taken toward the M.P.H. degree in health administration.

Prerequisite: M.P.H. degree core courses.

### HADM 798B Health Administration Field Practicum (6)

Part-time, ten-week (20 hours/week) supervised experience in a public health-service organization. Opportunity to integrate skills and concepts from courses taken toward the M.P.H. degree in health administration.

Prerequisite: M.P.H. degree core courses.

### HADM 798D Health Administration Field Practicum (12)

Full-time, ten-week (40 hours/week) supervised experience in a public health-service organization.

Opportunity to integrate skills and concepts from courses taken toward the M.P.H. degree in health administration.

Prerequisite: M.P.H. degree core courses.

## HEALTH CARE ADMINISTRATION

### HCAD 305 Health Care Communication (4)

Basic communication applications of health care organizations. Communication theory, language, oral reporting, conducting meetings and conferences, interpersonal techniques of listening and interviewing, nonverbal communication, crises management, and public relations and multicultural as well as ethical considerations.

### HCAD 316 Economics for Health Care Managers (4)

The structure and functioning of the economy from the perspective of a health care manager. Surveys both macroeconomics and microeconomics. Concepts include gross domestic product, economic growth, inflation, recession, employment, monetary policy, fiscal policy, supply, demand, prices, efficient allocation of scarce resources, and generating income responsibly.

### HCAD 328 Health Care Organizational Behavior (3)

Applies behavioral-science concepts to understanding individual and group behavior in health care organizations. Topics include: attitude formation, perceptual processes, motivation, job design, reward systems, leadership, group processes, organizational structure and design.

### HCAD 336 Legal Environment of Health Care (4)

Laws regulating health care covering legal institutions, constitutional considerations, business torts and crimes, contracts, personal property, uniform commercial code, sales, commercial paper, secured transactions, creditors' rights, and bankruptcy; agency; business organizations, limited and general partnerships, corporations; and government regulations.

**HCAD 359 Health Care Marketing (3)**

Surveys major marketing topics, including consumer behavior, product, pricing, placement, and promotions.

**HCAD 374 Health Care Human Resources (4)**

Purposefully explores how the strategic management of human resources creates value and delivers results in health care. Addresses an emerging human-resource paradigm in addition to focusing on the traditional perspectives of human resources that center around the personal function.

**HCAD 375 Health Care Information Systems (3)**

Challenges students to explore various health care information systems and emerging technologies by addressing organizational needs, requests for proposals (RFPs), policies and procedures, education, quality assurance, and governance.

**HCAD 401 Health Care Operations Management (4)**

Explains quantitative methods used to analyze and improve organizational processes within a health care organization. Decision analysis, break-even analysis, materials management, linear programming, queuing theory, quality management, network modeling, and game theory.

**HCAD 409 Principles of Health Care Administration (3)**

Introduction to the administration of organizations within the context of the economic, regulatory, and financial constraints of the health care delivery system. Areas covered include: change is the name of the game in twenty-first century health care; concepts of organizational management; the management functions (planning, decision making, organizing, staffing, directing, and controlling); budgeting; committees and teams; adaptation, motivation, and conflict management; authority, leadership, supervision; and human resource management.

**HCAD 446 Accounting for Health Care Managers (4)**

An introductory course that covers the accounting cycle, balance sheet, income statement, basic accounting principles, ethics, internal control, accounting for assets, current liabilities, and stockholder's equity.

**HCAD 464 Health Care Finance (4)**

An introductory course that covers time value of money, valuation, risk and rates of return, financial analysis, financial forecasting, working capital management, capital budgeting, cost of capital, and long-term financing.

**HCAD 498 Health Care Policy and Strategy (4)**

Strategic planning process and tools needed to analyze external factors and internal capabilities as they relate to particular organizations. Development of vision, mission, goals, objectives, and control mechanisms. Provides insight into best practices for implementing developed strategy as it relates to the human resource management, marketing, and finance departments.

**HCAD 499 Directed Study (1-4)**

Student individually arranges to study under the guidance of a program faculty member. Project or paper to be submitted on a topic of current interest in an area related to health care management. Regular meetings provide the student with guidance and evaluation. Activities may also include readings, literature review, or other special or research projects. A maximum of 4 units is applicable to any degree program.

**CODING SPECIALIST****HLCS 236 Pharmacology (3)**

Introduces pharmacology, including a review of pharmaceuticals used in diagnosis, prevention, and treatment of disease as commonly encountered in medical records.

**HLCS 238 Essentials of Human Diseases (3)**

Surveys human diseases, including the etiology, pathogenesis, and clinical manifestations of commonly encountered diseases.

### HLCS 239 Introduction to Health Records Science (3)

Introduces health care facilities and the information systems involving health records. In-depth study of health record content, confidentiality of health care information, and professional ethics.

### HLCS 241 Medical Terminology (2)

Prefixes, suffixes, and root words used in the language of medicine. Terms pertaining to pathology and surgery. Terms studied by body system: gastroenterology, cardiology, neurology, musculoskeletal, dermatology, and respiratory.

### HLCS 242 Coding I (4)

Principles and conventions of ICD-9-CM and ICD-10-CM coding in diseases and procedures pertaining to infectious diseases; diseases of blood, endocrine, respiratory, digestive, genitourinary, skin, and musculoskeletal systems; and mental disorders.

### HLCS 243 Coding II (4)

Principles and conventions of ICD-9-CM and ICD-10-CM coding in diseases and procedures pertaining to pregnancy, perinatal conditions, poisonings, injuries, complications of medical and surgical care, the circulatory system, and neoplasms.

Prerequisite: HLCS 242.

### HLCS 245 Coding III (4)

Principles of current procedural coding (CPC) at the intermediate level, including: surgical coding for all body systems; medical procedures; anesthesia coding; radiology, pathology, and laboratory coding. Modifier assignment. Also includes laboratory practice on 3M software.

Prerequisite: HLCS 243.

### HLCS 254 Evaluation and Management Coding for Billing and Reimbursement (3)

Principles of billing and third-party reimbursement as they relate to physician professional coding and APC assignment for health care institutions. Includes E & M coding conventions and modifiers. Coding for physician practice settings—including outpatient, inpatient, ER, observation, SNF, and other common settings. Covers

principles of health service billing, including billing terminologies, the billing process, and universal billing forms. Includes laboratory practice using actual patient records and 3M encoding software to enhance student proficiency.

### HLCS 257 Coding Special Topics (3)

Coding-system usage by reimbursement agencies, laws governing these processes, and federally supervised coding auditing to assure that the laws of coding are followed. Health care delivery systems and internal billing and reimbursement in these settings. Requirements of state and federal coding regulatory agencies, ethics of coding, coding quality, and coding compliance. Content varies to accommodate the changing nature of health care reimbursement processes and laws.

Prerequisite: HLCS 245.

### HLCS 291 Computer Applications in Health Care I (2)

Introduces health care information systems concepts and applications. Focuses on software application in the health care arena. Specific topics addressed include: general system theory; interoperability; specific health record applications (encoder, ADT-R, ROI, etc); electronic health records; personal health records; and patient informatics applications.

### HLCS 292 Computer Applications in Health Care II (2)

Introduces health care information systems concepts and applications. Focuses on software application in the health care arena. Specific topics addressed include: general system theory; interoperability; specific health record applications (encoder, ADT-R, ROI, etc); electronic health records; personal health records; and patient informatics applications.

### HLCS 961 Coding Practicum I (2)

Twelve-week (six hours per week) coding laboratory provides a capstone experience for students who have completed all academic course work in coding. Enables students to apply all state and national coding and reimbursement regulations to a variety of inpatient and

outpatient records. Provides students the opportunity to improve speed and accuracy prior to entering the job force.

Prerequisite: HLCS 257.

### HLCS 962 Coding Practicum II (2)

Continues HLCS 961. HLCS 962 includes an additional twelve-week (six hours per week) coding laboratory experience under direct supervision of an instructor.

Prerequisite: HLCS 961.

## HEALTH INFORMATION EXECUTIVE CERTIFICATE

### HLEC 411 Health Record Management (3)

Provides the student who has an executive background with foundational knowledge of the health information management profession. Functions of the health information management department and how the department relates to other health care departments across the continuum of care (both acute and ambulatory). Studies external forces affecting health information management (federal, state, and JCAHO). Compares paper, hybrid, and electronic health records and documentation formats/standards. Overview of professional associations and ethics.

### HLEC 412 Management and Leadership in Health Information Management (3)

Studies practical aspects of managing health information services. Topics include: ergonomics and the health information department, project management, performance effectiveness and efficiency, change management, review of contemporary legislative movements, and analysis of present-day leadership practices and their effectiveness.

### HLEC 423 Clinical Coding and Classification Systems (3)

Studies medical coding and classifications systems based on disease processes and pathology. Focuses on the practical aspects of coding in health care settings and the role of coding in reimbursement, research, and revenue cycle activities. Includes an overview of

medical coding guidelines established by the American Hospital Association as they pertain to the various body systems and coding for inpatient settings.

### HLEC 434 Health Systems Management for Executives (4)

Studies information management principles, tools, and techniques that support the patient care delivery process. Includes review of SDLC; delineation of categories of information system in health care; data management; and EHR development, technologies, and supporting infrastructure.

### HLEC 444 Seminar in Health Information Management` (3)

Prepares the student who has an executive background to apply his/her comprehensive knowledge of health information management to scenarios and mock examination questions. Reviews major health information management content areas such as: management, statistics, health care delivery, information systems, and health data management. Study topics also include professional development and career preparation.

### HLEC 457 Legal Aspects of Health Information Management (4)

Basic principles of law related to the health care field. Law-making process. Analysis of legislation. Risk management aspects of medical documentation. Overview of the court system in the United States. Development of policies and procedures regarding confidentiality. Release of general, psychological, alcohol/drug, and HIV/AIDS documentation. Release of information in response to subpoenas, court orders, and search warrants. Analysis of consent forms. Assignment for the Federal Register. The concept of improper disclosure and negligence. Analysis of reporting requirements. Overview of medical identity theft. Introduction to the contents of the Health Insurance Portability and Accountability Act (HIPAA) with emphasis on the Privacy Section, and its impact on health care.

## HEALTH INFORMATION ADMINISTRATION

### HLIN 215 Fundamentals of Medical Interpretation (4)

Prepares the bilingual student for entry into medical interpretation for the health care setting. Provides a basic introduction to medical terminology, anatomy and physiology, pathology (disease process), pharmacology, surgical procedures, U.S. health care delivery systems, medical-legal issues, and professionalism.

Prerequisite: Language proficiency test.

### HLIN 301 Introduction to Health Records Management (4)

History of health records, professional ethics, and the administration of health information management as a profession and as a health care facility service. Techniques for numbering and filing records. Principles of indexes and registers, and retention of records. Overview of nomenclatures and classification systems. Philosophy of accreditation, certification, and licensure standards for hospitals. Introduces health care reimbursement systems. In-depth study of patient records, including content and documentation formats. Compares hospital versus ambulatory care records.

### HLIN 303 Basic Coding Principles and Techniques I (3)

Principles of disease and operation classification (coding) using ICD-9-CM and ICD-10-CM. Basic coding techniques for diagnoses, surgical procedures, symptomatology, and other reasons for health care encounters. Coding techniques by topic: infectious disease, endocrine, nutritional, metabolic, hematologic, nervous system, sense organs, respiratory, genitourinary, skin, and musculoskeletal diseases.

### HLIN 304 Basic Coding Principles and Techniques II (3)

Continues review of disease and operation coding with ICD-9-CM. Emphasizes obstetrical and newborn coding, trauma, poisonings, complications of surgical and medical care, diseases and procedures of the circulatory system, and neoplasms. Includes history, principles, and purpose of other recognized systems of

nomenclature and classification in health care, with associated use of disease and operation indexes. Introduces ICD-10-CM.

Prerequisite: HLIN 303

### HLIN 305 Health Care Statistical Applications (3)

Problem-solving approach to health care statistical applications and data presentation. Introduces research statistics. Laboratory sessions include instruction in the use of Microsoft Excel for data presentation and analysis.

### HLIN 306 E & M Coding for Billing and Reimbursement (2)

Principles of evaluation and management coding and E & M modifier assignment pertaining to physician professional billing and institutional APC assignment. Coding for physician practice settings includes outpatient, inpatient, ER, observation, SNF, and other common practice settings. Principles of health service billing covered—including billing terminologies, the billing process, universal billing forms; and reimbursement under commercial, managed care, and federally funded insurance plans.

Prerequisite: HLIN 303, HLIN 304.

### HLIN 325 Pharmacology for Health Information Administration (2)

Provides understanding of pharmacology as required for medical record analysis, audits, and other related studies. Basic definitions, sources of information, classification of drugs, and principles and mechanisms of drug actions.

### HLIN 361 Health Information Administration Laboratory I (1)

Supervised experience in health information departments and other areas of health care facilities. Includes applied laboratory assignments for HIM professional courses.

### HLIN 362 Health Information Administration Laboratory II (1)

Supervised experience in health information departments and other areas of health care facilities. Includes applied laboratory assignments for HIM professional courses.

### HLIN 395 Professional Practice Experience I—Junior Affiliation (3)

Three-week (40 hours per week) supervised clinical experience in a health facility or health-related organization at the end of the junior year. Written and oral reports of experience, with classroom discussion. Not required of registered health information technologists (RHITs).

Prerequisite: Completion of junior-year courses and laboratory assignments; or permission of the department chair.

### HLIN 401 Survey of Health Systems Management (4)

The science of information and its applications to management and patient care in the health care industry. Information systems concepts, theories, technologies, and models; as well as an in-depth review of information system creation and adaptation. General systems concepts in health care: analysis, design, implementation, and maintenance. Strategies for the successful management of information systems in an integrated or interfaced environment, with emphasis on health information applications. Future trends in information system elements presented in conjunction with analysis of these trends in the health record profession. Major term project includes the development of database specifications, inputs, outputs, implementation schedules, and maintenance plans.

### HLIN 404 Clinical Terminologies, Taxonomies and Nomenclatures (2)

Clinical terminologies, code sets, classifications systems, and nomenclatures as used in the electronic health record.

### HLIN 407 Financial Management for Health Information Management (2)

Financial aspects of health care involving prospective reimbursement system, analysis of various health care reimbursement schemes, and financial disbursements. Budget variance analysis, analysis of cost components, operating statements, and productivity related to a department budget. Examines financial accounting systems, financial evaluation ratios, and reports. Strategies and techniques for successful revenue-cycle management.

### HLIN 421 Survey of Health Systems Management—Applied (5)

Applies information systems theory to the development of effective health care facility systems for transition to paperless patient records. Data management strategies, including data integrity, security, quality, and standardization. System security in all environments. Analyzes implementation of health care standards. Examines state and national attempts toward a longitudinal electronic health record, including RHIOs, NHIN, HIE, etc. Major term project includes research, analysis, and presentation of a contemporary issue in information systems that impacts the practice of information management in health care. Laboratories include field trips to institutions for demonstrations of optical imaging and EHR applications.

Prerequisite: HLIN 401

### HLIN 441 Legal Aspects of Health Information Administration I (2)

Basic principles of law related to the health care field. Law-making process. Analysis of legislation. Risk management aspects of medical documentation. The court system in the United States. Development of policies and procedures regarding confidentiality. Release of general, psychological, alcohol, drug, and HIV/AIDS documentation. Release of information in response to subpoenas, court orders, and search warrants. Analysis of consent forms. Assignment for The Federal Register. Improper disclosure and negligence. Reporting requirements.

### HLIN 442 Legal Aspects of Health Information Administration II (3)

Principles of law related to the health care field. The concept of improper disclosure and negligence. Analysis of reporting requirements. Overview of medical identity theft. Introduction to the contents of the Health Insurance Portability and Accountability Act (HIPAA), with emphasis on the privacy section, and its impact on health care. Legal aspects of the electronic health record.

### HLIN 444 Corporate Compliance in Health Care (3)

Practical application of the guiding principles of corporate compliance in health care organizations. Analyzes standards and policies established by the Center for Medicare and Medicaid Services. Studies in-depth Joint Commission on Accreditation of Health Care Organization, Health Insurance Portability and Accountability Act (HIPAA), qui tam laws, and fiscal intermediaries—emphasizing business ethics and integrity. Includes the process of institutional audits.

### HLIN 445 Coding Seminar (3)

Advanced coding concepts and comprehensive review of all health care coding systems. Current procedural terminology (CPT) at the beginning and intermediate levels. Management issues in reimbursement using DRGs, APC, and other prospective payment systems. Reviews the federally supervised coding auditing process, including state and federal coding and billing regulations, chargemaster maintenance, coding ethics, coding quality, and coding compliance. Various code sets and terminologies used in health care systems. Overview of E & M coding.

Prerequisite: HLIN 304; or equivalent.

### HLIN 451 Quality Improvement in Health Care (3)

Quality improvement methodology. Data retrieval, display, and follow-up for various sectors of health care. Mechanisms for promoting facility-wide participation in achieving optimum patient care, as delineated in medical staff-information management, accreditation,

and government standards. Risk management as an integral facet of quality improvement. Relationship to corporate compliance.

### HLIN 462 Health Information Administration Laboratory III (1)

Supervised experience in health information departments and other areas of health care facilities, with emphasis on management. Includes applied laboratory assignments for HIM professional courses.

### HLIN 463 Health Information Administration Laboratory IV (1)

Supervised experience in health information departments and other areas of health care facilities, with emphasis on management. Includes applied laboratory assignments for HIM professional courses.

### HLIN 475 Research Methods in Health Information Management (3)

Introduces the scientific method in research. Focuses on the major steps of the research process as these steps relate to research report evaluation, proposal writing, literature review, development of conceptual framework, identification of variables, statement of hypotheses, research design, and analysis and presentation of data. Common research design and assessment of risk in epidemiologic studies.

### HLIN 483 Long-Term and Alternative Delivery Systems in Health Care (4)

Focuses on aspects of health information management in delivery systems other than acute care, and their interrelationships. Health record content, format, regulatory and accreditation requirements, the role of the HIM professional, data collection/reporting, risk management, utilization management, and quality improvement areas. Long-term care, hospital-based ambulatory care, free-standing ambulatory care, hospice, home health care, dialysis treatment centers, veterinary medicine, consulting, correctional facilities, mental health care, substance abuse, dental care, and managed care organizations. Field trip to a skilled nursing facility.

#### HLIN 484 Current Topics in Health Information Administration (3)

Topics of current interest in the field of health information administration, including career planning, management skills, and professional development. Content varies.

Prerequisite: HLIN 494.

#### HLIN 493 Health Information Management I (4)

Introduces basic management functions, philosophies, and tools of health care management. Emphasizes management theory, management tools, and application. Specific topics include: planning, organizing, controlling, management by objective, problem solving and decision making, productivity management, and group dynamics.

#### HLIN 494 Health Information Management II (5)

Advanced management study of topics relevant to the HIM profession. Topics include: ergonomics and workplace design; transcription management; individual and organizational productivity; project management; attracting, developing, and maintaining a workforce; innovation and change management; federal labor legislation; ethical and social responsibility in management; disaster preparedness and entrepreneurship. Six-to-eight hour administration management laboratory addresses contemporary administrative management strategies, strategic planning, business planning, and employee relations at the administrative level. Organizational, interrelational, and managerial functions and concepts in the health care setting. Laboratory assignments include, but are not limited to, management case studies, Visio software training, and office layout development using Visio software.

Prerequisite: HLIN 493 or equivalent

#### HLIN 495 Professional Practice Experience Senior Affiliation (3)

Directed experience (120 clock hours) at an approved health care or health-related facility. Applies skills and knowledge to management. Written and oral reports of experience, with classroom discussion. International experience may be available.

Prerequisite: Completion of the first two quarters of the senior year; or permission of the department chair.

#### HLIN 499 Health Information Administration Independent Study (1-4)

Student submits a project or paper on a topic of current interest in an area of health information administration. Regular meetings to provide the student with guidance and evaluation. Elected on the basis of need or interest. May be repeated.

### HEALTH PROMOTION AND EDUCATION

#### HPRO 414 Personal Health and Fitness (4)

Applies health principles to the student's physical, mental, spiritual, and social health.

#### HPRO 415 Consumer Health (3)

Studies fitness and health in terms of consumer welfare, marketing, and fraud. Discusses ethics as related to professional behavior.

#### HPRO 416 Health through the Lifespan (4)

Examines changes in health status that may occur between birth and old age. Emphasizes tailoring wellness strategies and programs to the needs of various age groups.

#### HPRO 417 Biomechanics (4)

Studies the laws of motion and kinetics of human movement. Discusses basic body movements and how to maximize efficiency. Includes the role of exercise in injury prevention.

Prerequisite: Anatomy and physiology.

**HPRO 418 Introduction to Human Disease (3)**

Introduces acute and chronic disease processes by organ system: musculoskeletal, cardiovascular, nervous, digestive, urogenital, integumentary, respiratory, and endocrine.

**HPRO 421 Administration of Wellness Programs (4)**

Surveys the contribution wellness programs make to corporate, commercial, and community programs. Basic structure, organization, and management of fitness facilities and programs—including budgeting, marketing, and sales. Introduces legal, management, and accounting principles related to program sustainability. Includes program evaluation, cost-benefit analysis, cash flow management, personnel development, and strategic planning.

**HPRO 424 Health Appraisal and Wellness Testing (4)**

Instruction and guided practice in performing a wide variety of fitness tests. Interprets test data and applies results to individualized exercise prescriptions. Laboratory included.

**HPRO 425 Exercise Science (3)**

The relationship of basic physiological responses to exercise and health, longevity, and athletic performance. Presents anatomy and physiology of exercise, including: cardiorespiratory fitness, muscular strength, muscular endurance, flexibility, and body composition.

Prerequisite: HPRO 424; and anatomy and physiology.

**HPRO 426 Fitness for Special Populations (4)**

Exercise as an adjunct to the treatment of illness and as an aid to the prevention of chronic disease. How to set up safe and effective exercise programs for the disabled, elderly, and other populations of interest.

Prerequisite: HPRO 424.

**HPRO 431 Psychology and Sociology of Sport (3)**

Role, effect, and importance of sport in society. Psychological principles that motivate individuals to initiate and continue sport activities.

**HPRO 432 Injury Prevention (2)**

Use of facility and equipment management to prevent injuries. Emphasizes common injuries, risk factors, training techniques that prevent or minimize injuries, development of facility rules and regulations, and equipment maintenance.

**HPRO 433 Athletic Training (3)**

Organization and management of athletic training programs. Includes instruction about the evaluation and treatment of heat exhaustion and heat stroke; and field injuries such as abrasions, cuts, and concussions. Leads to certification in basic CPR and first aid. Laboratory included.

Prerequisite: HPRO 432; and anatomy and physiology.

**HPRO 436 Programs in Health Promotion (4)**

Provides overview of existing health promotion programs in corporate, commercial, and community settings. Gives special attention to the development of new programs designed to meet existing needs in a variety of venues.

**HPRO 495 Wellness Programs Laboratory (3)**

Agency-based guided practice designed to acquaint the student with existing and developing wellness programs. May be repeated for three quarters.

Prerequisite: HPRO 421.

**HPRO 498 Senior Project (1, 3)**

Agency-based project during which the student addresses problems associated with and recommends solutions to a management and/or evaluation issue using problem-solving strategies.

Prerequisite: HPRO 421.

**HPRO 499 Directed Study/Special Project (1-4)**

Individual arrangements for undergraduate, upper division students to study under the guidance of a

program faculty member. May include readings, literature review, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any undergraduate degree program.

#### HPRO 501 Human Anatomy and Physiology I (6)

Systematic investigation of the form and function of human biological systems. Laboratory included. Limited to doctoral degree students.

#### HPRO 502 Human Anatomy and Physiology II (6)

Continues HPRO 501. Systematically investigates the form and function of human biological systems. Laboratory included. Limited to doctoral degree students.

#### HPRO 503 Human Anatomy and Physiology III (4)

Continues HPRO 502. Systematically investigates the form and function of human biological systems. Laboratory included. Limited to doctoral degree students.

#### HPRO 507 Spirituality and Health: The Wholeness Connection (3)

Examines how spiritual/religious beliefs and practices might influence physical health through known physiological mechanisms of the neuroendocrine and immune systems. How devout spiritual/religious beliefs and practices might affect not only a sense of well-being and quality of life, but also longevity. Information about religious/spiritual study methodologies and research instruments. Explores principles of spiritual care as applied to practice, including perspectives on the theology of healing, the connection between body and spirit, and the roles of faith and meaning.

#### HPRO 508 Aspects of Health Promotion (2)

Dynamics of community and individual health. Factors in the promotion of a healthful lifestyle, including cardiovascular enhancement, stress reduction

and coping mechanisms, nutritional awareness, weight management, and substance control. Available to non-major students.

#### HPRO 509 Principles of Health Behavior (3)

Introduces key health behavior-change theories and psychosocial determinants of health behaviors. Provides an overview of motivation, stress and coping, addiction, culture, and religion as related to health behavior. Laboratory emphasizes communication, leadership, and group process activities.

#### HPRO 514 Values, Culture, and Health (3)

Specific values related to primary public health problems in today's multicultural society. Studies beliefs, attitudes, and values that affect behavior change. Includes value development and educational strategies that address values. Major project included.

#### HPRO 515 Mind-Body Interactions and Health Outcomes (3)

Studies the effect of the neurological system on physical health, with a focus on psychoneuro-immunology.

Prerequisite: Anatomy and physiology, biochemistry.

#### HPRO 519 Pharmacology (3)

Basic and clinical pharmacology. Emphasizes drugs of concern to health promotion specialists. Principles of drug addiction, drug receptors and pharmacodynamics, pharmacokinetics, and practical uses for drugs.

Prerequisite: Anatomy and physiology, general chemistry, organic chemistry, biochemistry.

#### HPRO 523 Maternal/Child Health: Policy and Programs (3)

Examines national and global public health policy, initiatives, and programs targeting childbearing women, as well as infants and children. Explores selected issues—such as poverty, access to and utilization of health care, violence, and perinatal chemical exposure—within socioeconomic, political, and ethical frameworks. Emphasizes interdisciplinary delivery of services within a public health setting.

**HPRO 524 Adolescent Health (3)**

Studies developmental and health problems unique to the adolescent period of life. Focuses on special needs and public health programs designed to reach adolescents. Gives attention to special problems, such as social adaptation, juvenile delinquency, drug abuse, suicide, adolescent pregnancy.

**HPRO 525 Topics in Health Promotion (1-4)**

Lecture and discussion of a current topic in health promotion bearing on the theory or practice of one aspect of the discipline. Specific content varies from quarter to quarter. May be repeated for additional credit.

**HPRO 526 Lifestyle Diseases and Risk Reduction (3)**

Discusses current lifestyle diseases, including: cardiovascular, metabolic, communicable, and nutritional. Concepts regarding risk factors, screening approaches, and risk reduction, with impact on specific health parameters.

Prerequisite: Anatomy and physiology; or consent of instructor.

**HPRO 527 Obesity and Disordered Eating (3)**

Explores causes and development of obesity, principles of weight management, and relapse prevention. Includes discussion of the causes and treatment of anorexia nervosa and bulimia.

**HPRO 528 Controversial Health Practices (2, 3)**

Epidemiological analysis of quackery in North America. Studies traditional and/or controversial health beliefs and practices, including why people advocate and use them. Topics include: allopathy, aromatherapy, ayurvedic medicine, Chinese medicine, chiropractic, energy medicine, faith healing, food faddism, herbalism, holistic health, homeopathy, iridology, medical dowsing, naturopathy, New Age medicine, pseudopsychologies, radionics, reflexology, spiritism, therapeutic touch, and more. Laboratory included for third unit of credit.

**HPRO 529 Preventive and Therapeutic Interventions in Chronic Disease (4)**

Specific preventive care techniques dealing with lifestyle and chronic disease in the clinical environment. Multidisciplinary lifestyle interventions in the prevention and treatment of dyslipidemia, diabetes, hypertension, osteoporosis, sleep disorders, and other chronic conditions. Uses case studies and role playing to explore interventions in a variety of clinical scenarios.

**HPRO 530 Fundamentals of Research in Health Behavior and Health Education (3)**

Introduces research in the behavioral health sciences and health education. Helps students apply appropriate research principles and techniques in health education. Provides an overview of the philosophy and methods of science—including causal inference, developing research questions and testing hypotheses, and identifying appropriate data collection techniques. Emphasizes development of a practical understanding of why, when, and how to use research methods; and how to become an informed reader of scientific research articles and reports. Addresses experimental methods, surveys, and quantitative research designs. Covers other topics, including assessments of reliability, validity, measurement, and research ethics.

**HPRO 531 Pathology of Human Systems I (3)**

Fundamental mechanisms of disease, including degenerative changes and physical and chemical injury. Reviews diseases by organ system: endocrine, biliary, hepatic, respiratory, digestive, urogenital, skeletal, and central nervous. Limited to doctoral degree students.

**HPRO 532 Pathology of Human Systems II (3)**

Introduces micropathological organisms. Surveys tissue changes in infectious diseases. Growth disorders, including: basic genetic problems and neoplasia; cardiovascular, circulatory, and inflammatory systems. Limited to doctoral degree students.

Prerequisite: HPRO 531.

**HPRO 534A Research Methods (2)**

Philosophy of scientific research, sources of research invalidity, quantitative and qualitative literature review techniques, setting research goals and objectives, quasi-

experimental and experimental design, research ethics. Requires presentation and critique of published research and literature review. Taken over the course of two quarters for a total of 4 units (HPRO 534A, 2 units Winter Quarter; and HPRO 534B, 2 units Spring Quarter).

Prerequisite: STAT 509.

#### HPRO 534B Research Methods (2)

Philosophy of scientific research, sources of research invalidity, quantitative and qualitative literature review techniques, setting research goals and objectives, quasi-experimental and experimental design, research ethics. Requires presentation and critique of published research and literature review. Taken over the course of two quarters for a total of 4 units (HPRO 534A, 2 units Winter Quarter; and HPRO 534B, 2 units Spring Quarter).

Prerequisite: HPRO 534A.

#### HPRO 535 Health Education Administration and Leadership (3)

Analyzes the managerial and leadership roles of the health education specialist in both public and private health organizations. Emphasizes organizational structure and health communication; as well as managing, supervising, marketing, decision making, and other administrative roles.

#### HPRO 536 Program Planning and Evaluation (2)

Introductory course that utilizes the planning cycle to address public health problems. Analyzes trends in health care planning. Applies planning cycle to selected topics. Provides overview of evaluation design, methodology, and instrument development for health education programs. Laboratory included.

#### HPRO 537A Community Programs

##### Laboratory—A (1)

The first of a three-quarter sequence for health promotion and education (HPRO) majors; a stand-alone laboratory for other majors. Students operationalize qualitative research methods in a laboratory environment by conducting observational assessments, windshield surveys, and personal interviews; participating in focus groups; and compiling secondary

data for completing a community-needs assessment.

HPRO students use their data to plan a health education intervention for their target/priority population during Winter Quarter; during Spring Quarter they implement and evaluate their programs.

#### HPRO 537B Community Programs

##### Laboratory—B (2)

Student designs marketing and evaluation plans for community-based health education program.

Implements and evaluates programs developed during HPRO 537A.

#### HPRO 537C Community Programs

##### Laboratory—C (1)

Students continue their marketing plan while implementing and evaluating their programs in the community. Students write a plan for program sustainability with community organizations as stakeholders.

Prerequisite: HPRO 537A, HPRO 537B.

#### HPRO 538 Health Education Program Development and Evaluation (3)

Uses program-planning theories and models with diagnostic techniques to design, deliver, and evaluate health promotion and education programs in a variety of settings: community, occupational, educational, and health care. Presents steps in the health educational planning process, which involves: 1) conducting social, epidemiological, behavioral, environmental, ecological, educational, administrative, and policy assessments; 2) writing goals and objectives; 3) selecting appropriate intervention strategies; 4) integrating and applying behavioral and educational theories to interventions; 5) enhancing instructional delivery and design skills; and 6) evaluating the educational process and reporting results.

#### HPRO 539 Policy and Issues in Health Education (3)

Examines and discusses policy issues, trends, and strategies relating to health education—including but not limited to HIV/AIDS, women's health, injury prevention and control, tobacco and other drug issues,

and health issues in ethnically diverse populations. Provides opportunities to develop and improve presentation skills. Project included.

#### HPRO 542 Health and Dependency Counseling (3)

Applies behavior change and addiction theory in a practical way to the counseling process. Gives attention to individuals with multiple, concurrent health issues such as stress, lifestyle problems, and addictions. Laboratory required.

Prerequisite: HPRO 509; HPRO 538 recommended.

#### HPRO 543 Writing for Health Professionals (2, 3)

Writing by health professionals for popular, lay, or professional publications. Student selects journal or magazine, writes query letter, and prepares abstract and manuscript in final form for submission. Includes preparation of camera-ready art. One publishable paper for 2 units; two papers for 3 units. Limited to doctoral graduate degree students. HPRO students must register for 3 units.

#### HPRO 544 Health Education Evaluation and Measurement (3)

Student selects and develops health education and psychosocial measurement instruments, determines validity and reliability of evaluation tools, provides overview of data-collection methods and protocols, analyzes and interprets results, and communicates evaluation findings. Limited to doctoral degree students.

#### HPRO 548 Community and Domestic Violence (3)

Provides overview of issues of violence in American society. Explores domestic and community violence as they affect selected population groups. Psychological approaches to etiology and intervention. Explores societal violence, including violence observed in populations such as gangs and high-risk youth. Topics include spousal, elder, and child abuse. Special attention directed toward co-factors, such as alcohol and drug abuse, and their relationship to domestic violence. Laboratory included.

#### HPRO 550 Women in Development (3)

Global epidemiological profile of women in terms of educational patterns, economic productivity, social status, and mortality patterns. Risks to physical and psychosocial health. National and international legal and regulatory issues and programs to promote access to health care, economic productivity, and the health of women.

#### HPRO 553 Addiction Theory and Program Development (3)

Applies addiction process theory in a practical way to program development. Emphasizes alcohol, tobacco, and other drug (ATOD) problems, using case studies and extensive reading as part of a problem-solving approach. The epidemiological, pathological, physiological, psychological, and spiritual bases for prevention and treatment of addictions. Laboratory included.

#### HPRO 555 Early-Age Parenthood (3)

Causes, consequences, and interventions in adolescent pregnancy. Issues of adolescent fertility, including social and economic roots, relationship to cultural change, and individual developmental etiology. Explores consequences of early fertility, focusing primarily on interventions and assessment.

#### HPRO 556 High-Risk Infants and Children: Policy and Programs (3)

Examines development of at-risk infants and children, and evaluates interventions that may modify cognitive and social outcomes. Takes into account medical risk factors, such as preterm birth, prenatal substance exposure, and respiratory distress; as well as social factors, such as gender and socioeconomic status. Critically analyzes the efficacy of early-intervention strategies, such as UNICEF's Baby Friendly Hospital Initiative, child survival strategies, and the Initiative for the Girl Child; as well as U.S.-based programs such as Head Start. Examines legal, regulatory, and ethical issues.

Prerequisite: Physiology or consent of instructor.

### HPRO 557 Issues and Programs in Family Planning (3)

Examines options in contraceptive technology and accompanying social, cultural, political, and ethical considerations. Introduces policy issues and programmatic strategies related to development, organization, and management of family-planning programs—including logistics, education, politics, and social issues. Includes fertility issues, prevention and postponement of pregnancy, child spacing, and abortion. Explores information, education, and communication designs.

### HPRO 559 Lactation Management (3)

Analyzes the managerial and leadership roles of the health education specialist in both public and private health organizations. Emphasizes organizational structure and health communication; as well as managing, supervising, marketing, decision making, and other administrative roles.

### HPRO 564 Mental Health and Society (3)

Interdisciplinary study of mental health issues affecting society and its basic biologic unit, the family. Study and application of intervening strategies in life crises. Prevention of adjustment reactions evolving beyond the level of a life process crisis. Laboratory included.

### HPRO 565 Tobacco Use: Prevention and Interventions (3)

The second part of a three-part, module-based course. Provides a comprehensive overview of the pathophysiology that underlies the health impact of tobacco use on individuals, families, and society; smoking behavior; pharmacodynamics of nicotine delivery; mechanisms of nicotine addiction, and most importantly, intervention methods (cessation and prevention). Includes individual, group, systems, and public intervention strategies; and provides the measures of efficacy for each. Incorporates terminology and concepts in epidemiology, anatomy, physiology, immunology, endocrinology, and biochemistry. Recommended that EPDM 561, 562 also be completed if HPRO 565 is taken as an elective.

### HPRO 567 Reproductive Health (3)

Focuses on issues of reproductive health of women and men within the context of public health policy, community-based planning, and ethical decision making. Examines public health interventions at various points of the reproductive life cycle, including pubertal, preconceptual, and menopausal. Explores issues that affect health and fertility—including sexually transmitted diseases; reproductive tract infections; sexual violence, such as rape, incest, and genital mutilation; sexual trafficking; and nutritional and lifestyle issues impacting directly on reproductive health.

### HPRO 573 Exercise Physiology I (3)

Basic preparation for development and leadership of exercise programs. Includes exercise physiology, training, acute and chronic effects of exercise, simple assessment of fitness, role of exercise in prevention of common health problems, and management of selected risk factors. Discusses endurance, strength, flexibility, and aerobic exercises. Laboratory included.

### HPRO 575 Immune System: Public Health Applications (3)

Explores the biological and behavioral consequences from evidence-based scientific research of the relationships and communications between the brain, the peripheral nervous system, the endocrine system, and the immune system. Presents an introductory but comprehensive summary of various scientific disciplines that study brain, immune system, and health behavior interactions that provide the health care professional with an integrative understanding of lifestyle, whole person care for optimal immune system function and wellness.

### HPRO 578 Exercise Physiology II (3)

Physiologic basis of the normal body function during exercise. Emphasizes the training effects of aerobic exercise. Noninvasive laboratory methods of the study of the circulatory and respiratory systems. Laboratory included.

Prerequisite: HPRO 573; and basic physiology.

**HPRO 584 Aging and Health (3)**

Analyzes the physical, psychological, and social factors that influence the health of the aging population. Includes theories of aging, age-related changes, acute and chronic health problems of aging, medication use, and long-term care issues.

**HPRO 586 Introduction to Preventive Care (1)**

Provides overview of preventive care's role within public health. Orientation to doctoral program, with attention to professional portfolio preparation. Limited to doctoral degree students in preventive care.

**HPRO 587 Preventive Care Practice Management (2)**

Provides overview of issues and challenges in the operation of a preventive care practice. Emphasizes billing and reimbursement issues, and legal and ethical responsibilities of the preventive care specialist. Limited to doctoral degree students in preventive care.

**HPRO 588 Health Behavior Theory and Research (4)**

Analyzes in-depth factors contributing to decisions about health behavior. Theory and research relevant to individual, family, organization, and community behavior. Readings from original theorists and researchers on topics related to health behavior. Emphasizes development of critical-thinking skills, professional written work, and oral presentation. Application of theory to development of a basic research proposal. Limited to doctoral degree students.

Prerequisite: HPRO 509; or equivalent. Consent of instructors for nondoctoral degree students.

**HPRO 589 Qualitative Research Methods (3)**

Applies qualitative methods to instrument design, sampling, and data collection. Focuses on public health issues, ethics, and theory-building. Supervised needs assessment in a selected community.

**HPRO 606 Motivational Interviewing (2)**

Introduces students to the effective methodology of motivational interviewing. Explores the techniques and theories associated with this treatment method. Covers in detail the skills needed to successfully motivate

patients toward healthier lifestyles. Gives attention to practical information needed to be a successful health professional.

Prerequisite: Minimum of 90 units of course work toward Dr.P.H. (preventive care) degree.

**HPRO 607 Stress Management (2)**

Comprehensively covers all aspects of stress as it relates to all areas of health. Addresses definitions of stress, emphasizing the potential effect of stress on physical and mental diseases. Presents coping mechanisms, e.g., cognitive behavior therapy, music therapy, spirituality, and several other techniques. Presented in a service-learning format in which students are in direct contact with the community applying stress-prevention and coping strategies.

**HPRO 608 Advanced Seminar in Health Education (2)**

Studies current issues in health promotion and education from the standpoint of historical setting. Explores emerging challenges to professional preparation in health promotion and education, and the place of professional health educators in the practice of public health. Must be taken for a total of 6 units. Limited to health education doctoral degree students.

Prerequisite: Consent of instructors for nondoctoral degree students.

**HPRO 614 Seminar in Maternal and Child Health Practice (2)**

Analyzes issues, trends, and current practices affecting maternal and child health. Discussion and student participation. Limited to Track I maternal-child health practitioners.

**HPRO 685 Preliminary Research Experience (2)**

Experience gained in various aspects of research under the guidance of a faculty member and by participation in an ongoing project. Must be completed prior to beginning dissertation/research project. Limited to doctoral degree students.

### HPRO 692 Health Education Research Consultation (1-4)

Individual consultation on project design and data collection, analysis, and evaluation.

### HPRO 694 Research (1-14)

Independent research on problems currently receiving study in the School of Public Health or in associated institutions; collaboration with researcher/faculty member. Research program arranged with faculty member(s) involved and approved by advisor. Research consultation toward dissertation available. Minimum of thirty hours required for each unit of credit. Written report required. Limited to qualified master's and doctoral degree students.

Prerequisite: Consent of instructor responsible for supervision and of program advisor.

### HPRO 695 Community Practicum (1-3)

Individual arrangements for selected students to participate in a guided, structured, practical experience in ongoing clinical lifestyle-modifying situations. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to a degree program.

### HPRO 696 Directed Study/Special Project (1-4)

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include reading, literature review, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any master's degree program.

Prerequisite: Consent of instructor and of program advisor.

### HPRO 698 Dissertation (1-14)

Student prepares a manuscript presenting results of the doctoral research study. Limited to doctoral degree candidates.

### HPRO 700 MIP-Peace Corps Field Practicum (0)

Designed for students who must maintain continuous registration in the School of Public Health as a condition of the twenty-seven-month Peace Corps field practicum that is part of their master's degree program.

### HPRO 703 Applied Research Experience (12)

Training and supervised experience with other health professionals in applied settings. Opportunity to work with individuals, families, and groups in assessing health and building relationships conducive to health-promoting behavior changes. Limited to doctoral (preventive care) degree students.

### HPRO 704A Internship (3)

Training and supervised experience (minimum of 100 clock hours) with other health professionals in applied settings. Opportunity to work with individuals, families, and groups in assessing health and building relationships conducive to health-promoting behavior changes. Limited to doctoral (preventive care) degree students. May be repeated for a total of up to 12 units.

### HPRO 704B Internship (6)

Training and supervised experience (minimum of 200 clock hours) with other health professionals in applied settings. Opportunity to work with individuals, families, and groups in assessing health and building relationships conducive to health-promoting behavior changes. Limited to doctoral (preventive care) degree students. May be repeated for a total of up to 12 units.

### HPRO 704C Internship (9)

Training and supervised experience (minimum of 300 clock hours) with other health professionals in applied settings. Opportunity to work with individuals, families, and groups in assessing health and building relationships conducive to health-promoting behavior changes. Limited to doctoral (preventive care) degree students.

### HPRO 704D Internship (12)

Training and supervised experience with other health professionals in applied settings. Opportunity to work with individuals, families, and groups in assessing health and building relationships conducive to health-promoting behavior changes. Limited to doctoral (preventive care) degree students. A ten-week (40 hours/week) field internship.

### HPRO 797 MIP Residency in Health Education (12)

Individual guided study in operational field practice under faculty supervision. Limited to graduate students in the HPRO Master's International Program (M.P.H./MIP) whose projects have been approved by their committees.

### HPRO 798A Field Practicum (3)

Allows the student an opportunity to demonstrate mastery of basic competencies in health education, strengthens areas of weakness, integrates theoretical constructs with practical applications in the community, and documents an intervention from design through evaluation stages. Student expected to implement a project with supervision by an experienced health educator at the M.P.H. or doctoral degree level. Concurrent attendance in seminars on campus required.

Prerequisite: Course requirements, satisfactory completion of the culminating activity, and consent of instructor(s) responsible for supervision and of program advisor.

### HPRO 798B Field Practicum (6)

Allows the student an opportunity to demonstrate mastery of basic competencies in health education, strengthens areas of weakness, integrates theoretical constructs with practical applications in the community, and documents an intervention from design through evaluation stages. Student expected to implement a project with supervision by an experienced health educator at the M.P.H. or doctoral degree level. Concurrent attendance in seminars on campus required.

Prerequisite: Course requirements, satisfactory completion of the culminating activity, and consent of instructor(s) responsible for supervision and of program advisor.

### HPRO 798D Field Practicum (12)

Allows the student an opportunity to demonstrate mastery of basic competencies in health education, strengthens areas of weakness, integrates theoretical constructs with practical applications in the community, and documents an intervention from design through evaluation stages. Student expected to implement a project with supervision by an experienced health

educator at the M.P.H. or doctoral degree level (40 hours per week for ten weeks). Concurrent attendance in seminars on campus required.

## HUMANITIES

### HUMN 311 Sacred Music I (2)

Regular participation in a church choir, with an approved history of sacred music component.

### HUMN 312 Sacred Music II (2)

Regular participation in a church orchestra, with an approved history of sacred music component.

### HUMN 404 Survey of Health Care Narrative (2)

An interdisciplinary literature course in which students examine stories of illness, health, and healing as a way of enhancing understanding and appreciation of the importance of the human/patient's story in the health science profession.

Prerequisite: Completed freshman composition sequence of courses .

### HUMN 405 Creative Writing in the Healing Arts (2, 3)

Assists students in a creative writing project—poetry, nonfiction, fiction—that wholistically integrates their experience as writers and health care professionals. A longer creative project required for third unit.

### HUMN 406 Representations of Healing in Ethnic Literature (2, 3)

An interdisciplinary literature course in which students examine how illness and healing are represented in literature written by or about people from ethnic groups in America. An additional reflective paper required for third unit.

Prerequisite: Completed sequence of Freshman Composition

### HUMN 407 Medical Humanities (2-3)

Students examine how the humanities, arts, and medicine are studied and applied in the health care environment. An additional reflective paper required for third unit.

**HUMN 451 Humanities Integration I (1)**

Integration of core values and professional aspirations with specified learning events that are largely extraclassroom. Focuses on critical thinking and clear writing.

**HUMN 452 Humanities Integration II (3)**

Integrates core values and professional aspirations with specified learning events that are largely extraclassroom. Visual and performing arts provide resources for course discussions.

Prerequisite: HUMN 451.

**HUMN 475 History and Health Care (3)**

A survey of world history from ancient to modern times, with significant events in the evolution of health care placed into their larger context. Places a premium on analysis of historical events and how theories influence and are influenced by health care.

**HUMN 487 Philosophy of Health Care (3)**

Considers the development of medical theory, institutions, practice, and their interrelationships. Focuses on the nature of scientific thought, the status of medical knowledge, and the connection between theory and observation.

**HUMN 505 Creative Writing in the Healing Arts (2-3)**

Assists students in a creative writing project—poetry, fiction, nonfiction—that wholistically integrates their experience as writers and health care professionals. A longer creative project required for third unit.

**HUMN 506 Representations of Healing in Ethnic Literature (3, 4)**

An interdisciplinary literature course in which students examine how illness and healing are represented in literature written by or about people from ethnic groups in America. A longer critical paper required for fourth unit.

**HUMN 507 Seminar in Medical Humanities (3, 4)**

Students examine how the humanities, arts, and medicine are studied and applied in the health care environment. Additional reflective written paper required for fourth unit.

**HUMN 508 Writing for Academic Publications (3)**

Assists students in revising and submitting an academic paper for publication.

**INTEGRATED BIOMEDICAL GRADUATE STUDIES****IBGS 501 Biomedical Communication and Integrity (2)**

Improves students' scientific communication skills, as well as increases their awareness of proper ethical conduct in biomedical research. Teaches appropriate techniques for written and oral presentations; as well as ethics and standard practices for record keeping, data analysis, and authorship.

**IBGS 502 Biomedical Information and Statistics (2)**

Introduces students to the basics of statistical analysis in a relevant biomedical setting. Additionally, provides practical information on the use of database systems and software tools for data management and analysis.

**IBGS 503 Biomedical Grant Writing (2)**

Encompasses the process of writing a biomedical research grant from medical problem through final draft of an NIH-style research proposal. With guidance from the instructor, students design and write a research proposal that is ready for submission to the NIH. Familiarizes students with potential funding sources, the process of formulating a fundable research plan, and communicating that plan in an appropriate format.

**IBGS 511 Cellular Mechanisms and Integrated Systems I (8)**

The first quarter of a three-quarter sequence designed to give first-year graduate students a broad, integrated

exposure to the molecular and cellular basis of modern human biology. Focuses on the structure and function of biological macromolecules such as proteins, RNA, and DNA.

Prerequisite: Admission to one of the basic science graduate programs, including Medical Scientist Training Program (MSTP).

### IBGS 512 Cellular Mechanisms and Integrated Systems II (8)

The second quarter of a three-quarter sequence designed to give first-year graduate students a broad, integrated exposure to the molecular and cellular basis of modern human biology. Focuses primarily on cellular structure and function.

Prerequisite: IBGS 511.

### IBGS 513 Cellular Mechanisms and Integrated Systems III (8)

The third quarter of a three-quarter sequence designed to give first-year graduate students a broad, integrated exposure to the molecular and cellular basis of modern human biology. Focuses on how cells and molecules work together to create functioning organs, ending with a treatment of genetic, lifestyle, and microbial contributions to human pathology.

Prerequisite: IBGS 511, IBGS 512.

### IBGS 521 Cellular Mechanisms and Integrated Systems I Journal Club (2)

A component of IBGS, taught in a journal-club format. Students assigned to a literature topic present an oral critique of a recent paper—recommended and mediated by faculty—relevant to basic sciences covered by IBGS 511 lectures for the week. If not presenting, student reads and prepares a written critique of the assigned paper. Participation required. Designed to help students (1) critically evaluate the scientific literature; (2) develop both oral and written communication skills; (3) develop the habits of asking questions during oral presentations and of participating in scientific discussion; (4) broaden knowledge of current research; (5) gain insight into the approaches different researchers take toward scientific problems by promoting scientific interaction in an informal atmosphere; (6) better understand how basic science

research contributes to the medical sciences; and (7) design and write a grant proposal-type question, rationally defining its importance and designing experimentation whereby the question/hypothesis can be answered/tested. Open to all interested students and researchers at Loma Linda University.

Prerequisite: Enrollment in any Loma Linda University School of Medicine graduate program.

### IBGS 522 Cellular Mechanisms and Integrated Systems II Journal Club (2)

A component of IBGS, taught in a journal-club format. Students assigned to a literature topic present an oral critique of a recent paper—recommended and mediated by faculty—relevant to basic sciences covered by IBGS 512 lectures for the week. If not presenting, student reads and prepares a written critique of the assigned paper. Participation required. Designed to help students (1) critically evaluate the scientific literature; (2) develop both oral and written communication skills; (3) develop the habits of asking questions during oral presentations and of participating in scientific discussion; (4) broaden knowledge of current research; (5) gain insight into the approaches different researchers take toward scientific problems by promoting scientific interaction in an informal atmosphere; (6) better understand how basic science research contributes to the medical sciences; and (7) design and write a grant proposal-type question, rationally defining its importance and designing experimentation whereby the question/hypothesis can be answered/tested. Open to all interested students and researchers at Loma Linda University.

### IBGS 523 Cellular Mechanisms and Integrated Systems III Journal Club (2)

A component of IBGS, taught in a journal-club format. Students assigned to a literature topic present an oral critique of a recent paper—recommended and mediated by faculty—relevant to basic sciences covered by IBGS 513 lectures for the week. If not presenting, student reads and prepares a written critique of the assigned paper. Participation required. Designed to help students (1) critically evaluate the scientific literature; (2) develop both oral and written communication skills; (3) develop the habits of asking

questions during oral presentations and of participating in scientific discussion; (4) broaden knowledge of current research; (5) gain insight into the approach different researchers take toward scientific problems by promoting scientific interaction in an informal atmosphere; (6) better understand how basic science research contributes to the medical sciences; and (7) design and write a grant proposal-type question, rationally defining its importance and designing experimentation whereby the question/hypothesis can be answered/tested. Open to all interested students and researchers at Loma Linda University.

#### IBGS 604 Introduction to Integrative Biology Presentation Seminar (1)

Students attend a series of research descriptions presented by graduate students.

#### IBGS 605 Integrative Biology Presentation Seminar (1)

A seminar course that gives graduate students in the basic sciences an opportunity to practice oral presentations on current research or current literature covering the various aspects of regulatory and integrative biology as applied to molecules, cells, tissues, organs, systems, and microbes. Students and faculty participate in a discussion and critical evaluation of the presentation.

#### IBGS 607 Integrated Biomedical Graduate Studies Seminar (1)

Weekly seminars presented by invited speakers in the biomedical sciences disciplines. Students required to register for course every quarter throughout their training.

#### IBGS 696 Research Rotations (1)

Incorporates the research rotations to be completed before assignment to a dissertation or thesis laboratory.

## INTERNATIONAL DENTIST PROGRAM—CLINICS

#### IDPC 815 Clinical Orientation Seminar (2)

Preclinical training in data management covering both general dentistry, with emphasis on periodontal data.

#### IDPC 825 General Clinics (8)

Includes urgent care, service learning, and screening blocks. Repeated registrations required to fulfill the total units.

#### IDPC 835 General Clinics (8-12)

The third and fourth quarters of IDP general clinics. Repeated registrations required to fulfill the total units.

#### IDPC 845 General Clinics (8)

The final two quarters of IDP general clinics. Repeated registrations required to fulfill the total units.

## INTERNATIONAL DENTIST PROGRAM—GENERAL

#### IDPG 700 Review of General Dentistry (8-12)

Remedial course that reviews the basic skills in cavity preparation for alloys and aesthetic restorations, occlusion, and single-casting restorations.

#### IDPG 845 Evidence-Based Dentistry (2, 4)

Scientific methods in dental research. Includes critical evaluation of published articles, research design, statistical analysis, evaluation of results, design of research reports, extensive reviews of various topics. Repeated registrations required to fulfill the total units.

## INTERNATIONAL DENTIST PROGRAM—ORAL PATHOLOGY

#### IDPO 534 Oral Medicine-Orofacial Pain and TMD (2)

Differential diagnosis of orofacial and temporomandibular joint pain, including basic guidelines for initial therapy.

**IDPO 535 Oral Pathology and Diagnosis (3)**

Graduate-level survey of pathology. Developmental, infectious, neoplastic, and metabolic disorders studied relative to their epidemiology, etiology, clinical and/or radiographic and microscopic features, and management. Emphasizes differential diagnosis of dental, oral mucosal and soft-tissue, jaw, salivary gland, skin, and neck diseases.

**IDPO 725 Patient Assessment and Data Management (2)**

Introduces physical evaluation, data collection, and the problem-oriented dental record. Supervised clinical experience with fellow students as 'patients.' Student develops a treatment plan and presents it to the patient. Continued computer-based treatment plan management.

**IDPO 726 Patient Diagnosis and Treatment Planning (2)**

Student develops a treatment plan and presents it to the patient. Case-based, small-group treatment-planning exercises. Introduces computer-based treatment-plan management.

**IDPO 727 Intermediate Treatment Planning Seminar (1)**

Students select cases from patients being treated and present patients' health history, existing conditions, radiographs, study models, and chief complaint. Instructor-guided discussion of treatment alternatives, with student-formulated diagnosis, treatment, and sequence of treatment decisions.

**IDPO 826 Oral and Maxillofacial Surgery (2)**

Reviews oral and maxillofacial surgery—including preprosthetic surgery, dental alveolar surgery, implant surgery, oral trauma, maxillofacial trauma, and preoperative infections. Reviews medications in the treatment of dentally related diseases and their potential interaction with total patient care.

**IDPO 827 Oral and Maxillofacial Surgery (2)**

Sequential course following IDPO 826. Reviews oral and maxillofacial surgery—including preprosthetic surgery, dental alveolar surgery, implant surgery, oral

trauma, maxillofacial trauma, and preoperative infections. Reviews medications in the treatment of dentally related diseases and their potential interaction with total patient care. Emphasizes local anesthesia and nitrous oxide theory and technique. Includes clinical partner practice in local anesthesia and nitrous oxide.

Prerequisite: IDPO 826.

## **INTERNATIONAL DENTIST PROGRAM—PERIODONTICS AND PEDIATRIC DENTISTRY**

**IDPP 754 Clinical Periodontics (2)**

Overview of clinical periodontics—including etiology of periodontal disease, oral hygiene instruction, scaling, root planing, antimicrobial therapy, and a variety of surgical concepts and techniques. Includes anticipated results of therapy, including options of surgical versus nonsurgical approaches.

Prerequisite: IDPG 750.

**IDPP 755 Pediatric Dentistry Clinic—IDP (1)**

Dental care of children in their primary, fixed, and young permanent dentition. Etiology of disease, prevention of oral disease, growth-and-development analysis, treatment planning, restorative procedures, and arch length control.

**IDPP 756 Pediatric Dentistry (2)**

Dental disease prevention (oral hygiene, diet, fluoride, pit and fissure sealants). Behavior management of the child dental patient. Diagnosis, treatment planning, and operative dentistry for children. Pediatric pulp therapy, dental arch-length management, local anesthesia and sedation for children. Medical aspects of pediatric dentistry.

**IDPP 756L Pediatric Dentistry Laboratory (1)**

Technique course that accompanies IDPP 756. Student performs operative procedures for amalgam and composite resin on simulated primary and young permanent teeth. Student performs pulpotomies on primary molar teeth and prepares primary teeth for stainless steel, open-faced stainless steel, and resin crowns. Fabricates unilateral and bilateral space maintainers.

### IDPP 759 Special Topics in Periodontal Therapy (2)

Variation in periodontal diseases related to differing host conditions, including: age, hormones, habits, drugs, genetics, nutrition, stress, systemic disease, iatrogenic factors, trauma from occlusion, and endodontic interrelationships. Overview of surgical periodontal procedures and their roles, limitations, and effects. Surgery outcomes compared with short- and long-range effects of conservative therapy (with and without maintenance care, including effect of adjunctive chemical plaque control). Role of dental health care providers in periodontal therapy. Special problems in periodontal care.

## INTERNATIONAL DENTIST PROGRAM—RESTORATIVE

### IDPR 701 Operative Dentistry I (2)

Reviews the basic principles and techniques used in cavity preparation and restoration of teeth with silver alloy. Lecture and laboratory course.

### IDPR 702 Operative Dentistry II (2)

Reviews basic principles and techniques of cavity preparation and restoration of teeth with aesthetic restorative materials. Studies the source, use, and manipulation of dental materials and their physical properties relative to dentistry. Lecture and laboratory course.

### IDPR 703 Partial Coverage Castings (2)

Lecture, discussion, and practice in designing and preparing MOD, 3/4 and 7/8 gold castings. Emphasizes development of high-level hand and technical skills for complex preparations.

### IDPR 704 Introduction to Occlusion (2)

Studies the temporomandibular joint, muscles of mastication, and the teeth in static and dynamic positions.

### IDPR 761 Removable Prosthodontics I (2)

Reviews the basic clinical and laboratory removable prosthodontic procedures involved in the fabrication of

removable partial dentures, maxillary immediate complete dentures, and interim removable partial dentures.

### IDPR 762 Removable Prosthodontics II (2)

Reviews the laboratory phases of diagnosing, planning treatment for, and treating an edentulous patient. Lecture and laboratory course.

### IDPR 763 Removable Prosthodontics III (2)

Biomechanics of removable partial dentures and their design and fabrication. Diagnosis and treatment planning for removable partial dentures. Clinical and laboratory procedures and sequencing of treatment for removable partial and complete dentures. Lecture and laboratory course.

### IDPR 771 Fixed Prosthodontics I (2)

Reviews basic tooth preparation for single-casting restorations, including porcelain fused to metal; tissue management, impression techniques, and temporary restorations. Lecture and laboratory course.

### IDPR 772 Fixed Prosthodontics II (2)

Reviews the basic design and fabrication of porcelain-fused-to-metal restorations; tissue management, impression techniques, and temporary restorations—including single units and fixed partial dentures. Lecture and laboratory course.

### IDPR 773 Intermediate Prosthodontic Seminar (1)

Discusses concepts in occlusion—including anterior guidance, centric relation determinators, and split cast occlusal analysis. Hands-on construction, decision making, and critical thinking in the use of anterior deprogrammers and splints.

### IDPR 801 Fixed Prosthodontics III (2)

Introduces advanced techniques for fixed prosthodontics, treatment planning, and repair of prosthetic failures. Techniques in evaluating and treating occlusal schemes with reversible procedures. Lecture and laboratory course.

**IDPR 803 Operative Dentistry III (2)**

Indications, preparations, and placement of the direct and indirect veneer, atypical cast gold, posterior, partial-coverage porcelain restorations, and WREB-type restorations. Lecture and laboratory course.

**IDPR 854 Implant Dentistry for the IDP Student (3)**

Scientific and technical foundation for implant surgery and expansion of basic implant procedures. Postplacement care, long-term maintenance, and clinical complications associated with dental implants. Emphasizes restoration of single implants, multiple quadrant posterior implants, and over-denture implants. Lecture and laboratory course.

**IMPLANT DENTISTRY****IMPD 505 Patient Presentation Seminar (1)**

Presents implant patient treatment, discusses alternate methods of rehabilitation and related literature. Repeated registrations required to fulfill the total units.

**IMPD 533 Applied Radiology for Implant Dentistry (1.5)**

Gives the postdoctoral student fundamental aspects of radiology imaging as part of the diagnosis and treatment.

**IMPD 547 Implant Dentistry Grand Rounds (1)**

Weekly review of surgeries scheduled for the upcoming week in order to facilitate successful outcomes. Includes analysis of challenges, latest recommendations, techniques for minimizing postoperative side effects, and implementation of strategic surgical procedures.

**IMPD 561 Dental Bioengineering (2)**

Studies the structures and properties of dental implant materials and implant prosthodontic superstructures.

**IMPD 585 Implant Prosthodontics (2)**

Gives the graduate student in implant dentistry in-depth didactic and clinical instruction in techniques and

procedures related to the rehabilitation of patients with prosthodontic devices supported by dental implants. Advanced clinical and laboratory procedures, emphasizing implant restorations for completely and partially edentulous patients. Emphasizes attachments and superstructure design. Repeated registrations required to fulfill the total units.

**IMPD 601 Literature Review in Implant Dentistry (2)**

Reviews historical and/or fundamental implant dentistry literature. Repeated registrations required to fulfill the total units

**IMPD 604 Current Literature Review in Implant Dentistry (2)**

Gives the postdoctoral students in implant dentistry a deeper understanding of the research and literature currently available. Repeated registrations required to fulfill the total units.

**IMPD 611 Introduction to Implant Dentistry (2)**

Overview of the clinical science of implant dentistry, including etiology, therapy, clinical methods, and record keeping.

**IMPD 612 Advanced Implant Dentistry (2)**

Provides postdoctoral students with the knowledge and techniques of advanced prosthodontic and implant procedures—notably those involved in sinus graft surgery, surgical repairs of implant defects, and the principles involved in immediate loading of implants.

**IMPD 631 Oral Implant Surgery (1)**

Instruction in basic and advanced implant surgery principles. Repeated registrations required to fulfill the total units.

**IMPD 634 Diagnosis and Treatment Planning in Implant Dentistry (1)**

Didactic and clinical aspects of diagnosis and treatment planning for patients with complex dental problems. Repeated registrations required to fulfill the total units.

**IMPD 637 Peri-Implant Histopathology (1)**

Gives the postdoctoral student in implant dentistry a better understanding of the implant interface and biological changes that take place in the tissues surrounding dental implants following their placement.

**IMPD 654 Practice Teaching in Implant Dentistry (1-3)**

Teaching experience in implant prosthodontics and implant surgery.

**IMPD 696 Scholarly Activity in Implant Dentistry (1)**

Selected didactic, clinical, and/or laboratory activity developed by the program director or a designated program faculty member. Primarily designed for students to fulfill the certificate requirements for scholarly activity/research in implant dentistry. Multiple registrations may be needed to complete these activities.

**IMPD 697A Research (1)**

Student identifies a research project, prepares a proposal, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities. This is a required course for the Master of Science (M.S.) and Master of Science in Dentistry (M.S.D.) degree tracks.

**IMPD 697B Research (1, 2)**

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

**IMPD 698 Thesis (1-8)****IMPD 725 Clinical Practice in Implant Dentistry (4)**

Experience in the clinical diagnosis and treatment of patients who may benefit from implant dentistry therapy. Repeated registrations required to fulfill total clock hours. A minimum of 120 clock hours per quarter. Repeated registrations required to fulfill total units.

**IMPD 726 Clinical Practice in Periodontics in Implant Dentistry (2)**

Clinical experience in the diagnosis and treatment of periodontal diseases. Repeated registrations required to fulfill total units. A minimum of sixty clock hours per quarter. Repeated registrations required to fulfill total units.

**IMPD 727 Clinical Practice of Prosthodontics in Implant Dentistry (2)**

Advanced clinical practice in the treatment of individuals with fixed, removable, maxillofacial, and implant prostheses. Repeated registrations required to fulfill total units. A minimum of sixty clock hours per quarter. Repeated registrations required to fulfill total units.

**INTERDISCIPLINARY STUDIES****INTD 515 Curriculum Development, Methods of Teaching and Evaluation (3)**

Engages doctoral candidates pursuing careers in academia in the broad questions related to educational philosophy. Reviews the process and content of curriculum innovation, design, development, and implementation, emphasizing the requirements of assuring educational effectiveness. Addresses methods of teaching and of student evaluation appropriate to baccalaureate and graduate education. Limited to students enrolled in a doctoral degree program.

**INTD 588 Integrative Research (3)**

Examines the topic of integrated research, introducing participants to the concepts, concerns, and benefits associated with developing and conducting research across multiple disciplines. Includes practical development of multidisciplinary research projects focused on the concepts of global health, environmental conservation, and community development through work with communities in Honduras. Facilitates course objectives through invited seminar speakers, discussion, and reading. Includes a reconnaissance team to Honduras, and textual material to be used as grant proposals for the Integrated Honduras Community Development Projects.

**INTD 715 Doctoral Teaching Assistantship (1)**

Required for doctoral candidates awarded a doctoral teaching assistantship. Provides structured supervision of candidates' teaching experiences. Gives attention to integrating excellence in teaching methods and evaluation. Addresses maintenance of a classroom environment conducive to learning.

**MEDICINE—CONJOINT****MDCJ 501 Introduction to Medicine (2)**

Taught by the Department of Medicine and the Faculty of Religion for students in the Early-Decision Program. Helps students develop the writing and reading skills essential to perform medical duties, and helps students develop the whole person care focus necessary for success as physicians.

**MDCJ 502 Introduction to Medicine II (2)**

Taught by the Departments of Biochemistry, Medicine, Pathology (Division of Human Anatomy), and Surgery; and the Faculty of Religion for students in the Early-Decision Program. Helps students develop skills in problem-based learning and standardized patient assessment, as well as whole person care, which are skills necessary for success as a physician.

**MDCJ 504 Cell Structure and Function (2)**

A fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

**MDCJ 505 Cell Structure and Function (3)**

A fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

**MDCJ 506 Cell Structure and Function (2)**

A fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

**MDCJ 507 Cell Structure and Function (2)**

A fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

**MDCJ 514 Immunology (2.5)**

Medical immunology, emphasizing the cellular, humoral, and molecular components of the immune system. Immune responses associated with host defense and disease processes. Immunologic techniques related to the practice of other basic and clinical sciences.

**MDCJ 515 Medical Biochemistry, Molecular Biology, and Genetics (1)**

Foundation courses [515, 516, 517, 518 sequence]—in conjunction with MDCJ 553, 556—for study of normal biology in the first-year curriculum. Comprehensive sequence in biochemistry and molecular biology establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells.

**MDCJ 516 Medical Biochemistry, Molecular Biology, and Genetics (2)**

Foundation courses [515, 516, 517 sequence]—in conjunction with MDCJ 553, 556—for study of normal biology in the first-year curriculum. Comprehensive sequence in biochemistry and molecular biology

establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells.

#### MDCJ 517 Medical Biochemistry, Molecular Biology, and Genetics (1)

Foundation courses [515, 516, 517 sequence]—in conjunction with MDCJ 553, 556—for study of normal biology in the first-year curriculum. Comprehensive sequence in biochemistry and molecular biology establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells.

#### MDCJ 518 Medical Biochemistry, Molecular Biology, and Genetics (2)

Foundation courses [515, 516, 517 sequence]—in conjunction with MDCJ 553, 556—for study of normal biology in the first-year curriculum. Comprehensive sequence in biochemistry and molecular biology establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells.

#### MDCJ 524 Pathophysiology and Applied Physical Diagnosis (1, 5)

Two parallel components bridging the preclinical curriculum to the clinical curriculum: (1) pathophysiology lectures that build upon the courses in organ pathology and physiology, introduce students to the pathophysiologic principles underlying mechanisms of disease, and emphasize the application of pathophysiologic principles to a variety of new situations that require problem solving and synthesis in a clinical context; and (2) practical experience that develops and applies skills that build on the first-year sequence in physical diagnosis.

#### MDCJ 525 Pathophysiology and Applied Physical Diagnosis (4)

Two parallel components that bridge the preclinical curriculum to the clinical curriculum: (1) Pathophysiology lectures build upon the courses in organ pathology and physiology, introduce students to the pathophysiologic principles underlying mechanisms of disease, and emphasize the application of these principles to a variety of new situations that require problem solving and synthesis in a clinical context. (2) Practical experience develops and applies skills that build on the first-year sequence in physical diagnosis.

#### MDCJ 526 Pathophysiology and Applied Physical Diagnosis (2)

Two parallel components that bridge the preclinical curriculum to the clinical curriculum: (1) Pathophysiology lectures build upon the courses in organ pathology and physiology, introduce students to the pathophysiologic principles underlying mechanisms of disease, and emphasize the application of these principles to a variety of new situations that require problem solving and synthesis in a clinical context. (2) Practical experience develops and applies skills that build on the first-year sequence in physical diagnosis.

#### MDCJ 535 Medical Biochemistry, Molecular Biology, and Genetics (1, 2)

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate). Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

#### MDCJ 536 Medical Biochemistry, Molecular Biology, and Genetics (1)

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a

biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate).

#### MDCJ 537 Medical Biochemistry, Molecular Biology, and Genetics (2)

Comprehensive sequence in biochemistry and molecular biology that establishes the biochemical basis for cell structure, emphasizes an integrated approach to the understanding of cellular metabolism, provides a biochemical/genetic/molecular basis for understanding disease, and examines the mechanisms for genetic information flow in prokaryotic and eukaryotic cells. Sequence restricted to Biomedical Science Program (certificate).

#### MDCJ 543 Medical Neuroscience (2.5)

Fundamentals of neuroanatomy and neurophysiology integrated in a clinical context with principles of the human nervous system.

#### MDCJ 544 Medical Neuroscience (1)

Fundamentals of neuroanatomy and neurophysiology integrated in a clinical context with principles of the human nervous system.

#### MDCJ 553 Cell Structure and Function (2)

Fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

#### MDCJ 554 Cell Structure and Function (3)

Fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students

with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

#### MDCJ 555 Cell Structure and Function (2)

Fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal and, to a lesser extent, abnormal environments.

#### MDCJ 556 Cell Structure and Function (1.5)

Fully integrated, comprehensive course that develops knowledge and skills relating normal microscopic and submicroscopic anatomy to cellular biology, cellular physiology, and immunology. General pathology, the common thread for the course, familiarizes students with morphologic and functional changes affecting cells exposed to a variety of normal, and to a lesser extent, abnormal environments.

#### MDCJ 561 Physical Diagnosis (1)

Provides a core foundation of knowledge, skills, values, and attitudes necessary for effective physician-patient communication and physical examination.

#### MDCJ 562 Physical Diagnosis (2)

Provides a core foundation of knowledge, skills, values, and attitudes necessary for effective physician-patient communication and physical examination.

#### MDCJ 563 Physical Diagnosis (3)

Provides a core foundation of knowledge, skills, values, and attitudes necessary for effective physician-patient communication and physical examination.

#### MDCJ 564 Physical Diagnosis (1)

Provides a core foundation of knowledge, skills, values, and attitudes necessary for effective physician-patient communication and physical examination.

### MDCJ 566 Evidence-Based Medicine and Information Sciences (1)

Introduces freshman medical students to basic concepts of evidence-based medicine and helps facilitate lifelong self-directed learning. Describes the challenges of the information needs of the twenty-first century physician. Teaches a process by which students can efficiently and effectively acquire the answers to their clinical questions and apply them to the care of the patients they see. Teaching methodologies include large-group didactic presentations, small-group discussions, and self-study online exercises. Sets the foundation for a lifelong learning process in which all physicians will engage.

### MDCJ 567 Evidence-Based Medicine and Information Sciences (1)

Introduces first-year medical students to basic concepts of evidence-based medicine and helps facilitate lifelong self-directed learning. Describes the challenges of the information needs of the twenty-first century physician. Teaches a process by which students can efficiently and effectively acquire the answers to their clinical questions and apply them to the care of the patients they see. Teaching methodologies include large-group didactic presentations, small-group discussions, and self-study online exercises. Sets the foundation for a lifelong learning process in which all physicians will engage.

### MDCJ 568 Evidence-Based Medicine and Information Sciences (1)

Designed for first-year medical students. Introduces basic concepts of evidence-based medicine to help facilitate lifelong self-directed learning. Describes the challenges of the information needs of the twenty-first century physician. Teaches a process by which students can efficiently and effectively acquire the answers to their clinical questions and apply them to the care of the patients they see. Includes large-group didactic presentations, small-group discussions, and self-study online exercises. Lays the foundation for an ongoing lifelong learning process in which all physicians will engage.

### MDCJ 569 Evidence-Based Medicine and Information Sciences (1)

Designed for first year medical students. Introduces basic concepts of evidence-based medicine to help facilitate lifelong self-directed learning. Describes the challenges of the information needs of the twenty-first century physician. Teaches a process by which students can efficiently and effectively acquire the answers to their clinical questions and apply them to the care of the patients they see. Includes large-group didactic presentations, small-group discussions, and self-study online exercises. Lays the foundation for an ongoing lifelong learning process in which all physicians will engage.

### MDCJ 571 Diseases of Neuroscience (1)

A multidisciplinary course that develops a foundation in neuropathology, neuropathophysiology, and neuropharmacology necessary for a successful transition into clinical neurology.

### MDCJ 572 Diseases of Neuroscience II (2.5)

A multidisciplinary course that develops a foundation in neuropathology, neuropathophysiology, and neuropharmacology necessary for a successful transition into clinical neurology.

### MDCJ 599 Medicine Conjoint Directed Study (1-6)

### MDCJ 821 Preventive and Community Medicine (1.5-6)

Interdisciplinary, four-week rotation broadens exposure to community-based health care done mainly in primary care clinics. Clinical experience in areas not otherwise covered in the curriculum: dermatology and STDs, clinical preventive medicine, and integrative/whole person care in ambulatory and managed care settings.

### MDCJ 891 Whole Person Care (1.5-12)

Student works with Loma Linda Family Practice faculty to provide both inpatient and outpatient care.

## MEDICINE

### MEDN 599 Medicine Directed Study (1.5-18)

### MEDN 701 Medicine Clerkship (1.5-15)

A ten-week internal medicine third-year rotation that focuses on developing the knowledge, skills, and attitudes necessary to care for adult patients. Two three-week blocks of inpatient experience and three weeks of exposure in the outpatient setting or consult service, plus an additional week spent in comprehensive testing. At midrotation, student meets with the clerkships director to discuss the student's progress to that point, including a faculty member's observation of and feedback on student's clinical skills relevant to a formative session with a standardized patient.

### MEDN 821 Medicine Subinternship (1.5-6)

Medicine subinterns work under direct supervision of second- and third-year medicine residents. In cooperation with the first-year medicine resident, each subintern follows assigned patients from admission to discharge (seven-to-eight patients on wards; four or five patients on intensive care units). The attending physician is ultimately responsible for assuring appropriate patient care and will authenticate the subintern's work.

### MEDN 822 Medicine Intensive Care (1.5-6)

MICU subinterns work under direct supervision of second- and third-year medicine residents on the service. Supervising resident assigns newly admitted patients to the subintern, who will be responsible for performing and recording a complete history and physical examination on the patient's chart in a timely manner. The attending physician is ultimately responsible for assuring appropriate patient care and will authenticate the subintern's work.

Prerequisite: MEDN 701.

### MEDN 891 Medicine Elective (1.5-18)

## MARRIAGE AND FAMILY

### MFAM 416 Theories of Personality (3)

Covers genetic and environmental factors, such as personality detriments, theories of personality, personality development, structure and assessment of personality, personality dynamics, and the complex process in implementation.

### MFAM 417 Abnormal Behavior (3)

Introduces the psychology of behavioral disorders, with emphasis on etiology and symptomatology. Provides an overview of treatment modalities.

Prerequisite: A course in personality theory; or consent of instructor.

### MFAM 501 Research Tools and Methodology: Quantitative (3)

Current social research methods, practice in the use of techniques, consideration of the philosophy of the scientific method, and familiarization with MFAM test instruments.

Prerequisite: An introductory course in statistics as an undergraduate research methods course.

### MFAM 502 Research Tools and Methodology: Qualitative (3)

Qualitative methodology. Prepares students to undertake research projects using the intensive interview method of qualitative research. Explores practical and epistemological issues and problems in qualitative research in a workshop format.

### MFAM 515 Crisis Intervention and Client Centered Advocacy (3)

Experiential course that includes theory, techniques, and practice of crisis intervention and client-centered advocacy. Gives special attention to development of the basic skills of counseling, including: confidentiality, interprofessional cooperation, working with consumers, professional socialization, and collaboration with resources that deliver quality services and support needed in the community. Presents therapeutic tapes and covers topics such as suicide, substance abuse,

domestic violence, incest, spousal abuse, rape, treating the severely mentally ill, and disaster and trauma response. Examines the principles of mental health recovery-oriented care and methods of service delivery in recovery-oriented practice environments. Cross-listing: COUN 515

#### MFAM 516 Play Therapy (2)

Experiential course that teaches practitioners and graduate students to apply play therapy techniques in dealing with childhood problems such as molestation, physical abuse, depression, trauma, and family conflict.

#### MFAM 517 Culture and Socio-Economic Status in Therapy (3)

Provides the student with general and historical concepts relating to SES, cross-cultural, and multicultural themes. Addresses metanarratives based on culture and SES—which impact the therapist, individuals, couples and families, communication patterns, roles, expectations, and human relationships in general; as well as their impact on family structure, gender relationships, belief systems, rules, and styles of interaction. Examines a wide range of social, racial, and ethnic backgrounds representative of this region. Gives students an opportunity to explore and experience alternative meanings related to SES and cultures from their own historical context, and in the process create space for new understanding. Cross-listing: COUN 517.

#### MFAM 524 Psychopharmacology and Medical Issues (3)

Introduces common physical and medical issues that relate to the practice of marriage and family therapy. Students learn a biopsychosocial-spiritual model to assess and intervene—with emphasis given to psychopharmacology, neuroanatomy, the mind-body relationship, and research relative to the field of medical family therapy.

#### MFAM 525 Therapeutic Group (2)

A process group that provides opportunities for self-exploration, with particular emphasis on personal concerns likely to influence one's ability to function as a professional. Students learn more about their style of

relating to others. Helps trainees identify potential blocks to their effectiveness as counselors and provides the tools to develop strengths.

#### MFAM 526 Theory and Practice of Group Counseling (3)

Critically evaluates ten major models of group counseling, as well as overviews stages in the development of a group. Uses didactic and experiential methods to apply diverse theories and techniques to actual group sessions. Theories explored include psychodynamic approaches, existential/humanistic and relationship-oriented approaches, psychodrama, and action-oriented approaches.

#### MFAM 527 Training/Supervision Workshop in Group Counseling (3)

Opportunities for supervised practice in cofacilitation of the classroom group. Students function in the role of group members and also co-lead the group several times during the quarter. An experiential course that studies group process in action and teaches ways to apply diverse techniques to an ongoing group.

#### MFAM 528 Culture, Socioeconomic Status, and Therapy (3)

Addresses current information and historical narratives related to cultural diversity that impact belief systems, communication patterns, roles, and expectations within human relationships and systems. Examines SES and a wide range of social, racial, and ethnic factors that create meanings for individuals, couples, families, and mental health counselors. Emphasizes populations that become professional partners or clients served within this geographic region. Cross-listing COUN 528.

#### MFAM 535 Case Presentation and Professional Studies (4)

Introduces the principles of mental health recovery-oriented care and encourages students to develop the personal qualities related to practices within this type of health care system. Students explore their personal biases toward and understanding of various cultures/ethnicities, as well as how poverty and social stress impact their understanding of consumers in the mental

health system. Reviews marriage and family therapy ethics according to the Board of Behavioral Science, the American Counseling Association, and the American Association of Marriage and Family Therapists. Examines how spirituality is a process important to the field. Explores the interface between MFTs, counselors, and other professionals.

#### MFAM 536 Case Presentation Seminar and Documentaion (3)

Teaches student trainees applied psychotherapeutic techniques, assessment, diagnosis, prognosis, and treatment of premarital, couple, family, aging population, the severely mentally ill, and child relationships; examines dysfunctional and functional aspects, including recovery process, health promotion, evaluation from a systems perspective, and illness prevention. Trains students, through observation of live cases, to examine the cultural, social, and psychological implications of consumer's socioeconomic position, legal and ethical issues, biological implications, and how to collaborate with other mental health resources in order to advocate for the severely mentally ill population. Documents cases from a public mental health, systems, and medical model perspective.

#### MFAM 537 Case Presentation Seminar (3)

Formally presents ongoing individual, marital, and family cases by clinical trainees. Taping, video playbacks, and verbatim reports with faculty and clinical peers. Examines and trains in applied psychotherapeutic techniques, assessment, diagnosis, prognosis, and treatment of premarital, couple, family, and child relationships; examines dysfunctional and functional aspects, including health promotion and illness prevention. Limited to students in clinical training.

#### MFAM 538 Theory and Practice of Conflict Resolution (2)

Overviews the field of conflict management and resolution. Basic theories and methodologies in the field, with opportunity to develop basic clinical mediation skills.

#### MFAM 539 Solution-Focused Family Therapy (2)

Provides an in-depth understanding of solution-focused family therapy and practice. Focuses on the work of de Shazer and Berg, along with the foundational constructs of MRI.

#### MFAM 544 Family and Divorce Mediation (4)

Comprehensive coverage of concepts, methods, and skills in family and divorce mediation. Includes the relational and legal aspects of property division and child custody. Substantial experience in role plays.

#### MFAM 545 Gender Perspectives (2)

Explores the identities, roles, and relationships of women and men in light of social, cultural, and historical perspectives. Explores implications for the family therapist.

#### MFAM 546 Brain and Behavior (3)

Provides general background information in neuroanatomy, neurochemistry, neurophysiology, and psychopharmacology; and expands the student's understanding of basic physiological mechanisms and how they influence behavior. Studies physiological mechanisms, including: nerve cells and neural transmission, the central and peripheral nervous systems, the peripheral neuromuscular system, the sensory systems, and the endocrine system. Examines behaviors influenced by these systems including: addictions, emotional behavior, human communication, ingestive behavior, learning and memory, mental disorders, movement, perceptual processes, reproductive behavior, and sleep. Introduces special topics, including: neuropsychology and neuropsychological assessment, the effects of traumatic brain injury on cognition and behavior, and therapy with brain-injured clients. Gives student general information on methods and strategies of research in the field of brain and behavior.

#### MFAM 547 Social Ecology of Individual and Family Development (3)

Studies human individual development and its relationship to the family life cycle from birth through aging and death of family members. Discusses biological, psychological, social, and spiritual

development in the context of family dynamics involving traditional two-parent families, alternative partnerships, single parents, blended families, and intergenerational communities.

#### MFAM 548 Men and Families (2)

Surveys the experience of contemporary men in American and global contexts. Examines the reciprocal influences of society, men, and their families in the contexts of close relationships—including friendships, marriages, parenting, and therapeutic relationships.

#### MFAM 549 Christian Counseling and Family Therapy (2)

Integrates Christian concepts and family therapy in a conceptual and clinical context.

#### MFAM 551 Family Therapy: Foundational Theories and Practice (3)

Provides an overview of the major theories in marriage and family therapy. Explores systems theory concepts in light of the major models of family therapy. Exposes students to the recovery process and consumer advocacy. Examines evidence-based models—such as cognitive behavioral, multidimensional family therapy (MDFT), and emotional-focused therapy. Through MDFT, exposes students to the treatment of addicted adolescents and their families.

#### MFAM 552 Couples Therapy: Theory and Practice (3)

Overview of the couples/marital therapy literature—including divorce, child rearing, parenting, step parenting, and blended families. Evidence-based practices studied relevant to consumer treatment and recovery. Examines how culture, SES, poverty, social, stress and addiction affect clinical practice.

#### MFAM 553 Family Systems Theory (3)

Reviews Bowen theory of family systems. Introduction to family psychotherapy as an outgrowth of the theory. Students examine their own families of origin.

#### MFAM 555 Narrative Family Therapy (2)

Narrative therapy and social construction as important developments in social theory and in clinical practice. Uses narratives and the role they play in a person's life through language and meaning systems. Examines issues of power, collaboration, culture, community, and re-authoring narratives, particularly in the works of Michael White and David Epston.

#### MFAM 556 Psychopathology and Diagnostic Procedures (3)

Explores the history and development of psychopathology and how it relates to current clinical practice in general and marriage and family therapy in particular. Utilizes the multi-axial classifications of the DSM-IV as a practical basis for diagnostics.

Prerequisite: A course in abnormal psychology.

#### MFAM 557 Object Relations Family Therapy (2)

Seminar format that acquaints students in marriage and family therapy with the basics of object relations theory. Emphasizes the unique properties of object relations-systems theory in bridging intrapsychic and environmental forces.

#### MFAM 558 Advanced Human Growth and Development (3)

#### MFAM 559 Cognitive-Behavioral Couples Therapy (2, 3)

Experiential course that surveys major cognitive-behavioral family therapy therapists, and integrates treatment techniques into practice in laboratory.

#### MFAM 564 Family Therapy: Advanced Foundational Theories and Practice (3)

Comprehensively surveys more recent therapy models, such as narrative, collaborative language systems, and solution-focused theory. Using these models, student learns to assess and consider diagnosis; as well as learn the role of language, meaning, and process in relationships. Class examines the theoretical strengths and limitations of these models in relation to culturally diverse populations.

**MFAM 565 Advanced Bowen Theory and Practice (2)**

Provides advanced knowledge and training in Bowen theory as it applies to couples and family therapy.

Prerequisite: MFAM 553.

**MFAM 566 Psychopathology and Diagnostic Procedures: Personality (2)**

Focuses on the etiology of marital dysfunction, specifically from a dual function of individual and systems psychopathology.

Prerequisite: MFAM 556.

**MFAM 567 Treating the Severely and Persistently Mentally Ill and The Recovery Process (3)**

Identification, treatment, and referral procedures for consumers identified as severely mentally ill. Examines the phenomenon as it relates to a diverse consumer population (culture, age, gender, and SES). Treatment section focuses on the recovery process and on evidence-based or agreed-upon approaches in the mental health field, particularly the marriage and family therapy field. Includes principles of etiology, diagnosis, treatment planning, and prevention of mental and emotional disorders and dysfunctional behavior.

**MFAM 568 Groups: Process, and Practice (3)**

Surveys major theoretical approaches, including individual theories, marital groups, network, and family therapy groups. Group laboratory experience provided wherein students apply theory to practice and develop group leadership skills.

**MFAM 569 Advanced Group Therapy (2)**

Provides advanced knowledge and training in leading structured groups. Based on a therapeutic, psychoeducational, and/or educational model, students design a structured group treatment to be used in a community setting.

Prerequisite: MFAM 568.

**MFAM 574 Family Therapy: Theory and Practice (4)**

Covers the basic epistemological principles defining family systems practice; major family therapy models; and unique values, ethics, and professional issues associated with systems/relational practice. Course may be used by MFT majors for elective credit.

**MFAM 584 Advanced Child and Adolescent Problems (3)**

Psychodynamics involved in child and adolescent problems with respect to the family relationship. Demonstrates a variety of counseling approaches to the treatment of children and adolescents, with emphasis on diverse settings (e.g., education, hospital, and agency)

**MFAM 585 Internship in Family Mediation (1-4)**

Internship includes 50 hours of observation in the court room, 100 client-contact hours of mediation experience, twenty cases of mediation experience, and six mediation case studies.

**MFAM 604 Social Context in Clinical Practice: Gender, Class and Race (3)**

Introduces social inequalities that result in unfairness, health disparities, assaults to personal dignity, and family stress. Focuses on how one's position within social hierarchies—such as gender, socioeconomic status, race, and sexual orientation—affects psychological and relational health. Students learn how family therapists and counselors address these social contextual factors as part of a recovery-based approach that empowers people within their relationships and social systems. Cross-listing: COUN 604.

**MFAM 605 Gestalt Family Therapy (2)**

Principles of Gestalt psychology and therapy; the relationship between the individual and the physical, emotional, societal, and spiritual environment. Group experience that permits the spiritual and affective aspects of Gestalt therapy to be expressed and integrated with systems theory.

### MFAM 606 Emotionally Focused Couples Therapy (2)

Students examine the theory of emotionally focused therapy and concentrate on the work and research of Susan Johnson

### MFAM 614 Law and Ethics (3)

Examines laws pertaining to the family: child welfare, separation, divorce, and financial aspects of family maintenance. Case management, referral procedures, professional and client interaction, ethical practices (AAMFT, ACA, BBS), ethical relations with other professions, legal responsibilities, abilities, and confidentiality. Current legal patterns and trends in the mental health profession. Exploration between the practitioner's sense of self and human values and his/her professional behavior, scope of practice, and ethics. Course assists students to examine how culture, SES, poverty, social stress, and biology impact consumer's recovery process. Cross-listing: COUN 614.

### MFAM 615 Reflective Practice (2)

Develops narrative-therapy ideas and emphasizes a reflective process in both therapy and research. Focuses on developing the student's skills as an active agent in therapy and research.

Prerequisite: MFAM 555.

### MFAM 616 Cognitive Assessment (4)

Reviews major psychometric instruments in the area of intelligence; verbal and nonverbal skills; academic, motoric, and adaptive behavior skills. Supervised administration, scoring, and report preparation.

### MFAM 617 Personality and Behavior Testing (4)

Introduces administration and interpretation of standard nonprojective instruments and personality/behavior inventories that function primarily in the assessment of children and adolescents. Offers some application to adults but focuses primarily on testing minors. In addition to scoring and evaluation of test protocols, facilitates the writing of an integrated clinical report based on instruments designed to measure personality or behavioral components of the person's functioning. Initial practice on all the instruments considered part of the laboratory component of the

course. Students expected to have field activity where, at a clinical site, they complete a test protocol on identified subjects. Requires further supervision in the administration, scoring, and interpretation of these instruments for chartering as a psychologist in Alberta. Course meets the instructional requirements for personality and behavioral assessment of individuals.

### MFAM 624 Individual and Systems Assessment (3)

Applies psychological testing methods in the diagnostic assessment of individual, family, and group behavioral dynamics as encountered in marriage and family counseling. Observations and/or laboratory experience.

### MFAM 635 Case Presentation Seminar (2)

Clinical trainees normally present ongoing individual, marital, and family cases. Requires completion of an epistemology paper that demonstrates a systems approach. Students' presentations must demonstrate an understanding of legal, ethical, cultural, SES, spiritual, and developmental issues. Students required to discuss how their cases support consumer advocacy, as well as collaboration with other mental health practitioners. Examines the recovery process in relation to selected epistemology. Limited to students enrolled in clinical training. Students receive an IP while case criteria are being met.

### MFAM 636 Case Presentation Seminar (2)

Examines the recovery process in relation to case write-ups. Clinical trainees formally present ongoing individual, marital, and family cases—discussing how cases support consumer advocacy, as well as collaboration with other mental health practitioners. Requires an in-depth case write-up on a couple or family that demonstrates an understanding of legal, ethical, cultural, SES, spiritual, and developmental issues. Students rehearse their final oral case in group. Limited to students enrolled in clinical training. Students receive an IP grade until case criteria met.

### MFAM 637 Case Presentation Seminar (2)

Student presents a final clinical case to a panel. Selected couple/family case required to be relational

and demonstrate selected core competencies supported by the American Association for Marriage and Family Therapy (AAMFT). Students provide videotapes of a couple/family case, an epistemology paper, a case write-up; and discuss a case vignette before a panel of three MFT clinical experts. Final case presentation demonstrates an understanding of legal, ethical, cultural, SES, spiritual, the recovery process, and developmental issues. Requires trainees to discuss how their relational case supports consumer advocacy, as well as collaboration with other mental health practitioners.

#### MFAM 638 Family Therapy and Chemical Abuse (3)

Examines current theories of etiology of substance use disorders and the effects of psychoactive drug use. Emphasizes assessment and evaluation strategies; impact on mental, biological, relational, and community systems; evidence-based prevention and treatment approaches within a recovery process orientation. Explores issues of regional multicultural competence, human diversity, and access to care.

#### MFAM 639 Interdisciplinary Professional Seminar (1)

Designed from different mental health disciplines to orient the student to the arena of professional issues regarding family counseling.

#### MFAM 644 Child Abuse and Family Violence (3)

Definition and incidence of physical and emotional abuse, neglect, sexual molestation, dynamics of family violence; offender and nonoffender characteristics. Treatment of children, adolescents, the family and adults abused as children. Treatment modalities, including individual, group, and family therapy. Ethical and legal issues, community resources, multidisciplinary approach to child abuse, assessment, interview techniques, and confidentiality. Examines how cultural, SES, poverty and/or social stress impacts a family's mental health and recovery. Minimum of thirty contact hours. Cross-listing: COUN 644.

#### MFAM 645 Advanced Substance Abuse-Treatment Strategies (3)

Presents information about addictions treatment for adults, adolescents, families, groups, and those with multiple diagnoses.

Prerequisite: MFAM 638.

#### MFAM 651 AAMFT-Approved Supervisor Training (3)

Postgraduate: The didactic component requirement for AAMFT-approved supervisor designation.

#### MFAM 658 Reality Theory and Family Therapy (2)

A clinically oriented seminar where students learn the theory of reality therapy and how to integrate it into the practice of marriage and family therapy. Emphasizes practice and therapeutic skills in using reality therapy with clients.

#### MFAM 659 Current Trends (2)

Acquaints students with the field of health care management by analyzing the important areas about which the manager should be concerned. In addition to the basic functions of health care manager—planning, organizing, directing, and controlling—emphasizes growing concerns regarding external environmental changes, rising health care costs, emergence of new types of health care providers, medical and legal issues, and quality assurance.

#### MFAM 664 Experiential Family Therapy (2)

Examines various experiential family theories. Laboratory experience included.

#### MFAM 665 Structural and Multidimensional Family Therapy (2)

Enhances observational, conceptual, planning, and intervention skills. Increases ability to understand verbal and nonverbal communication and evidence-based family therapies. Broadens understanding of structural and multidimensional family therapy.

**MFAM 670 Seminar in Sex Therapy (2)**

Discusses major male and female sexual dysfunctions. Therapeutic processes of treatment.

Prerequisite: MFAM 674.

**MFAM 674 Human Sexual Behavior (3)**

Sexuality in contemporary society from the sociopsychological viewpoint. Anatomy and physiology of human sexuality: reproduction, normal and abnormal sexual response, psychosexual development, human fertility, human sexual dysfunction. Integration of systems theory. A minimum of thirty contact hours.

**MFAM 675 Clinical Problems in Marriage and Family Therapy (1, 2)**

Sexuality in contemporary society from the sociopsychological viewpoint. Anatomy and physiology of human sexuality: reproduction, normal and abnormal sexual response, psychosexual development, human fertility, human sexual dysfunction. Integrates systems theory. A minimum of thirty contact hours.

**MFAM 679 Universal Psychiatric Care (1, 2)**

Provides opportunity to participate in an international institute featuring world leaders in psychiatric care. Topics include: world diagnostic guidelines, psychotropic medications and issues in treating ethnic populations, spirituality and psychiatry, transpersonal psychiatry in theory and practice, multidisciplinary teams in the practice of mental health services, and problems of mental health in immigrant populations. Students registering for 1 unit participate in ten hours of lecture, including a pre- and postsession. Those taking 2 units also develop a major paper on one of the institute topics.

**MFAM 694 Directed Study: Marriage and Family (1-4)**

Individual study in areas of special interest concerning the family and its problems. May be repeated for credit at the discretion of the faculty.

**MFAM 695 Research Problems: Marriage and Family (1-4)**

Directed research in the student's special field of interest in the family.

Prerequisite: MFAM 501; or concurrent registration with consent of the coordinator.

**MFAM 697 Project (1)**

Student submits a written modality paper and a case description, and makes a videotape presentation of a final case project to a three-member committee selected by the student. Oral response to a case vignette required.

Prerequisite: Advancement to candidacy.

**MFAM 704 Marital and Family Therapy State Board Written Examination Review (2)**

Training for candidates preparing to take the written examination for MFT licensure.

**MFAM 705 Marital and Family Therapy State Board Oral Examination Review (2)**

Provides training to candidates preparing to take the oral examination for MFT licensure.

**MFAM 731 Clinical Training (6)**

For MFT students beginning their clinical training. An IP grade will be assigned until student completes 200 hours at an approved site.

**MFAM 732 Clinical Training (9)**

For students who have completed MFAM 731 and are at an approved clinical site. Students register for 9 units and receive an IP grade until 500 hours or five consecutive quarters have been completed.

**MFAM 734 Professional Clinical Training (1.5, 3)**

Supervised clinical counseling of individuals, couples, families, and children. At least one hour of individual supervision per week and two hours of case presentation seminar per week. Continuous registration for this portion of the clinical training until completion of at least fifty clock hours.

**MFAM 734A Professional Clinical Training (1.5-6)**

Supervised clinical counseling of individuals, couples, families, and children. At least one hour of individual supervision per week and two hours of case-presentation seminar per week. Continuous registration for this portion of the clinical training until completion of at least 300 clock hours.

**MFAM 744 Clinical Internship (1)**

Supervised clinical counseling of individuals, couples, families, and children. One hour of individual supervision per week. Postgraduates only. Approved by internship coordinator.

**MARITAL AND FAMILY THERAPY**

**MFTH 501 Supervision in Marital and Family Therapy (2)**

Studies research and theory regarding the supervision of marriage and family therapy trainees and interns. Can be used toward the requirements for certification as an AAMFT-approved supervisor.

**MFTH 502 Advanced Supervision in Marital and Family Therapy (2)**

Supervised clinical supervision of MFT trainees and interns in a clinical setting. Can be used toward the requirements for certification as an AAMFT-approved supervisor.

**MFTH 504 Advanced Theory in Marital and Family Therapy (4)**

Provides a metaperspective for analysis and development of the systemic-relational theories guiding the practice of marital and family therapy, with special focus on a relational perspective of the "self" and the consequent implications for research and practice. Students learn to contextualize and deconstruct the philosophical, religious, political, sociological, and ecosystemic notions that have influenced the field; to develop skills that will prepare them to contribute to the ongoing critique and development of MFT theory; and to apply theory to research. Emphasizes the ethical and social-contextual aspects of case conceptualization and implications for recovery-based practice.

**MFTH 505 Advanced Family Studies (4)**

A critical survey of the research and theory growing out of the fields of human development and family studies. Provides students with a background on the social and historical factors that form the context in which families are defined and function. Students apply course material to the practice of family life education and family therapy.

**MFTH 506 Clinical 1—Cybernetics (3)**

Explores the philosophical underpinnings of systemic thought and its clinical application to the field of family therapy and the recovery processes in the treatment of mental health issues. Focuses on general systems theory, Gregory Bateson and Palo Alto research group, strategic models of therapy, and the Milan approach, with special attention to the role of recursive epistemology in determining clinical interventions. Ideas critiqued through examination of contextual issues of ethnicity, power, and gender as they relate to the systemic paradigm; and the effects of these issues on family relationships and recovery from mental health symptoms.

**MFTH 507 Clinical 2—Meaning (3)**

Explores postmodern theories and clinical application to the field of family therapy. Focuses on models of therapy influenced by social constructionist thinking, with an emphasis on language and meaning as they relate to a relational understanding of mental health issues. Students learn how to work with presenting issues within a sociocontextual understanding of individual symptoms and relationship concerns. Addresses solution-focused therapy that reflects a paradigm shift from a problem-centered approach to one of resilience. Introduces the narrative metaphor of Michael White and David Epston as a way of facilitating personal empowerment within societal inequities and pathologizing discourses. Concludes with the collaborative language systems approach that emphasizes therapist as partner with clients in developing a resource-based approach to the recovery process.

**MFTH 508 Clinical 3—Natural Systems (3)**

Examines natural systems approaches to family therapy within a multisystemic framework that includes biological, interpersonal, family, community, school, and organizational systems. Emphasizes the clinical application of systems principles across multiple settings as they relate to mental health issues and sociological family relationships. Students reexamine Bowen's family systems and structural approaches within sociocultural and community contexts (i.e., gender, ethnicity, socioeconomic status, sexual orientation); and articulate multisystemic approaches to recovery.

**MFTH 509 Clinical 4—Clinical Issues (3)**

Provides students the opportunity to integrate theory, research, and practice as they relate to mental health recovery and family resilience. Students examine their clinical interests, personal biases, therapeutic expertise, and grasp of scholarly literature in preparation for their qualifying clinical demonstration, in which they show clinical sophistication in systems/relational practice and apply their personal integration to a particular clinical population or issue. Offered in a seminar format with discussion, group examination of work, exploration, and collaboration with the instructor. Capstone course that follows MFTH 506, 507, and 508—building on the information learned in each of these classes.

**MFTH 514 Child and Family Therapy (2)**

Specific advanced therapeutic techniques to address current relational and mental health problems in children and adolescents.

**MFTH 515 Couple and Sex Therapy (3)**

Addresses current research, models, and techniques of marital and couples therapy as applied to intimacy and sexuality issues. Analyzes frequently reported sexual issues in relationships and critiques common interventions. Provides an historical overview of sex therapy and research trends. Explores contextual issues (i.e., culture, sexual orientation, gender, and power, etc.) that influence couple attitudes and practices, as well as the influence of therapist experience and use of self. Offers treatment options from a variety of perspectives.

**MFTH 516 Divorce and Remarriage (2)**

A family systems approach to separation, divorce, remarriage and step-family formation. Reviews research and family intervention strategies.

**MFTH 517 Group Therapy (2)**

Examines theory, research, and techniques of group therapy from a family systems perspective.

**MFTH 518 Addictions and Eating Disorders (3)**

A family systems approach to the assessment and treatment of eating disorders, alcoholism, and other addictions.

**MFTH 519 Teaching in Higher Education (2)**

Discusses theory, techniques, and processes in the teaching of MFT, including an examination of didactic and experiential techniques.

**MFTH 521 E-Learning: Construction and Design (2)**

Responding to movement of universities toward technology-based instruction, prepares doctoral students to design and construct online and distance education curricula. Emphasizes utilization of Blackboard and Desire2Learn applications. Students create online course modules for undergraduate or master's-level instruction in a family or counseling-related field of study.

Prerequisite: Prior teaching or teaching assistance experience. MFTH 519 recommended.

**MFTH 522 E-Learning: Delivery and Management (2)**

Provides students opportunity to manage an online course designed in E-Learning I via Blackboard. Emphasizes mastery of online course delivery and the creation of a virtual class community. Students responsible for all aspects of online course instruction, including maintenance of their course Web site, communicating with students, and assigning grades while under the mentorship of the instructor. Provides students with actual online teaching and virtual community maintenance experience that offers cutting-edge advances in the field of higher education, as well as enhances their marketability.

### MFTH 524 Administration in Marital and Family Therapy (3)

Using the framework of mission-based management—which addresses the needs of communities and underserved populations—prepares marriage and family therapy doctoral students to manage human-service programs and agencies. Examines strategic planning and continuous quality improvement as methods for maintaining accountability to community stakeholders, creating organizational change, and building morale within the organization.

### MFTH 525 Advanced Marital and Family Therapy Assessment and Testing (3)

Examines testing, diagnosis, and assessment in the practice of marital and family therapy. Emphasizes development of a comprehensive assessment model that integrates traditional models of mental health assessment with cybernetic, developmental, and interactional perspectives. Case material spans individual, couple, and family assessments in clinical and research settings. Students administer instruments and integrate findings into an overall systemic framework.

### MFTH 526 Advanced Psychopharmacology (3)

Overviews medications commonly used in relationship and mental health counseling, with discussion of the interrelationship between marriage and family therapy and medication.

### MFTH 527 Advanced Legal and Ethical Issues (3)

Reviews the AAMFT code of ethics and the California legal codes pertaining to the practice of marriage and family therapy. Develops skills and knowledge that assist student to be an expert witness and family mediator (therapeutic), and that help student understand how to work with the legal system.

### MFTH 528 Organizations: Structure, Process, and Behavior (3)

Helps students understand how organizations operate and how different contingency factors can affect the choices managers make. Covers essential theories

and concepts for managing in the twenty-first century. Treats behavioral processes with reference to organizational structure and design. Larger-systems theory and leadership skills.

### MFTH 529 Advanced Psychopathology and Diagnosis (2)

Focuses on the etiology of marital and family dysfunction, drawing on the perspectives growing out of individual and systems psychopathology.

### MFTH 534 Family Therapy and Medicine (3)

Examines the interface of medical practice and family therapy in common medical family therapy settings. Explores understanding of the culture of medicine, including usual medical practices and procedures. Outlines adaptations of the medical model used by family therapists. Offers models for collaboration of medical family therapists with medical practitioners. Addresses behavioral health intervention strategies for families with health and wellness issues.

### MFTH 536 Family Theory (4)

Examines and critiques the major theories of family from the fields of family studies and family sociology.

### MFTH 537 Contemporary Issues in Marriage and the Family (4)

Examines a variety of issues that are the subject of current research, theorizing, and debate within the field—particularly those that are of relevance to the challenges and changes faced by families. Examines different family forms in U.S. society and around the world.

### MFTH 538 Introduction to Relational Practice (2)

Examines relational practice through observation and team involvement with ongoing cases. Emphasizes the current state of the marriage and family therapy field regarding case conceptualization and clinical skills and techniques using systems/relational approaches. Encourages students to consider their professional identities as MFTs and the theoretical, practical, and ethical issues involved when working from a systems/relational perspective.

**MFTH 544 Health and Illness in Families (3)**

Examines the biopsychosocial-spiritual aspects of illness and wellness, and their impact on families and significant relationships. Addresses contextual issues—such as ethnicity, age, sexual orientation, religion, and socioeconomic status, as they impact wellness, relationships, function, and health access. Highlights the impact of clinician's history regarding health and wellness as it pertains to the whole family/system intervention.

**MFTH 555 Organizational Development and Change (3)**

Helps students understand the application of behavioral and family science knowledge to improve organization performance and organization functioning. Discusses the process of planned change and the change process. Includes interpersonal and group processes such as T-groups, process consultations, and team building. Addresses conflict resolutions, organizational lifespan, leadership skills, and critical-incident stress debriefing.

**MFTH 556 Management Consulting and Professional Relations (3)**

Capstone course for the system consultation and professional relations concentration in the doctoral programs in the Department of Counseling and Family Sciences. Students integrate theories, knowledge, and skills from MFTH 528, 555, and 557. Assists students to apply expertise in organizational assessment, behavior, and change to practical and real life.

**MFTH 557 Organizational Assessment (3)**

How to make an assessment of an organizational system. Addresses data collection and analysis, outcome evaluation, and how to present assessment in a systemic manner.

**MFTH 564 Social Context of Health (3)**

Explores ways in which inequalities in health and illness are patterned by the social context (i.e., race, poverty, gender, etc.) and provides an overview of the mental and physical health care system in the United States. Focuses on the social contextual and structural factors that affect individual and family health and

resilience, and give rise to disparities in access and treatment within the health care system. Topics covered include the history of medical family therapy and the health care system; history of medical institutions in the U.S.; theoretical perspectives on health and illness; social inequality in health and illness; culture and health consequences of mental illness to individuals, families, and society; and mental health over the life course.

**MFTH 601 Statistics I (4)**

The first of a three-quarter sequence of statistics courses taught in the doctoral program in marital and family therapy. Focuses on understanding basic behavioral statistics as a foundation for MFTH 602 and other statistics-related classes. Topics include causality, levels of statistical measurement, frequencies distribution, measures of central tendency, dispersion, probability theory, normal distribution, and ANOVA. Laboratory sessions used to discuss problems encountered in the lectures and to refine student's statistical computing skills. Examples focus on family and mental health issues and clinical outcomes. Per week: 1 lecture, 1 laboratory.

**MFTH 602 Statistics II (4)**

The second of three statistics courses taught in the Ph.D. degree programs in marital and family therapy and family studies. Consists of lectures and computer laboratory sessions. MFTH/FMST 602 focuses on multivariate techniques. Topics include ANOVA, ANCOVA, MANOVA, MANCOVA, formulation and computation of multiple regression models using scalar and matrix algebra, multivariate analysis of variance, regression diagnostics and solutions, regression with categorical dependent variables. Computer laboratory sessions used to discuss problems encountered in the lectures and written assignments and to refine student's statistical computing skills. Provides experience with datasets that focus on outcomes affected by family and mental health issues.

**MFTH 603 Statistics III (4)**

Final course in a three-quarter sequence of statistics courses taught in the doctoral programs in marital and family therapy, as well as in family studies. Includes nonlinear regression models, logistic regression,

discriminant analysis, path analysis, factor analysis, structural modeling; as well as brief discussion of social network analysis and multilevel modeling. Computer laboratory (and problem sets) sessions used to discuss problems encountered in the lectures and to refine student's statistical computing skills. Covers a range of related multivariate statistical analytical techniques as they relate to systemic issues. Per week: 2 lectures, 2 laboratories.

Prerequisite: MFTH 602.

#### MFTH 604 Advanced Qualitative Methods (4)

Prepares doctoral students to conduct and evaluate qualitative research in marital and family therapy and family studies. Introduces students to a social constructionist critique of research and teaches them to think broadly about research paradigms and design—considering questions such as the researcher's role and relationship to the research process, objectivity, reflexivity, credibility, and the construction of knowledge. Students examine various qualitative methodologies—including grounded theory, ethnography, phenomenology, narrative and conversation analysis, and participatory-based action research. Students engage in a grounded theory research project relevant to family processes and/or clinical practice.

#### MFTH 605 Advanced Quantitative Methods (4)

Focuses on survey research design and data analysis, as well as experimental and quasi-experimental design—and their application to marriage and family therapy/family studies. Topics include questionnaire and item design, measurement, sampling designs, research idea development, relational hypotheses formation, survey planning and management, systemic clinical data measurement, logic of analysis, and problems of statistical interpretation. Critically examines threats to internal and external validity, as well as control of plausible alternative hypotheses.

#### MFTH 606 Research in MFT: Overview and Critique (4)

Addresses current issues in marriage and family therapy (MFT) research, forming the basis for future inquiry and program development in the field.

Emphasizes research history, trends in the field, and evidence-based approaches. Provides a forum for professional socialization into the process of designing, implementing, and disseminating research to support the field of MFT.

#### MFTH 607 Computer (1)

Provides the basic tools and information for using computer applications to analyze quantitative and qualitative information, to present marriage and family systemic information, and to conduct project management.

#### MFTH 608 Analysis and Presentation Issues in Research (3)

Final course in a sequence of three research classes. Builds on the material presented in MFTH 605 and MFTH 606. Focuses on the final stage of the research process by identifying issues such as specifying research questions/problems; using relevant literature; selecting and using appropriate analytical tools; summarizing empirical results; and presenting results for proposals, brief reports, posters, and peer review articles. Focuses on quantitative approaches, and includes discussion of meta analysis and mixed methods approaches in understanding, analyzing, and presenting research in family studies and marriage and family therapy.

#### MFTH 624 Program Development for Families and Communities (3)

Examines core components of systemic/relational programs designed to address mental health problems within the context of families and larger systems. Explains the elements of systemic programming that address clinical treatment problems/populations, as well as prevention and intervention issues affecting schools, neighborhoods, and other communities. Using the systemic/relational paradigm of the field, students create programs reflecting their areas of interest.

#### MFTH 625 Grant Writing (3)

Study and practice in locating, developing, and responding to great grant opportunities of interest to marriage and family therapists and the mental health populations they serve. Students develop their own

systemic/relational program, training, research, or dissertation grant ideas; locate potential funding sources; tailor applications and proposals to each funding source; and critique and refine proposals to meet professional and grantor standards.

#### MFTH 626 Program Evaluation and Monitoring (3)

Prepares students to conduct formative and summative evaluations using quantitative, qualitative, and mixed method designs. Emphasizes program evaluation and clinical outcomes using the systemic/relational perspective of marriage and family therapy. Develops students' abilities to collaborate with stakeholders in developing evaluation plans that ensure evaluation reports that meet the intended purposes and are used for program decision making. Evaluation activities include assessment of program need, theory and adherence, process and performance, outcomes, impact, and efficiency.

#### MFTH 627 Advanced Program Development and Evaluation (2)

Participants develop D.M.F.T. degree project proposals through intensive literature review, consultation with organization and community stakeholders, discussion with faculty and peers, and refinement resulting from feedback following formal presentations. The D.M.F.T. degree proposal is the expected outcome from this two-quarter class. For D.M.F.T. degree students only.

Prerequisite: MFTH 624, MFTH 625, MFTH 626.

#### MFTH 634 Practicum in Marital and Family Therapy (2)

A three-quarter practicum series on applications of systems/relational therapy to relational distress and mental health symptoms. Series emphasizes a positive, strengths-based approach to resilience that engages clients in their natural family and community networks. Section 1: addresses gender, culture, socioeconomic, and political aspects of practice. Section 2: focuses on each student's mode of systemic conceptualization and how to work with in-session process. Section 3:

emphasizes religious beliefs and spirituality as client resources, and addresses the moral and ethical imperatives in relationally based practice.

Prerequisite: At least 200 clinical hours.

#### MFTH 635 Research in Family Systems Health Care (4)

Applies qualitative and quantitative research methods to the clinical study of family systems health care.

#### MFTH 636 Family Research (4)

Examines and critiques research pertaining to marriage and family relationships.

#### MFTH 637 Special Projects in Health and Illness in Families (1, 3)

Independent study in which students who have taken MFTH 544 participate in research, program development or evaluation, or clinical activities related to the integration of relational health and wellness.

Prerequisite or concurrent: MFTH 544.

#### MFTH 668 Qualitative Research Practicum (2)

Gives students the opportunity to continue developing the skills needed to conduct and report the qualitative research begun in MFTH 604. Students expected to engage in a research project, with particular emphasis on analysis and manuscript preparation.

#### MFTH 694 Doctoral Seminar (1)

Ph.D. degree students develop and refine their dissertation proposals in a workshop format through presentation and discussion with faculty and other students.

#### MFTH 695 Project Research (1-12)

Required research associated with the capstone project for the D.M.F.T. degree.

#### MFTH 697 Research (1-6)

Independent research relating to marital and family therapy or family studies under the direction of a faculty advisor.

**MFTH 698 Dissertation Research (1-10)**

Completes independent research contributing to the field of marital and family therapy.

**MFTH 785 Professional Clinical Training in MFT (1.5-3)**

Supervised experience in the practice of marital and family therapy. Hours represent face-to-face direct client contact. May be repeated.

**MFTH 786 Professional Development****Proposal (0)**

Must be registered for at least one quarter prior to eligibility for 786A. The student's professional development plan must be formulated and approved by the faculty during this course.

**MFTH 786A Professional Development in Marital and Family Therapy (1.5-12)**

Doctoral-level experience in marital and family therapy under the supervision of a senior-level family therapist/mentor. Must be arranged in advance in the department. A total of 36 units required for graduation.

Prerequisite: MFTH 786.

**MFTH 786B Professional Internship in Marital and Family Therapy—Clinical (1.5-7.5)**

Supervised client contact (face-to-face hours only) in the practice of marital and family therapy, completed while enrolled in MFTH 786A.

Prerequisite: MFTH 786.

**MICROBIOLOGY****MICR 511 Medical Microbiology (1)**

Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification.

**MICR 512 Medical Microbiology (2)**

Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification. Continues MICR 511.

**MICR 513 Medical Microbiology (3)**

Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification. Continues MICR 511 and 512.

**MICR 514 Medical Microbiology (1)**

Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification.

**MICR 515 Introduction to Bioinformatics and Genomics (2)**

Introduces computer-aided analysis of macromolecules and the study of genes and their products on the level of whole genomes.

**MICR 516 Medical Microbiology (3)**

Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification.

**MICR 517 Medical Microbiology (1.5)**

Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification

**MICR 521 Medical Microbiology (8)**

Systematically studies bacteria, fungi, viruses, and animal parasites of medical importance; pathogenic mechanisms; methods of identification and prevention; and clinical correlation.

**MICR 530 Immunology (3)**

Introduces selected topics of modern immunology to graduate students, emphasizing understanding key paradigms.

**MICR 533 Biological Membranes (3)**

Comprehensive description of biological membranes, oxidative phosphorylation, active transport, and signal transduction. Identical to membranes, transport, and signal transduction sections of CMBL 503.

Prerequisite: A course in biochemistry.

**MICR 534 Microbial Physiology (3)**

Provides in-depth coverage of microbial nutrition and growth kinetics, structure and function, bioenergetics and metabolism, nutrient transport, and special bacterial groups and processes unique to microorganisms.

Prerequisite: MICR 521; and a course in biochemistry.

**MICR 536 Laboratory in Gene Transfer and Gene Expression (4)**

Intensive (two-week) laboratory course in the methods of gene transfer and gene regulation in prokaryotes and eukaryotes. Evaluates and discusses experimental results in group sessions. Suitable for students, faculty, and postdoctoral fellows who wish to learn modern molecular biology techniques. Limited to fifteen participants.

**MICR 537 Selected Topics in Molecular Biology (1-3)**

Critically evaluates current progress in a specific research area of molecular biology, including recently published papers and unpublished manuscripts. May be repeated for additional credit.

Prerequisite: MICR 539, CMBL 502.

**MICR 539 Molecular Biology of Prokaryotes and Eukaryotes (8)**

Surveys prokaryotic and eukaryotic molecular biology. Topics include genome structure and organization, recombination and repair, transcription and translation, control of gene expression, posttranslational modification of proteins, protein folding and degradation, gene transfer and mobile genetic elements, control of development, methods and applications of genetic engineering, and bioinformatics.

Prerequisite: CMBL 501. Cross-listing: CMBL 502 or equivalent.

**MICR 540 Physiology and Molecular Genetics of Microbes (3)**

Advanced graduate course covering various hot topics in both microbial physiology and molecular genetics—such as diversity of microbes on earth,

engineering new metabolic pathways, mechanisms of gene regulation and gene transfer, and comparative genomics.

**MICR 545 Molecular Biology Techniques Laboratory (4)**

Laboratory course in modern molecular biology techniques for gene manipulation and analysis in prokaryotes and eukaryotes. Evaluates and discusses experimental results in group sessions.

**MICR 546 Advanced Immunology (4)**

Emerging concepts of immunology first discussed by the class and then reviewed by guest lecturers on a weekly schedule.

Prerequisite: MICR 530 or equivalent.

**MICR 565 Virology (3)**

Fundamental aspects of virus-cell relationships of selected groups of animal viruses. Lectures and a library research project. Guest lecturers.

Prerequisite: MICR 521 or MICR 511; or consent of instructor.

**MICR 566 Cell Culture (3)**

Practical aspects of growth of animal cells in culture. Experience with both primary cell cultures and established cell lines.

**MICR 570 Mechanisms of Microbial Pathogenesis (3)**

In-depth exploration of molecular mechanisms of pathogenesis and host response for selected bacteria, viruses, and parasites. Topics include endotoxins, exotoxins, tools to identify genes crucial to virulence, and a discussion of selected paradigms of microbe-host interaction. Vaccine development serves as a unifying theme linking the host-pathogen interactions. Focuses on evidence for current concepts, using primary journal articles.

**MICR 604 Seminar in Microbiology (1)**

Students required to register for this course every quarter throughout their training.

**MICR 605 Colloquium (1)**

Presentations by peers on a topic selected and directed by a faculty member. (All students required to attend the colloquium. Students registered for colloquium are required to give a presentation.)

**MICR 606 Graduate Seminar (1)**

Student presentation in the form of a seminar. (Course requirement normally fulfilled by presentation of the dissertation or thesis seminar. Other major student presentations may also qualify.)

**MICR 624 Special Problems in Microbiology (2-4)**

Designed primarily for students enrolled in a course work M.S. degree program who elect to work on a research problem.

**MICR 625 Independent Study in Microbiology Literature (2-4)**

Explores in depth a specific topic, selected in consultation with the mentor, such as the antecedents for theses or dissertation research. (Formal proposal for the scope and evaluation of the independent study must be approved by the faculty prior to enrollment in this course. Does not satisfy an elective requirement in the microbiology and molecular genetics program.)

**MICR 626 Special Topics in Microbiology (2-4)**

Critically evaluates current progress in a specific research area, including recently published papers and unpublished manuscripts. (Each course taught by a resident or a visiting scientist who is a recognized authority in the research area under discussion. Students may register for multiple courses under this designation.)

**MICR 634 Clinical Microbiology Practicum (4)**

Rotations through the clinical microbiology laboratory at Loma Linda University Medical Center. Includes exposure to all aspects of testing procedures necessary for the identification of microorganisms isolated from patient specimens. Instrumentation, automation, and rapid-testing identification methods included with 'hands-on' experience. Rotation to

include tuberculosis and mycology, anaerobic bacteriology, blood, special microbiology, parasitology, and general bacteriology.

**MICR 697 Research (1-7)****MICR 698 Thesis (1-3)****MICR 699 Dissertation (2-5)****MICR 891 Microbiology Elective (1.5-12)****MEDICAL EDUCATION SERVICES****MNES 501 Orientation to Medicine (2)**

Provides an interactive, patient-centered contextual learning experience for the purpose of fostering professionalism. A six-week course divided between Summer (2 weeks) and Spring (4 weeks) quarters in the freshman year. Students observe and participate in patient care, work collaboratively with peers and faculty in small groups, and discuss assigned readings as they relate to integrated, whole person care.

**MNES 502 Orientation to Medicine (4)**

Provides an interactive, patient-centered contextual learning experience for the purpose of fostering professionalism. A six-week course divided between Summer (2 weeks) and Spring (4 weeks) quarters in the freshman year. Students observe and participate in patient care, work collaboratively with peers and faculty in small groups, and discuss assigned readings as they relate to integrated, whole- person care.

**MNES 701 Orientation to Clinical Medicine (4)**

Builds on the second-year course MDCJ 524 Pathophysiology and Applied Physical Diagnosis. Diagnosis to provide the knowledge, skills, and values necessary to facilitate a smooth transition from the preclinical to the clinical curriculum.

**MNES 791 Third-year Elective (0)**

Gives students an opportunity to spend time (two weeks) in a specialty that holds particular interest to them, allowing them to develop their skills to a level that will be beneficial in their fourth-year electives.

## NEUROLOGY

### NEUR 599 Directed Elective Study (1.5-12)

### NEUR 701 Neurology Clerkship (1.5-6)

Emphasizes the development of clinical skills and knowledge pertinent to the field of neurology through teaching modalities that include didactic lectures, teaching conferences, video clips, patient care experience, and direct faculty supervision.

### NEUR 891 Neurology Elective (1.5-18)

## NEUROSURGERY

### NEUS 891 Neurosurgery Elective (1.5-18)

## NURSING BRIDGE

### NRSB 101 Critical Thinking and Learning Strategies for Nursing (2)

Focuses on the development of critical-thinking methods as well as learning strategies and study skills important to success in nursing. Emphasizes application of critical thinking, nursing process, study skills, and wholeness to student life and to nursing content.

### NRSB 102 Science Principles Applied to Nursing (2)

Focuses on basic science concepts as applied to nursing. Includes a review of anatomy; and applies principles of physiology, microbiology, chemistry, and physics to critical thinking in nursing.

### NRSB 103 Introduction to Mathematics for Nursing (1)

Includes a review of basic mathematics, equivalent values, ratios, and proportions. Applies concepts to nursing situations in which medication dosage calculations are used. Computer-assisted instruction modules and a ninety-minute laboratory each week, utilized to assist students in developing the necessary skills in a supportive environment.

### NRSB 104 Medical Terminology for Nursing (2)

Introduces basic medical terminology by the study of prefixes, combining forms, and suffixes. Emphasizes understanding, interpreting, and spelling of singular and plural forms; pronunciation; and correct usage of terms in a variety of situations.

### NRSB 105 Writing for Nursing (3)

Focuses on developing the writing skills necessary for nursing. Includes a review of principles of grammar and application of writing skills to a research paper related to a nursing topic. Includes a computer component that enables the student to search nursing data bases and apply word-processing skills.

### NRSB 106 Reading in Nursing (2)

Focuses on improving vocabulary, reading comprehension, and reading speed using nursing and health-related literature. Students expected to use specific prereading and reading strategies to monitor comprehension and summarize reading.

## NURSING

### NRSG 214 Fundamentals of Professional Nursing (8)

Introduces the profession of nursing. Emphasizes the basic health needs of the adult-client system, with the goal of optimal wellness/wholeness. Identifies stressors to the client system's lines of defense. Develops beginning-nursing decision-making skills. Supervised experience in application of nursing knowledge to adult-client systems in acute-care settings. Socializes into the role of professional nursing, including exploration of historical, ethical, cultural, and legal aspects. Current issues in professional nursing/health care.

### NRSG 216 Basic Nursing Skills and Health Assessment (4)

Introduces the basic skills required to assess, maintain, and strengthen client lines of resistance and defense. Supervised practice in communication skills and nursing interventions to achieve optimal client wellness. Foundation to clinical decision-making and

client education. General concepts and techniques for performing a head-to-toe physical examination and proper documentation of assessment findings.

#### NRSG 217 Psychiatric Mental Health Nursing (6)

Introduces the care of client systems exhibiting psychiatric mental health symptoms related to impaired lines of defense or resistance. Emphasizes primary, secondary, and tertiary interventions to strengthen lines of defense/resistance for the client.

Prerequisite: NRSG 214, NRSG 216.

#### NRSG 224 Nursing Pathophysiology (4)

Overview of the physiological function of a client system under stress, the common stressors that threaten system stability/integrity, and the consequences that result to the individual whose lines of resistance and defense are breached. Foundation for understanding the rationale behind assessment findings and nursing intervention.

#### NRSG 225 LVN Bridge Course (4)

Designed for the LVN transfer student. Content includes introduction to baccalaureate nursing, physical assessment, and gerontology.

#### NRSG 244 Strategies for Academic Success (1)

Assessment of student's learning needs, with individualized approaches to learning strategies essential for success in nursing education and practice.

#### NRSG 299 Directed Study (1-8)

Opportunity for clinical learning in a selected area of nursing.

Prerequisite: Consent of instructor and the associate dean.

#### NRSG 305 Nursing Pharmacology (3)

Overview of the major drug classifications. Introduces the therapeutic use of drugs in the maintenance and strengthening of the client system lines of resistance and defense.

#### NRSG 308 Adult Health Nursing I (8)

Emphasizes the wholistic nature of the adult/aging client system in response to acute, short-term stressors. Uses the nursing process to assist the client system in achieving optimal wellness through strengthening lines of resistance and defense. Supervised practice in caring for the adult-client system in acute-care settings.

Prerequisite: NRSG 214, NRSG 216, NRSG 224.

#### NRSG 309 Gerontological Nursing (4)

Focuses on older adult client systems experiencing normal aging. Examines age-related stressors to client variables—physiological, psychological, sociocultural, developmental, and spiritual. Guided learning experiences in nursing care of the older client in long-term care and community settings.

Prerequisite: NRSG 214, NRSG 216.

#### NRSG 314 Obstetrical and Neonatal Nursing (6)

Emphasizes primary prevention strategies that promote optimal wellness for the mother and neonate, and identification of stressors that influence the family's normal lines of defense. Applies the nursing process, using a wholeness approach when caring for the maternal-fetal and maternal-infant dyads.

#### NRSG 315 Child Health Nursing (6)

Focuses on the client from infancy through adolescence within the family system. Wholistic nursing care emphasizing optimal wellness in relation to potential or actual stressors, including primary, secondary, and tertiary interventions. Individualization of the nursing process guided by physiological, psychological, sociocultural, developmental, and spiritual variables of the client system.

Prerequisite: NRSG 317.

#### NRSG 316 The Nursing Role in Health Promotion (4)

Prepares the student to promote optimal wellness throughout the lifespan. Examines the impact of common lifespan stressors on students, clients, and family systems. Primary preventions—including theories of behavior change, motivation, and health education—applied to strengthen lines of defense.

**NRSG 317 Adult Health Nursing II (8)**

Continues NRSG 308. Explores relationships among adult and aging client/family system variables in the development of primary, secondary, and tertiary interventions for chronic stressors that require comprehensive nursing care. Guided practice in acquiring advanced nursing skills and clinical integration.

Prerequisite or concurrent\*: NRSG 308, NRSG 217\*.

**NRSG 337 Strategies for Professional Transition (4)**

Focuses on growth and enhancement of the professional nurse. Based on learning objectives for career growth, students assess and strengthen the application of skills in communication, research, professional responsibility, teaching and learning process, management, nursing process, and individual empowerment—for themselves and for clients. Assessment and development of learning objectives. Student designs personal strategies to attain goals. Includes critical thinking, reflective journaling, and development of professional portfolio. Limited to RNs returning for B.S. or M.S. degree.

**NRSG 399 Nursing Externship (1)**

An elective work-study course that provides opportunity for experiential understanding of the nature of nursing in the work place. Focuses on application of the Neuman framework. The student, under the supervision of an RN preceptor, applies previously learned skill in providing direct patient care.

Prerequisite: NRSG 317.

**NRSG 407 Integration of Essential Concepts (6)**

Broadens current nursing knowledge by applying Neuman's framework to a chosen vulnerable population; as well as by employing primary, secondary, and tertiary nursing interventions with the chosen population. Limited to RNs returning for BS degree.

Prerequisite: NRSG 337.

**NRSG 408 Critical Care Nursing (6)**

Students study and participate in complex clinical nursing practice (critical care). Students utilize the

nursing process in primary, secondary, and tertiary prevention with critically ill clients and their families. Emphasizes the scientific basis of the effects of stressors on the lines of defense and resistance. Promotes collaborative efforts of the members of the health care team in the care of the critically ill client and his/her family.

Prerequisite: NRSG 314, NRSG 315, NRSG 316, NRSG 317.

**NRSG 409 Home Health Nursing (3)**

Wholistic care of the client system across the lifespan within the home. Clinical experience focuses on acute and chronic stressors. Introduces community resources to facilitate continuity of care and to promote optimal wellness.

Prerequisite: NRSG 314, NRSG 315, NRSG 316, NRSG 317.

**NRSG 410 Professional Nursing Issues (2)**

Issues relating to licensure and entry into nursing practice including delegation, quality improvement, and managed care. Addresses socialization and beginning management concepts.

Prerequisite: Completion of all 200- and 300-level NRSG courses.

**NRSG 414 Management and Leadership in Nursing (6)**

The health care agency or nursing unit viewed as the core system, with lines of defense and lines of resistance. The management process as the set of interventions aimed at maintaining or restoring a state of equilibrium and order within the organization. The role of the first-line manager observed and some aspects experienced.

Prerequisite: RN license in CA; NRSG 337, NRSG 407.  
Corequisite: Current employment as an RN.

**NRSG 415 Community Mental Health Nursing (4)**

Student delivers psychiatric nursing care in a variety of clinical settings within the community. Guidance given in assessing stressors and developing primary, secondary, and tertiary interventions within populations at risk for psychosocial stress. Student

practices case management strategies and psychoeducational interventions. Clinical experience directed toward optimizing lines of defense and resistance for families, groups, and communities.

Prerequisite: Completion of 200- and 300-level NRSG courses.

#### NRSG 416 Public Health Nursing (8)

Focuses on the optimal wellness of the community as client. Intervention strategies emphasizing primary, secondary, and tertiary prevention with micro-/macroclient systems. Develops skills in assessment; diagnosis; planning based on outcomes; and implementation within inter-, extra-, and intrasystem of both aggregate and geopolitical clients.

Prerequisites: EPDM 414 or completion of upper division epidemiology course;

#### NRSG 417 Professional Nursing Practicum (7)

Enhances the process of professional socialization from the academic to the practice setting by providing an opportunity for synthesis and application of theoretical knowledge and skills to a preceptored clinical experience selected by the student. Focuses on using the nursing process to protect and promote intact lines of resistance and defense of individuals, families, and groups in diverse circumstances. Students develop personal learning objectives under guidance of the instructor.

Prerequisite: NRSG 408, NRSG 409, NRSG 410.

#### NRSG 418 Capstone Nursing Practicum (8)

Application of theoretical knowledge and skills in a preceptored clinical experience. Integrates selected management principles into clinical practice.

Prerequisite: NRSG 415, NRSG 416, NRSG 429

#### NRSG 419 Capstone: Management and Leadership in Nursing (5)

Provides historical overview of theories of leadership and management leading to the development of leadership skills. Explores current concepts of issues in the field of nursing.

Prerequisites: NRSG 415, NRSG 416, NRSG 429

#### NRSG 420 Professional Preparation (2)

Preparation for the NCLEX-RN examination, with emphasis on career development and licensure issues.

Prerequisites: NRSG 415, NRSG 416, NRSG 429

#### NRSG 424 Professional Practice for the Experienced RN (7)

Continues the integration of concepts from Neuman's Theoretical Framework. Provides opportunities for the registered nurse to synthesize and apply theoretical knowledge and skills to a selected clinical work environment. Facilitates commitment to lifelong learning. Applies nursing informatics and health care policy to the current work setting. Students identify and explore current professional issues for nurses.

Prerequisite: NRSG 337, NRSG 407.

#### NRSG 429 Nursing Research (4)

Prepares the novice nurse consumer to identify practice issues and appraise evidence related to the profession of nursing in order to more effectively integrate evidence into learning, understanding, and practice. Provides the knowledge and understanding of qualitative and quantitative systems of inquiry necessary for the novice nurse to facilitate optimal wellness through retention, attainment, and maintenance of client system stability.

#### NRSG 497 Advanced Clinical Experience (1.2-12)

An elective course open to students seeking clinical experience in nursing.

#### NRSG 499 Directed Study (1-8)

Opportunity for clinical experience in a selected area of nursing.

Prerequisite: Consent of instructor and the associate dean.

#### NRSG 509 Guided Study (1-6)

Opportunity for study in a particular area of nursing, under faculty direction.

#### NRSG 515 Health Policy (3)

Examines the impact of the sociopolitical system on health services and the profession of nursing.

Introduces political processes and analyzes current trends and issues affecting health and nursing, as well as the impact of nursing on these systems in the workplace, government, professional organizations, and the community.

#### NRSG 516 Advanced Role Development (2)

Examines transition into the advanced practice nursing role through consideration of the history, theoretical bases, role competencies, selected professional strategies, and legal requirements necessary for role enactment.

#### NRSG 517 Theoretical Foundations for Advanced Practice (4)

Focuses on the theoretical foundations of nursing as an applied science. Nursing knowledge examined in the context of theories and concepts that guide advanced nursing practice. Discusses theoretical applications for NP, CNS, administration, and nurse educator practice. Critiques and applies theory to selected issues—with emphasis on individual, family, and population interventions and outcomes.

#### NRSG 519 Advanced Role Development for the Nurse Anesthetist (2)

Builds on NRSG 516 and focuses on issues relevant to nurse anesthesia. Includes a history of nursing anesthesia and the role of the nurse anesthetist in California, and an overview of the ethical and medical-legal issues specific to anesthesia practice. Per week: theory 2 hours, practicum 0 hours.

Prerequisite: NRSG 516.

#### NRSG 520 Principles of Nurse Anesthesia Practice I (4)

Introduces communication and critical thinking skills relevant to the nurse anesthetist role. Addresses the preoperative assessment, perioperative monitoring, airway management, and fluid and electrolyte balance of the surgical patient. Includes a comprehensive examination of the anesthesia machine and related anesthesia equipment. Hands-on laboratory and simulation experiences provided. Per week: theory 3 hours, practicum 1 hour.

#### NRSG 521 Principles of Nurse Anesthesia Practice II (4)

Focuses on concepts and techniques in regional anesthesia, monitored anesthesia care, and postoperative management; and on individualized perianesthetic management of patients with cardiovascular and respiratory diseases. Hands-on laboratory and simulation experiences provided. Per week: theory 3 hours, practicum 1 hour.

Prerequisite: NRSG 520.

#### NRSG 522 Principles of Nurse Anesthesia Practice III (5)

Focuses on individualized perianesthetic management of patients with neurological, renal, endocrine, hepatobiliary, gastrointestinal, and musculoskeletal diseases; on related surgical procedures, anesthesia for reconstructive surgery, and therapeutic and diagnostic procedures; and on geriatric patients. Provides hands-on laboratory and simulation experiences. Per week: theory 4 hours, practicum 1 hour.

Prerequisite: NRSG 521.

#### NRSG 523 Principles of Nurse Anesthesia Practice IV (3)

Focuses on anatomical, physiological, and common pathophysiological changes occurring during pregnancy; proper assessment, monitoring, and management of obstetrical patients; and in-depth review of neonatal and pediatric anesthesia. Includes discussion of specialty areas such as trauma, outpatient surgery, and pain management. Provides hands-on laboratory and simulated experiences. Per week: theory 2 hours, practicum 1 hour.

Prerequisite: NRSG 522

#### NRSG 524 Clinical Practicum & Correlation Conference I (3)

Supervised experience in the management of patients throughout the perianesthetic continuum. Focuses on preparation of the anesthetizing area and successful creation and implementation of an anesthetic plan of care. Emphasizes patient safety and prevention of iatrogenic complications. Clinical correlation conference participation includes attendance at required grand

rounds and conferences, participation in class discussions and projects, and review of selected anesthetic concepts and techniques. Per week: theory 1 hour, practicum 2 hours.

Prerequisite: NRSG 522.

#### NRSG 525 Clinical Practicum & Correlations Conference II (4)

Continued supervised experience in the management of patients throughout the perianesthetic continuum, focusing on identification and intervention of physiological responses to anesthesia and surgery. Clinical correlation conference participation includes attendance at required grand rounds and conferences, participation in class discussions and projects, and review of selected anesthetic concepts and techniques.

Per week: theory 1 hour, practicum 3 hours.

Prerequisite: NRSG 524

#### NRSG 526 Clinical Practicum & Correlation Conference III (4)

Continued supervised experience in the full scope of anesthesia practice, focusing on predicting and preventing anesthetic management issues in cases with increasing complexity. Includes evening, night, weekend, and call shifts. Clinical correlation conference participation includes attendance at required grand rounds and conferences, participation in class discussions and projects, and review of selected anesthetic concepts and techniques. Per week: theory 1 hour, practicum 3 hours.

Prerequisite: NRSG 525.

#### NRSG 527 Clinical Practicum & Correlation Conference IV (4)

Emphasizes exposure to advanced anesthetic and surgical techniques. Incorporates neurosurgical, cardiovascular, pediatric, obstetric, trauma, and special procedure rotations. Clinical correlation conference participation includes attendance at required grand rounds and conferences, participation in class discussions and projects, and review of selected anesthetic concepts and techniques. Per week: theory 1 hour, practicum 3 hours

Prerequisite: NRSG 526

#### NRSG 528 Clinical Practicum & Correlation Conference V (4)

Continued unrestricted experience in advanced anesthetic techniques and surgical specialties. Includes orientation and instruction of junior students enrolled in Clinical Practicum and Correlation Conference I. Clinical correlation conference participation includes attendance at required grand rounds and conferences, participation in class discussions and projects, and review of selected anesthetic concepts and techniques. Per week: theory 1 hour, practicum 3 hours.

Prerequisites: NRSG 527.

#### NRSG 529 Clinical Practicum & Correlation Conference VI (4)

Focuses on the development and implementation of anesthetic care plans using all major techniques for all surgical specialties, with increasing independence based on individual skill levels. Provides opportunities for refinement of decision-making skills in preparation for the independent management of anesthetics. Clinical correlation conference participation includes attendance at required grand rounds and conferences, participation in class discussions and projects, and review of selected anesthetic concepts and techniques. Per week: theory 1 hour, practicum 3 hours.

Prerequisite: NRSG 528.

#### NRSG 544 Teaching and Learning Theory (3)

Explores the components of the teaching-learning process. Opportunity provided for students to practice specific teaching strategies.

#### NRSG 545 Teaching Practicum (3, 4)

Assists the student in developing the ability to teach in the specialty area of choice, both theory and clinical. Emphasizes the nurse-teacher as facilitator of learning. Integrates expected knowledge and skills related to educational methodology and clinical nursing. Practice teaching done in the classroom and clinical setting. Per week: theory 0 hours, practicum 9-12 hours.

#### NRSG 546 Curriculum Development in Higher Education (3)

Emphasizes the basic principles of curriculum building (needs assessment, program planning,

implementation, and evaluation) within the context of the purposes, trends, and issues of the undergraduate curriculum in higher education. Considers content in nursing science and physical therapy and related disciplines in the context of the philosophical base and nursing and physical therapy theory. Synthesizes knowledge and application through a curriculum development project.

#### NRSG 547 Nursing Leadership: Principles and Practices (3)

Focuses on analysis of leadership/management issues relevant to nurses at the graduate level, working in various health care organizations. Examines evidenced-based theories, evolving organizational effectiveness models, and research-validated skill sets necessary for innovative, transformational leadership.

#### NRSG 548 Nursing Administration Practicum (1-8)

Provides opportunities for the ongoing development and refinement of leadership capability in selected areas of nursing administration. Students showcase competencies in the synthesis and application of nursing, management, economic, and human resources theories to solve real-world issues of importance to the profession and the workplace. Per week: lecture 0 hours, practicum 3-24 hours.

Prerequisite: NRSG 547; HADM 528.

#### NRSG 549 Assessment of Learning Outcomes (3)

Explores methods of assessing classroom and clinical performance in nursing. Assists students in developing measurement instruments that assess clinical reasoning. Discusses test administration, results analysis, and appropriate feedback. Addresses social, ethical, and legal issues related to evaluation, testing, and grading.

#### NRSG 551 Pediatric Primary Health Care I (4)

Focuses on the PNP primary care role in health promotion, wholistic assessment, and management of minor common illnesses for children from newborn through adolescence. Per week: theory 3 hours, practicum 3 hours.

Prerequisite: NRSG 555, NRSG 556, NRSG 651, PHSL 588.

#### NRSG 552 Pediatric Primary Health Care II (6)

Continues development of the PNP primary care role for children from newborn through adolescence, related to assessment and management of common or acute illnesses while incorporating health maintenance and prevention. Per week: theory 3 hours, practicum 9 hours.

Prerequisite: NRSG 551.

#### NRSG 553 Pediatric Primary Health Care III (7)

Continues the development of the PNP primary-care role for children from newborn through adolescence in assessment and management of chronic or complex illnesses. Per week: theory 3 hours, practicum 12 hours.

Prerequisite: NRSG 552. Corequisite: Clinical experience.

#### NRSG 554 Pediatric Primary Health Care IV (7)

Continues development of the PNP primary care role for children from newborn through adolescence in assessment and management of chronic or complex illnesses. Per week: theory 2 hours, practicum 15 hours.

#### NRSG 555 Pharmacology in Advanced Practice I (3)

Principles of pharmacodynamics, pharmacotherapeutics, and pharmacokinetics. Overview of specific major drug classifications, discussion of the therapeutic use of drugs, and application to medical conditions.

Prerequisite: NRSG 553. Corequisite: Clinical experience.

#### NRSG 556 Pharmacology in Advanced Practice II (2)

Builds on principles discussed in NRSG 555, with a focus on additional specific major drug classifications, discussion of the therapeutic use of these drugs, and application to medical conditions. Addresses specific legal and ethical issues for advanced nursing practice.

Prerequisite: NRSG 555

#### NRSG 557 Pediatric Primary Health Care V (5)

Focuses on integration and synthesis of knowledge and skills, under the guidance of an expert preceptor,

with the goal of working independently and collaboratively within a health care team. Per week: theory 0 hours, practicum 15 hours.

Prerequisite: NRSG 554.

#### NRSG 558 Advanced Pharmacology for Nurse Anesthesia I (6)

First of two distance education technology-based courses focused on development of knowledge and application of pharmacology to nurse anesthesia clinical practice. Includes principles of drug action, pharmacokinetics, pharmacodynamics, inhalation anesthetics, intravenous adjuncts, and opiates. Per week: theory 6 hours, practicum 0 hours.

#### NRSG 559 Advanced Pharmacology for Nurse Anesthesia II (5)

Second of two distance education technology-based courses focused on development of knowledge and application of pharmacology to nurse anesthesia clinical practice. Includes muscle relaxants, local anesthetics, anti-arrhythmic medications, and medications for pulmonary and cardiovascular disease. Per week: theory 5 hours, practicum 0 hours.

Prerequisite: NRSG 558.

#### NRSG 560 Neonatal Pharmacology (2)

Builds on the principles of NRSG 555—focusing application to the neonate—with additional overview of specific drug classifications and the therapeutic use of drugs for this population.

Prerequisite: NRSG 555.

#### NRSG 561 Adult Primary Health Care I (4)

Introduces the role, professional responsibilities, and clinical practice of the adult nurse practitioner (ANP). Focuses on primary health care concepts related to health maintenance and promotion of optimal wellness of the adult, mainly women's health and the aging adult. Per week: lecture 2 hours, practicum 6 hours.

Prerequisite: NRSG 555, NRSG 556, NRSG 651; PHSL 588.

#### NRSG 562 Adult Primary Health Care II (6)

Further develops the ANP role of prevention, assessment, and management of patients with common

acute and chronic conditions across the life span.

Emphasizes health promotion and lifestyle education.

Per week: lecture 3 hours, practicum 9 hours.

Prerequisite: NRSG 561

#### NRSG 563 Adult Primary Health Care III (6)

Continues development of the ANP role of prevention, assessment, and management of patients with acute and chronic conditions of selected body systems. Emphasizes health promotion. Builds on prior didactic and clinical work. Per week: lecture 3 hours, practicum 9 hours.

Prerequisite: NRSG 562

#### NRSG 564 Adult Primary Health Care IV (7)

Continues development of the ANP role of prevention, assessment, and management of patients with more complex acute and chronic conditions, including mental health and behavioral issues. Emphasizes health promotion. Builds on prior didactic and clinical work. Per week: lecture 3 hours, practicum 12 hours.

Prerequisite: NRSG 563

#### NRSG 565 Adult Primary Health Care V (6)

Incorporates and integrates learning from all previous primary health care courses and clinical experiences. Final clinical practicum with opportunity to develop increasing autonomy working with clinical preceptors in selected primary care settings. Includes end-of-program information, case study reviews, and on-line certification practice testing. Per week: lecture 0 hours, practicum 18 hours.

Prerequisite: NRSG 564.

#### NRSG 574 Philosophical Foundations of Nursing Science (2)

Companion course to PHIL 616. Explores the development of knowledge within the discipline of nursing. Examines sources of knowledge and the assumptions underlying major approaches to scientific inquiry. Critiques these approaches in relation to the expansion of nursing science.

Prerequisite: PHIL 616.

### NRSG 575 Strategies for Theory Development in Nursing (4)

Engages the student in examining and applying the process of concept and theory development. Students analyze phenomena of interest, use selected strategies to construct conceptual relationships, and evaluate theoretical frameworks for development of nursing science.

### NRSG 581 Psychiatric Nurse Practitioner I: Models and Theoretical Foundations (4)

Core theoretical content for the psychiatric nurse practitioner, including conceptual models and theories used to frame assessment, diagnosis, planning, intervention, evaluation, and research for this advanced practice registered nurse role.

Prerequisite: NRSG 516.

### NRSG 582 Psychiatric Nurse Practitioner II: Disorders (7)

First quarter of a two-quarter sequence. Focuses on the theoretical basis for biological and psychopathologic aspects of psychiatric disorders and symptoms, and on mastery and integration of concepts from neurophysiology, neuropsychology, and social science for application to practice in the psychiatric nurse practitioner role. Reviews major Axis I and Axis II disorders across the life span in order to enhance assessment and treatment knowledge and skill.

### NRSG 583 Psychiatric Nurse Practitioner III: Disorders (7)

Second quarter of a two-quarter sequence. Focuses on the theoretical basis for biological and psychopathologic aspects of psychiatric disorders and symptoms, and on mastery and integration of concepts from neurophysiology, neuropsychology, and social science for application to practice in the psychiatric nurse practitioner role. Reviews major Axis I and Axis II disorders across the life span in order to enhance assessment and treatment knowledge and skill.

### NRSG 584 Psychiatric Nurse Practitioner IV: Psychopharmacology (6)

Focuses on advanced concepts in neuroscience, psychopharmacology, and clinical management in the

role of the psychiatric nurse practitioner related to psychopharmacological treatment of psychiatric disorders and symptoms. Based on current scientific knowledge, ANA standards, and guidelines from the psychiatric-mental health nurse practitioner competencies.

### NRSG 585 Psychiatric Nurse Practitioner V: Treatment Modalities (7)

Focuses on proficiency in the assessment, diagnosis, and management of psychiatric disorders; and the use of psychopharmacology and of individual, family, and group treatment modalities based on theoretical concepts from psychotherapy. Includes integration of consultation and management of professional practice for the psychiatric nurse practitioner.

### NRSG 601 DNP Professional Development (2)

Introduces professional DNP role development and issues. Explores development of and rationale for the DNP degree, roles of the DNP-prepared advanced practice nurse—including researcher, health policy advocate, and nurse leader—and considerations for obtaining the first DNP position.

### NRSG 602 Evidence-based Models of Advanced Practice and Healthcare Outcomes (3)

Focuses on the philosophical and scientific foundations of nursing science, theory, empirically based evidence, and relationship to complexity of doctoral-level practice. Examines evidence-based models and theories for use in clinical decision making and program development. Evaluates evidence-based practice impact on quality of health care.

### NRSG 603 Evaluation of Informational Systems (3)

Critical examination of information and technology systems that support advanced practice and administrative use, research for evidence-based practice, quality improvement, outcome evaluation, management, and education. Analyzes DNP nursing roles in designing, selecting, and evaluating information systems in a variety of health care institutions and

organizations. Includes principles for identification and management of ethical, regulatory, and legal issues. Seminar 20 hours, practice 30 hours.

### NRSG 605 Vulnerable Populations (3)

Analyzes historical, cultural, social, and political factors that render populations vulnerable to ill health. Examines concepts and models germane to vulnerable populations. Discusses implications for advanced practice nursing and program development specific to vulnerable populations.

### NRSG 607 Complex Issues in Nursing Practice (3)

Focuses on complex professional and systems issues facing the advanced clinical nursing practice leader. Provides an understanding of how health care systems function as a whole in the United States. Examines the nature, components, history, stakeholders, dynamics, achievements and deficiencies in large, complex systems. Develops student's conceptual understanding of an effective change agent within the health care environment

### NRSG 608 Translational Research for Advanced Nursing Practice (3)

Critical evaluation, translation, and integration of research into nursing practice. Examines development of a clinical question, methods for finding evidence, evaluation of research findings for practice, development and assessment of evidence-based guidelines/protocols, and application of the evidence.

### NRSG 609 Policy Development and Advocacy (3)

Principles and methods of policy development and advocacy. Emphasizes strategic planning, policy formation, role of the advocate, coalitions and alliances, consensus building, political messages, and getting messages to the public and to policymakers.

### NRSG 611 Assessment, Planning, and Outcomes for Clinical Practice (3)

Methodology and instrumentation that support assessment of individuals, families, populations, and organizations. Promotes goal setting, evaluation, data

collection, interpretation, and report preparation.

Allows the nurse leader to design, implement, and test strategies and protocols in order to implement creative care for innovation in nursing practice.

### NRSG 612 Health Care Systems Leadership (3)

Focuses on development of leadership skills in the health care system and on facilitation of safe patient care. Explores the role and function of the doctorally prepared nurse leader and how nursing leadership can support staff in the achievement of patient safety / reliability / quality, coordinated disease management, and continuity of care. Examines current and future issues confronting today's nursing leaders.

### NRSG 613 Cultural Issues in Nursing Practice (3)

Assesses multicultural populations in a given care setting. Uses appropriate tools to assess health care providers' perceptions, knowledge, and readiness to provide culturally competent care for this population. Plans, implements, and evaluates methods for the provision of equitable and just care to selected populations.

### NRSG 617 Clinical Practicum: Growing Family (2-12)

Prepares the student for the clinical nurse specialist role in the area of growing family through clinical experience focused on the competencies and roles of the CNS under the guidance of an expert preceptor. Per week: theory 0 hours, practicum 6-36 hours.

Prerequisite or concurrent: NRSG 646.

### NRSG 618A Writing for Publication (2)

First of a two-course mentored writing experience that includes information, resources, and guidance that facilitate development of a publishable manuscript.

### NRSG 618B Writing for Publication (1)

Second of a two-course mentored writing experience that includes information, resources, and guidance that facilitate development of a publishable manuscript.

**NRSG 619 Neonatal Critical Care I: Neonatal Advanced Physical Assessment (3)**

Focuses on neonatal assessment—including maternal and environmental factors, gestational age, behavioral and developmental assessment, comprehensive history and neonatal physical examination, diagnostic testing, and family assessment. Per week: theory 3 hours, practicum 0 hours.

**NRSG 620 Neonatal Nurse Practitioner II (5)**

Focuses on concepts and principles of genetics, embryology, growth and development, physiology/pathophysiology, and pharmacology/toxicology as relevant to the assessment and management of the health promotion and maintenance needs of the newborn. Per week: theory 4 hours, practicum 3 hours.

Prerequisite: NRSG 619. Corequisite: Clinical practicum that focuses on development of assessment and history skills and the delivery room.

**NRSG 621 Neonatal Nurse Practitioner III (8)**

Focuses on concepts and principles of pathophysiology, neonatal disease entities, and disorders in relation to the clinical management of the sick neonate. Per week: theory 5 hours, practicum 9 hours.

Prerequisite: NRSG 620. Corequisite: Clinical practicum that focuses on sick/critically ill ventilated and non-ventilated neonates.

**NRSG 622 Neonatal Nurse Practitioner IV: Practicum (9)**

Focuses on concepts and principles of pathophysiology and neonatal disease entities and disorders in the management of the sick/critically ill neonate. Per week: theory 6 hours, practicum 9 hours.

Prerequisite: NRSG 621. Corequisite: Clinical practicum that focuses on sick/critically ill ventilated and non-ventilated neonates.

**NRSG 623 Neonatal Nurse Practitioner V: Practicum (13)**

Synthesizes concepts, principles, theories, knowledge, and skills from the preceding advanced neonatal critical-care nursing courses to practice. Per week: theory 0 hours, practicum 39 hours.

Prerequisite: NRSG 622.

**NRSG 624 The Adult and Aging Family I (2-4)**

Focuses on concepts and theories relevant to the practice of the advanced practice nurse caring for adult and aging clients. Applies theory to clinical practice in a selected segment of the population. Per week: theory 2 hours, practicum 0-6 hours.

**NRSG 625 The Practice Mentor (3)**

Examines the art of mentoring by the nursing leader as it relates to nursing education, practice, and research. Discusses methods of empowering mentees that will increase vision, creativity, risk taking, and critical thinking while maximizing individual talents. Theory, 2 units; clinical, 1 unit.

**NRSG 626 The Adult and Aging Family II (2-3)**

Focuses on concepts and theories relevant to the practice of the advanced practice nurse caring for clients within the adult and aging family population, with application to a selected segment of the population. Examines the role, competencies, and outcomes relevant to the practice of the clinical nurse specialist. Per week: theory 2 hours, practicum 0-3 hours. (required for selected concentration areas.)

Prerequisite: NRSG 624.

**NRSG 627 DNP Project Development Seminar (1)**

Using the Iowa Model of Evidence-Based Practice to Promote Quality Care, systematically develops over seven quarters the approach for implementation of an evidence-based practice project. Includes identification of the EBP question, the search for evidence, and steps for effective translation of the project into the specific practice setting.

**NRSG 628 Clinical Practicum: Adult and Aging Family (2-12)**

Prepares the student for the clinical nurse specialist role in the area of adult and aging family through clinical experience focused on the competencies and roles of the CNS under the guidance of an expert preceptor. Per week: theory 0 hours, practicum 6-36 hours.

**NRSG 629 DNP Project Development Seminar: Leadership (1)**

Using the Johns Hopkins Nursing Evidence-Based Practice Model and Guidelines, systematically develops over seven quarters the approach for implementation of an evidence-based practice project. Includes identification of the EBP question, the search for evidence, and steps for effective translation of the project into the specific practice setting.

**NRSG 634 DNP Project (3)**

Student finalizes plans of clinical EBP project, translates the project into the specific practice setting, and evaluates the results of the project.

**NRSG 635 DNP Project: Leadership (3)**

Student finalizes plans of clinical EBP project, translates the project into the specific practice setting, and evaluates the results of the project.

**NRSG 636 Methods of Disciplined Inquiry (2)**

Provides an overview of formal methods of inquiry and explores the responsibility of doctorally prepared nurses for the future of nursing knowledge. Helps students build a foundation for a program of formal scholarly inquiry in an identified area of interest.

Prerequisite: Acceptance into Ph.D. degree program in the School of Nursing; or consent of instructor.

**NRSG 637 LLU Scholars Seminar (1)**

Online seminar that provides students with a forum for systematic scholarly discussion of their developing role as Ph.D.-prepared stewards of the nursing profession. Helps students integrate and apply core content to their role, philosophy, and research emphasis while exchanging and critiquing ideas in a professional

and collegial setting. Progresses from role transition through dissertation support over the course of four years.

Prerequisite: Admission to Ph.D. degree program; or consent of instructor.

**NRSG 645 Growing Family I (2-4)**

Focuses on concepts and theories relevant to the advanced practice nurse caring for clients within the growing family lifespan (perinatal through pediatrics). Applies clinical practice in a selected population. Per week: theory 2 hours, practicum 0-6 hours.

**NRSG 646 Growing Family II (2, 3)**

Focuses on concepts and theories relevant to the advanced practice nurse caring for clients within the growing family lifespan (perinatal through pediatrics), with application to a selected population. Examines the role, competencies, and outcomes for clinical nurse specialist practice. Per week: theory 2 hours, practicum 0-3 hours.

Prerequisite: NRSG 645.

**NRSG 650 Family Primary Health Care: Children and Adolescents (4)**

Introduces the FNP role as related to the prevention, assessment, and management of infants, children, and adolescents with common chronic and acute illnesses. Emphasizes normal growth and development patterns, along with principles of anticipatory guidance and health promotion. Per week: theory 3 hours, clinical 3 hours.

Prerequisite: NRSG 652.

**NRSG 651 Advanced Physical Assessment (3)**

Reviews physical assessment skills and knowledge in depth to prepare the student to successfully conduct a complete history and physical throughout the patient's life span. Incorporates lecture, audiovisual aids, laboratory skills practicum, and individual study. Per week: theory 2 hours, practicum 3 hours.

**NRSG 652 Family Primary Health Care I (5)**

Introduces the role, professional responsibilities, and clinical practice of the family nurse practitioner (FNP). Focuses on primary health care concepts related to

prevention, health maintenance, and promotion of optimal wellness of the individual and family, with emphasis on women's health and the aging adult. Per week: theory 3 hours, practicum 6 hours.

Prerequisite NRSNG 555, NRSNG 556; NRSNG 651; PHSL 588.

#### NRSNG 653 Family Primary Health Care II (6)

Further develops the FNP role of prevention, assessment, and management of patients with common chronic and acute illness across the life span.

Emphasizes health promotion and lifestyle education.

Per week: theory 3 hours, practicum 9 hours.

Prerequisite: NRSNG 652.

#### NRSNG 654 Family Primary Health Care III (7)

Continues development of the FNP role of prevention, assessment, and management of patients with acute illness and chronic conditions of selected body systems. Emphasizes health promotion. Per week: theory 3 hours, practicum 12 hours.

Prerequisite: NRSNG 653

#### NRSNG 655 Family Primary Health Care IV (7)

Continues to develop the FNP role of prevention, assessment, and management of patients with more complex acute and chronic conditions, including mental health and behavioral issues. Emphasizes health promotion. Per week: theory 3 hours, practicum 12 hours.

Prerequisite: NRSNG 654

#### NRSNG 656 Family Primary Health Care V (7)

Focuses on incorporation and integration of learning from all prior primary health care courses and clinical experiences. Final clinical practicum with opportunity to develop autonomy while working with preceptors in primary care settings. Includes end-of-program information and on-line certification practice testing.

Per week: theory 0 hours, practicum 21 hours.

Prerequisite: NRSNG 655.

#### NRSNG 660 Advanced Qualitative Research Methods (4)

Advanced course in qualitative research methods.

Emphasizes selected qualitative and mixed research

methodologies specific to social, clinical, and health services research. Topics covered include theoretical bases for conducting qualitative research; research design; data gathering, including interviewing, observation, archival and historical research, and data analysis and writing. Introduces various approaches for integrating qualitative and quantitative methodologies.

#### NRSNG 664 Nursing Science Seminar (1)

Nursing phenomena. Focus varies according to national emphases in nursing research and focus areas of participants. Emphasizes critical examination of conceptual, theoretical, and methodological issues relative to the selective topic.

Prerequisite: Doctoral standing or consent of instructor.

#### NRSNG 680 Intermediate Statistics (3)

Applies selection and application of statistical procedures to nursing science and practice. Selects topics in ANOVA, multiple regression, and other multivariate statistical procedures. Interprets computer output.

#### NRSNG 684 Research Methods (4)

Guides the student in understanding scientific thinking and research methods beyond the introductory level. Focuses on the use of research in support of evidence-based practice appropriate to the advanced practice nurse role. Emphasizes critical analysis and synthesis of existing research, as well as application of study designs and methods that support data-based decisions.

Prerequisite: NRSNG 517; NRSNG 680 or equivalent

**NRSG 686 Advanced Quantitative Research Methods (4)**

Examines advanced quantitative research methods applicable to advancing and developing nursing science. Topics range from the formulation of research problems and questions to discussing and identifying complex designs and methods. Guides the student in development of a quantitative research proposal that focuses on an area of study that may serve as the initial step in conducting independent dissertation research.

Prerequisite: Minimum of one doctoral-level statistics course, or equivalent.

**NRSG 693 Experience Portfolio (1-16)**

Portfolio preparation documents nurse practitioner educational program, including the clinical practice component.

Prerequisite: Certified nurse practitioner with current nurse practitioner practice of at least two years; at least five years of postbaccalaureate nurse practitioner practice experience.

**NRSG 696 Mentored Research (2)**

Student participates in the research process or engages in research activities guided by mentors. Experience contributes to ongoing development of the student's knowledge in research planning, design conduct, analysis, or dissemination. Research activity may continue beyond one quarter (IP eligible).

Acceptance into the Ph.D. degree program in nursing.

**NRSG 697 Research (1-4)****NATURAL SCIENCES****NSCI 124 Rocky Mountain Field Geology (2, 3)**

Introduces basic principles of geology, with specific studies of field sites in the Rocky Mountains. Two units for the field course, with a third, optional unit of credit for additional academic work to be assigned. Upper-division college students or teachers should register for GEOL 325. Summer only.

**NSCI 125 Biology of Birds (0)**

Introduces the natural history of birds, along with their field identification and ecology. Emphasizes local

species in lectures and in the field. Focuses on identifying species and on learning techniques of study. Three Sunday field trips.

**NSCI 126 Biology of Reptiles (3)**

Introduces the natural history of reptiles: their identification, morphology, physiology, behavior, and ecology. Describes all recognized orders and emphasizes local species in lecture and in the field.

Focuses on identifying species and on learning techniques of study in both the field and laboratory.

Three Sunday field trips.

**NSCI 127 Rocks and Minerals (3)**

Introductory course on the identification, composition, structure, and origin of rocks and minerals. All of the mineral classes and major rock types covered in a lecture and laboratory setting, with field trips to local collecting sites.

**NSCI 205 Introduction to Field Tropical Marine Biology (3)**

Introduces nonscience majors to the organisms and ecology of tropical marine systems, with special emphasis on the organisms that live in and among coral reefs. Surveys tropical marine taxa—from algae to pelagic and benthic marine invertebrates. Provides a brief overview of coral reef ecology that introduces students to basic food webs and trophic relationships. Weekly classroom lectures. Students synthesize information gained from the literature in two written reports, one focused on an organism of choice and the other on a marine process.

**NSCI 234 Science and the Study of Origins (3, 4)**

Studies biological and geological issues related to origins. Analyzes data and its implications for various models of earth history. Discusses nature and limits of the scientific process in the study of origins. Three-to-four class hours per week.

**NSCI 235 Dinosaur Biology and Fossil Record (3, 4)**

Overview of the dinosaur fossil record and analysis of dinosaur behavior, physiology, and ecology by

comparison of dinosaur fossil evidence and living animals. Reviews current theories on dinosaur extinction.

#### NSCI 236 Faith, Family, and Nature (3)

Studies natural history, with emphasis on behavior and ecology of southern California flora and fauna. Special feature: developing skills of field observation in the setting of family and intergenerational communication. Lectures emphasize themes of design in nature. Three Sunday field trips.

#### NSCI 239 Introduction to Marine Life (3)

Introduces marine life and intertidal ecology of the Pacific coast for the nonscientist. Discusses oceanography, waves and tides, the deep sea, intertidal ecology, and the types of plants and animals found in the local intertidal and near-shore environment. Three Sunday field trips.

#### NSCI 241 The Natural History of Fossils (3, 4)

Introduces fossils: their preservation, ecology, and occurrence in the geologic record. Invertebrate, vertebrate, and plant fossils from a variety of localities worldwide.

#### NSCI 286 Topics in Biology (1-4)

Reviews current knowledge in specified areas of the biological sciences. Registration should indicate the specific topic to be studied. May be repeated for additional credit. Offered on demand.

#### NSCI 287 Topics in Ecology (2-4)

A customized course for students to study various aspects of ecology, such as the ecology of a specific region or a specialized taxonomic group. Significant field experience normally required. Registration should indicate the specific topic to be studied. May be repeated for additional credit. Offered on demand.

#### NSCI 288 Topics in Geology (1-4)

Reviews current knowledge in specified areas of the earth sciences. Registration should indicate the specific topic to be studied. May be repeated for additional credit. Offered on demand.

#### NSCI 289 Field Tropical Marine Biology Laboratory (4)

Provides opportunities for students to directly experience various tropical marine habitats. Encourages students to spend as much time in the water as possible, both during the day and at night. When not in the water, students required to be engaged in independent study to accumulate and synthesize current knowledge for developing species lists or testing basic hypotheses regarding marine organisms. Formal and informal tutorial, as well as lecture sessions. Taught in conjunction with both NSCI 205 and NSCI 286. Final written assignment due at an appropriate time subsequent to the laboratory experience.

#### NSCI 370 Geology and Health (3)

Emphasizes newly appreciated relations between geologic processes and health. Categorizes geologic processes affecting health by their effects over long (e.g., climate), medium (e.g., toxins in soils), and short (e.g., geohazards) time scales; and also by their actions in both physical and chemical domains. Provides an overview of particular aspects of geology.

#### NSCI 386 Biology of Marine Life (0)

Examines marine organisms in depth, with emphasis on higher invertebrates and vertebrates around the world. Study of marine environments provides opportunities to understand some of the theoretical principles of general ecology. Presentations and specific readings combined with a final field trip and written reports. Requires an understanding of basic oceanography as taught in NSCI 239.

## NUTRITION

#### NUTR 474 Nutrition and Fitness (3)

Basic principles of nutrition and healthful eating for fitness and exercise. Role of nutrition and exercise in optimizing health from a scientific standpoint. Myths prevalent among consumers in the area of nutrition and fitness.

**NUTR 490 Topics in Foods and Food Preparation (1)**

On-line course provides an introduction to foods and food preparation. Includes relationship of food composition to food preparation, cultural and ethnic food patterns, sensory evaluation of food, and culinary techniques.

**NUTR 504 Nutritional Metabolism (5)**

Studies the static and dynamic aspects of the metabolism of carbohydrates, lipids, amino acids, proteins, nucleic acids, enzymes, hormones, vitamins, and minerals in the normal healthy human.

**NUTR 505 Public Health Biology (2)**

Integrates molecular and biological approaches to public health problems. Explores the interactions between genetic expressions; the environmental factors, particularly those related to lifestyle; and the development and aging process as it applies to the biology of public health. Special lecture modules address: role of immune systems in population health, including infectious diseases and vaccines; role of biology in the ecological model of population-based health; how genomics, proteomics, and metabolomics affect disease processes; the biological and molecular characteristics of chronic diseases; and the origin and dissemination of drug resistance. Includes specific examples from across the different disciplines of public health to explain these concepts in public health biology.

**NUTR 509 Public Health Nutrition and Biology (3)**

Introduces the concepts of nutrition and biology as related to public health. Includes life-cycle issues and discussion of major nutrition-related diseases and their prevention. Integrates molecular and biological approaches to public health problems; and addresses the role of nutritional assessment, intervention, and policy to solve public health issues.

**NUTR 510 Advanced Public Health Nutrition (3)**

Advances in public health nutrition and the science base for application to the prevention of disease in the community. Includes nutritional guidelines, policies,

monitoring systems, efficacious interventions throughout the life cycle, and interactions between genetic and nutritional factors.

NUTR 504 or equivalent.

**NUTR 517 Advanced Nutrition I: Carbohydrates and Lipids (4)**

Advanced study of the nutrition, metabolism, and function of carbohydrates and lipids as related to health and disease.

Prerequisite: NUTR 504; or biochemistry equivalent; or consent of instructor.

**NUTR 518 Advanced Nutrition II: Proteins, Vitamins, and Minerals (4)**

Advanced study of the nutrition, metabolism, and function of proteins, vitamins, and minerals as related to health and disease.

**NUTR 519 Phytochemicals (2)**

Discusses the role of phytochemicals in disease prevention and treatment. Reviews current research in this area.

**NUTR 525 Nutrition Policy, Programs, and Services (3)**

Develops professional skills in management of nutrition programs. Includes legislative advocacy and analysis of current nutrition programs at local, state, and federal levels. Laboratory.

**NUTR 526 Nutrition Counseling and Education (2)**

Counseling skills, specifically counseling one-on-one and groups, in order to facilitate changes in nutrition status. Teaching/learning styles, development of therapeutic relationships with patients/clients, and development of listening skills. Case-study evaluation, nutrition-counseling guides, and development of group-education lesson plans.

**NUTR 527 Assessment of Nutritional Status (3)**

Techniques of individual nutrition assessment: dietary intake and evaluation, use of computer software (1 unit); anthropometric, clinical, and biochemical

methodologies (1 unit); principles and practice in nutrition counseling in a supervised community setting (1 unit). Laboratory or practicum included in each unit.

### NUTR 528 Symposium: Adventist Philosophy of Nutrition (1)

The science of nutrition as related to the Seventh-day Adventist philosophy of health.

### NUTR 529 Health Aspects of Vegetarian Eating (2, 3)

Introduces concepts of vegetarian nutrition as related to health and longevity. Addresses nutritional adequacy, as well as the benefits of vegetarian eating related to the prevention of major chronic diseases, such as heart disease, cancer, obesity, diabetes, and osteoporosis. Covers the interplay between the risks and benefits of vegetarian eating. Students taking course for 3 units either prepare a term paper or develop a vegetarian nutrition program.

### NUTR 531 Community Nutrition Intervention I (2)

Provides training and practice identifying/assessing community health issues. Students collaborate with local associations and faculty advisers to analyze a public health issue and evaluate intervention alternatives using an asset-based, problem-solving approach.

### NUTR 532 Community Nutrition Intervention II (1)

Focuses on implementation and evaluation strategies to address a community health issue that was identified and analyzed in NUTR 531.

### NUTR 534 Maternal and Child Nutrition (3)

Advanced study of the role of nutrition in human growth and development during the prenatal period, lactation, infancy, and childhood.

### NUTR 535 Research Applications in Nutrition (3)

Overview of research methods in nutrition. Provides an understanding of foundational issues of research design from both the quantitative and qualitative

perspectives, as well as understanding of the sequence of procedures in proposal development. Laboratory included.

### NUTR 536 Nutrition and Aging (2)

Effect of nutrition on aging and chronic degenerative diseases, and their effects on nutritional status. Geriatric nutrition screening and assessment. Anorexia of aging. Nutrition support, supplement use, and services for older Americans.

Prerequisite: Basic nutrition or consent of instructor.

### NUTR 537 Nutrition Education Practicum (1)

Experiential course that applies medical nutrition therapy in the assessment and counseling of individuals and groups across the life cycle in an outpatient setting. Includes training in counseling, educational materials development, and cultural sensitivity. Includes at least forty hours of dietetic practice. May be repeated for additional credit.

Prerequisite: HPRO 509.

### NUTR 537A Community Nutrition Education Projects (1)

Provides training and practice in community nutrition-education skills, especially community assessment, teaching, social marketing, program evaluation, and the use of media. Includes at least forty hours of dietetic practice.

### NUTR 537B Nutrition Education Practicum (1)

Experiential course that applies medical nutrition therapy in the assessment and counseling of individuals and groups across the life cycle in an outpatient setting. Includes training in counseling, educational materials development, and cultural sensitivity. Includes at least forty hours of dietetic practice. May be repeated for additional credit.

### NUTR 538 Principles of Effective Nutrition Education (3)

Teaching methods appropriate to the nutrition educator. Definition of an effective teacher. Learning environment, lesson design, and use of teaching models. Strategies to improve student motivation and

the retention of information. Evaluation of learning outcomes. Laboratory included. Includes thirty hours of dietetic practice.

#### NUTR 539 Research Methods in Nutrition (2)

Discusses the steps in the research process as they relate to clinical nutrition investigation. Validity of biological parameters and dietary intake measurements, study design, subject selection, and ethical issues

Prerequisite: STAT 509 or STAT 521; or equivalent.

#### NUTR 543 Concepts in Nutritional Epidemiology (3)

Prepares students to conduct research relating diet to health/disease outcomes. Reviews methodological issues related to dietary assessment for clinical/metabolic and epidemiological research. Topics include variation in diet, measurement error and correction for its effects, advantages and limitations of different diet assessment techniques, design and development of a food frequency instrument, total energy intake in analyses.

#### NUTR 545 Clinical Nutrition I (3)

Medical nutrition therapy and care for a variety of clinical disorders with nutritional implications.

Laboratory included.

Prerequisite: NUTR 527; or equivalent.

#### NUTR 546 Clinical Nutrition II (3)

Continues medical nutrition therapy for a variety of clinical disorders with nutritional implications: renal disease, chronic obstructive pulmonary disease, inborn errors of metabolism, AIDS, pancreatitis, care of the critically ill and/or obese patient. Includes forty-five practicum hours.

Prerequisite: NUTR 545.

#### NUTR 554 Critical-Care Nutrition I (3)

Current issues related to the nutritional needs of patients with diabetes, heart disease, and renal disease. Drug-nutrient interactions, laboratory values, treatment modalities; and their effect on nutrition in the critical care of these patients. Counseling strategies for each.

Laboratory included.

Prerequisite: RD, RD eligible with appropriate experience, M.D.; or consent of instructor.

#### NUTR 555 Critical Care Nutrition II (3)

Current issues related to the nutritional needs of preterm neonate, transplant, oncology, AIDS, and COPD patients. Enteral/parenteral feeding products and their administration. Counseling strategies for the client and/or caregiver in each instance. Laboratory included.

Prerequisite: RD, RD eligible with appropriate experience, M.D.; or consent of instructor.

#### NUTR 556 Nutritional Applications in Lifestyle Intervention (1)

Provides students with practical experience and training in applying nutritional assessment and counseling skills to address lifestyle interventions. Reviews current dietary practice guidelines and pertinent food components relative to their health effects. Includes hands-on training in skills, tools, and strategies for effective nutrition counseling.

#### NUTR 564 Contemporary Issues of Vegetarian Diets (2, 3)

Introduces contemporary issues and controversies related to vegetarian diets. Presents background information on the history and rationale of vegetarian diets, ecologic and environmental issues, health benefits and risks of the vegetarian lifestyle. A major paper on one of the vegetarian topics required for 3 units.

#### NUTR 565 Ethnic Food Practices (2)

Introduces major ethnic and religious food practices in the United States. Cultural background and other data for the purpose of preparing health professionals to serve their clients in a culturally sensitive manner.

**NUTR 577 Nutrition Care Management (3)**

Translates institutional mission into goals, objectives, and standards of care. Applies operations analysis, financial management, quantitative decision making, and productivity management techniques to enhance the delivery of nutrition care. Ethical and legal behavior. Staff recruitment, selection, development, and retention. Develops quality assurance indicators. Skills in managing the human and technological resources available to the registered dietitian.

**NUTR 578 Exercise Nutrition (2, 3)**

Nutritional needs of professional and recreational athletes. The role of macro- and micronutrients as ergogenic aids. Presents overview of current research in the areas of exercise nutrition. Additional unit assignment available for doctoral students with instructor direction.

**NUTR 585 Topics in Global Nutrition (3)**

Discussion of current issues of importance in international nutrition.

**NUTR 586 Mediterranean Diet: Nutrition, Cuisine, and Culture (3, 4)**

An off-campus, experiential course that provides theoretical and practical training in the cuisine, nutrition, and health aspects of Mediterranean-style vegetarian diets. Students explore the impact of vegetarian diets on nutritional status, chronic disease, and longevity. Includes visits to agricultural and culinary food production and food consumption sites. Formal lectures held at a major European university. Includes formal lectures, practicum, and field work. Additional project required for fourth unit.

**NUTR 595 Special Topics in Nutrition (1-4)**

Current topics in nutrition. May be repeated for additional credit.

**NUTR 597 Special Topics in Clinical Nutrition (1-3)**

Current topics in clinical nutrition. May be repeated for additional credit.

**NUTR 605 Seminar in Nutrition (1)**

Explores current major issues in nutrition. Students choose and research a topic or problem and discuss their findings in class. Written report required. May be repeated for additional credit.

Prerequisite: Five graduate units in nutrition; or consent of instructor.

**NUTR 608 Doctoral Seminar in Public Health Nutrition (1-3)**

Enhances skills relative to scientific literature review, critical thinking, scientific discussion with peers, presentation using advanced audiovisual aids, writing review paper and abstract as per peer-reviewed journal requirements. Maximal interaction with faculty, peers, and visiting nutritional professionals. Limited to doctoral degree students in nutrition. May be repeated for additional credit.

**NUTR 678 Advanced Exercise Nutrition (3)**

Discusses current research in the field of exercise nutrition; nutritional needs of professional and recreational athletes; and the role of macro- and micronutrients as ergogenic aids. Requires a presentation and a term paper on a current research topic in exercise nutrition. Limited to doctoral students. Instructor approval required for master's degree students.

**NUTR 685 Preliminary Research Experience (2)**

Experience in various aspects of research under the guidance of a faculty member and by participation in an ongoing project. Must be completed prior to beginning dissertation/research project. Limited to doctoral degree students.

**NUTR 692 Research Consultation (1-4)**

Individual advice on project design and on data collection, analysis, and evaluation. Restricted to School of Public Health students and staff.

**NUTR 694 Research (1-12)**

Independent research for doctoral degree candidates and qualified master's degree students on problems currently being studied in the department, or in other department(s) with which they collaborate. Research

program arranged with faculty member(s) involved.  
Minimum of 100 hours required for each unit of credit.  
Written report required.

#### NUTR 695 Thesis (2)

Student prepares report of individual, guided experimental-research study in nutrition, under direct faculty supervision. Limited to graduate students whose thesis project has been approved by their research committee.

#### NUTR 696 Directed Study/Special Project (1-4)

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include readings, literature reviews, or other special projects. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable to any master's degree program.

#### NUTR 698 Dissertation (1-14)

Student prepares manuscript presenting results of doctoral research study. Limited to doctoral degree students

#### NUTR 699 Applied Research (2)

Assignment to private, government, or international voluntary health agency, hospital, or other school-approved organization where practical application of the materials studied on campus is made, under the guidance of the department faculty and of the organization involved. Research project that includes substantial analysis of data and discussion of results. Written report and oral presentation required.

Prerequisite: Consent of department advisor and of instructors responsible for supervision.

#### NUTR 798B Field Practicum (6)

Assignment to private, government, or international voluntary health agency, hospital, or other school-approved organization where practical application of the materials studied on campus is made, under the guidance of the department faculty and of the organization involved. May consist of a research project. Meets the dietetic practice hours of the Graduate Coordinated Program in Public Health Nutrition and Dietetics. May be repeated for additional credit.

Prerequisite: Approval of academic variance needed if practicum begins before completion of comprehensive examinations.

#### NUTR 798D Field Practicum (12)

Assignment to hospital or other School of Public Health-approved organization where practical application of the materials studied regarding food service and medical nutrition therapy is made under the guidance of department faculty and the organization involved. Intended to meet the dietetic practice hours of the Graduate Coordinated Program in Public Health Nutrition and Dietetics. May be repeated for additional credit.

#### NUTR 799B Dietetic Practicum (6)

Assignment to hospital or other school-approved organization where practical application of the materials studied regarding food service and medical nutrition therapy is made under the guidance of department faculty and the organization involved. Intended to meet the dietetic practice hours of the Graduate Coordinated Program in Public Health Nutrition and Dietetics.

#### NUTR 799D Dietetic Practicum (12)

Assignment to hospital or other school-approved organization where practical application of the materials studied regarding food service and medical nutrition therapy is made under the guidance of department faculty and the organization involved. Intended to meet the dietetic practice hours of the Graduate Coordinated Program in Public Health Nutrition and Dietetics.

## OCCUPATIONAL THERAPY

### OCTH 301 Introduction to Occupational Therapy (2)

Defines occupational therapy from basic philosophical and historical perspectives. Describes uniqueness of the profession and various practice areas of occupational therapy. Explores the roles of the occupational therapist and describes professional organizations of occupational therapy. Examines the uniqueness of self in relation to professional development. Five weeks. Per week: lecture 4 hours, laboratory 2 hours.

### OCTH 305 Terminology for Occupational Therapy Practice (2)

Language of medicine, including word construction, word analysis, definitions, and the use of terms related to occupational therapy. Introduces components of medical charts and language of documentation for therapy services.

### OCTH 306 Group Dynamics and Intervention (2)

Introduces functional groups, theories, models, and dynamics; and group process and development. Provides opportunity for understanding and development of group membership and leadership through participation in the group experience. Applies knowledge and techniques of group process and interaction to achieve identified therapeutic goals. Per week: lecture 1 hour, group process 2 hours.

### OCTH 309 Human Occupation across the Lifespan (5)

Considers how occupation embedded in a diverse social-cultural context is shaped and changed through the human lifespan. Defines occupation in occupational therapy and occupational science, and examines it in historical relationship to human adaptation and health. Introduces and explores delineations among academic studies, theories, models, and frames of reference related to occupation as potential foundations influencing occupational therapy.

### OCTH 314 Task Analysis (2)

Emphasizes analysis of occupational performance. Identifies occupational profiles and patterns of occupation. Interactive acquisition and analysis of areas of occupation, performance skills, performance patterns, context, activities demands, and client factors. Per week: lecture 2 hours.

### OCTH 315 Therapeutic Media (2)

Analyzes and applies occupation-based media as they relate to client-centered interventions. Practice in the development of resources, teaching skills, observation techniques, and the therapeutic use of self. Continues application of activity-analysis techniques to identify the possible influences of activity demands in social, cultural, personal, and temporal contexts.

### OCTH 316 Design and Technology (2)

Supports development of basic competencies for assistive technology by examining and assessing theoretical and societal issues, population and policy trends, scientific advances, environmental constraints, funding opportunities, advocacy, and effective outcome evaluation. Case studies allow assistive technology evaluation, basic design, and resource coordination. Per week: 3 hours.

### OCTH 317 Occupational Therapy Practicum I (2)

Observation and supervised experience in clinical and/or community-based programs. Per quarter: 80 hours.

### OCTH 318 Occupational Therapy Practicum II (2)

Observation and supervised experience in clinical and/or community-based programs. Per quarter: 80 hours.

### OCTH 321 Intervention Techniques and Strategies I (2)

Introduces treatment of performance areas within the temporal and environmental contexts. Emphasizes safety issues and hands-on performance of techniques as they relate to solving problems for specific classifications of dysfunctions. Major topics include functional mobility and transfers, self-care skills,

assistive technology, joint protection and energy conservation, body mechanics, universal precautions, home management, and leisure activities. Per week: lecture 1 hour, laboratory 2 hours.

### OCTH 331 Functional Kinesiology (3)

Applies anatomical and mechanical fundamentals of human motion to the analysis of motor skills, including muscle testing and goniometry. Emphasizes the upper extremities. Per week: lecture 2 hours, laboratory 2 hours.

Prerequisite: AHCJ 412.

### OCTH 341 Functional Neuroscience (3)

Fundamentals of neuroscience, as related to occupational therapy practice—including basic anatomy and function of the central and peripheral nervous system, common clinical manifestations of neurologic dysfunction, and occupational performance impact on the individual with neurologic dysfunction.

Prerequisite: AHCJ 412.

### OCTH 411 Introduction to Occupational Therapy Research (2)

Critically analyzes evidence-based research and qualitative studies. Introduces various approaches to questioning professional practice outcomes.

### OCTH 417 Occupational Therapy Practicum III (2)

Observation and supervised experience in clinical and/or community-based programs. Per quarter: 80 hours.

Prerequisite: OCTH 317, OCTH 318.

### OCTH 431 Intervention Techniques and Strategies II (3)

Introduces the intervention process, using specific occupational therapy theory and frames of reference applied to various populations. Emphasizes sensorimotor integration and neurodevelopmental approaches using case studies. Per week: lecture 2 hours, laboratory 3 hours.

### OCTH 435 Upper-Extremity Rehabilitation and Splinting (3)

Introduces hand rehabilitation and uniqueness of the occupational therapy approach—including anatomical review of the upper extremity, etiology of common hand diseases and trauma-tissue healing, evaluation of the hand, intervention planning, outcome measures, advanced certification, and relevant California laws. Laboratory includes current concepts in the design and fabrication of upper-extremity orthotics and custom-made assistive devices for the hand. Emphasizes use of low-temperature thermoplastics and alternative splinting materials. Per week: lecture 2 hours, laboratory 2 hours.

Prerequisite: OCTH 451, OCTH 452, OCTH 453.

### OCTH 441 Fundamentals of Case Management (4)

Introduces application of critical-reasoning process, effective communication, documentation, and overall professional skill building. Applies case management skills, evaluation, assessment, intervention planning, implementation, re-evaluation, and termination, when appropriate.

### OCTH 442 Case Analysis, Reasoning, and Management I (2)

Introduces application of critical-reasoning process; effective communication skills with clients, patients, families, and team members. Documentation and overall professional skill building.

Prerequisite: OCTH 451.

### OCTH 443 Case Analysis, Reasoning, and Management II (2)

Continues case management process as a means of addressing questions of importance to occupational therapy practice through theoretical perspectives. Applies case management skills, evaluation, intervention planning, implementation, re-evaluation, and termination, when appropriate. Emphasizes critical reasoning through clinically based case presentations. Per week: seminar/discussion 2 hours.

Prerequisite: OCTH 442, OCTH 451, OCTH 452.

### OCTH 451 Disorders of Human Performance I (5)

Presents overview of the etiology, clinical course, evaluation, management, and prognosis of congenital, developmental, acute, and chronic disease processes; and of traumatic injuries. Includes problems associated with individuals and families having difficulty with social-cultural expectations. Emphasizes the effect of such conditions on human occupational performance across the lifespan.

Prerequisite: OCTH 309, OCTH 341.

### OCTH 452 Disorders of Human Performance II (5)

Continues overview of etiology, clinical course, evaluation, management, and prognosis of congenital, developmental, acute, and chronic disease processes; and of traumatic injuries. Includes problems associated with individuals and families having difficulty with social-cultural expectations. Effect of such conditions on human occupational performance across the lifespan.

Prerequisite: OCTH 331, OCTH 451.

### OCTH 453 Disorders of Human Performance III (4)

Continues overview of etiology, clinical course, evaluation, management, and prognosis of congenital, developmental, acute, and chronic-disease processes; and of traumatic injuries. Includes problems associated with individuals and families having difficulty with social-cultural expectations. Effect of such conditions on human occupational performance across the lifespan.

Prerequisite: OCTH 452.

### OCTH 455 Case Analysis, Reasoning, and Management III (3)

Continuation of case management process as a means of addressing questions of importance to occupational therapy practice through theoretical perspectives. Application of case management skills, evaluation, intervention planning, implementation, re-evaluation, and termination when appropriate. Emphasizes critical reasoning through community-based case practice.

Prerequisite: OCTH 442, OCTH 443, OCTH 451.

### OCTH 456 Community Practice (4)

Evaluates program effectiveness in providing tools to assess, plan, and implement treatment; make referrals; and discontinue occupational therapy services. Develops critical-reasoning skills. Includes supervised fieldwork experience. Emphasizes professional portfolio and transition to entry-level occupational therapy practitioner.

### OCTH 491 Fieldwork Experience I (12)

Supervised fieldwork experience in clinical and/or community-based programs. Emphasizes assessment, planning, treatment, problem solving, administration, and professionalism. Successful completion necessary before student is eligible to take the certification examination (480 clock hours each).

### OCTH 499 Occupational Therapy Independent Study (1-4)

Student submits a project or paper on a topic of current interest in an area related to occupational therapy. Regular meetings to provide the student with guidance and evaluation. Elected on the basis of need or interest.

### OCTH 526 Business Topics in Health Care (2, 3)

Introduces business for occupational therapy practitioners—including financial statements and budgetary processes, marketing, management, and consultation. Emphasizes use of strategic planning for decision-making processes of program development, productivity, and accountability. Major paper and presentation required for the additional unit.

### OCTH 533 Advanced Fieldwork Experience (1-12)

Advanced fieldwork experience in selected areas of professional practice. Completion of the agreed-upon clock hours required to receive a grade.

### OCTH 541 Current Trends in Occupational Therapy Practice I (3)

Analyzes current trends in the field of occupational therapy. Includes health care economics, health care

administration, legal and regulatory issues, professional responsibilities, political and professional trends, and advocacy.

Prerequisite: Senior standing.

#### OCTH 542 Current Trends in Occupational Therapy Practice II (3)

Explores new and future developments in occupational therapy and health care. Addresses issues of social-political involvement, advocacy, alternate employment possibilities, and management; health care systems, including international occupational therapy perspectives.

#### OCTH 544 Advanced Occupational Therapy History (3)

Provides the student with an extensive understanding of the history of occupational therapy by critically reviewing historical incidents, the history of occupational therapy and societal theories and practices, political conditions, and historical incidents. Facilitates the student's ability to enact advocacy and to better understand future projections in the field.

#### OCTH 551 Occupation and Wellness (3)

Provides the student with an understanding of the connections among occupation, occupational therapy practice, and wellness by critically investigating research and theoretical perspectives. Leads to a better understanding of the uniqueness of an occupational perspective of health and its relationship to daily living.

#### OCTH 552 Professional Transition (3)

Provides the student with an opportunity to explore a variety of topics relevant to transitioning into occupational therapy professional practice.

#### OCTH 561 Program Development/Design I (3)

Focuses on selection, research, and design of programs pertinent to occupational therapy practice.

#### OCTH 562 Program Development/Design II (3)

Implements program planning, culminating with program evaluation and outcome assessment.

Prerequisite: OCTH 561.

#### OCTH 563 Professional Competency Development I (1)

Student pursues an area of special interest under the direction of the faculty advisor. Topic must be approved by the occupational therapy department.

#### OCTH 564 Professional Competency Development II (1)

Student continues development of the special interest topic, identifying resources and observation sources. Progress report and regular meetings with faculty advisor required.

Prerequisite: OCTH 563.

#### OCTH 565 Professional Competency Development III (1)

Student completes the special interest topic and prepares to make an oral presentation.

Prerequisite: OCTH 563, OCTH 564.

#### OCTH 571 Research I (3)

Student develops and implements a scholarly research proposal by systematically identifying and investigating a problem, issue, or question of relevance to occupational therapy practice. Emphasizes writing skills in preparation of literature review, purpose, conceptual framework, proposed methodology, and data analysis.

Prerequisite: AHCJ 471, AHCJ 472.

#### OCTH 572 Research II (2)

Student develops and implements a scholarly research project. Focuses on seeking Institutional Review Board approval and initiating data-gathering and preliminary analysis of findings.

#### OCTH 573 Research III (2)

Student develops and implements a scholarly research project. Emphasizes analysis of data and presentation of findings in a research colloquium.

Prerequisite: OCTH 572.

#### OCTH 591 Fieldwork Experience II (12)

A twelve-week (40 hours/week) supervised fieldwork experience in clinical and/or community-based programs. Emphasizes assessment, planning, treatment,

problem solving, administration, and professionalism. Successful completion necessary before student is eligible to take the certification examination.

### OCTH 598 Occupational Therapy Advanced Specialty Tracks (1-3)

Presents in-depth practice application in an area of occupational therapy. Opportunity to pursue various topics related to current trends. Develops advanced clinical skills, where appropriate.

### OCTH 600 Occupational Science (3)

Explores occupational science as an academic discipline. Uses foundational traditions and theoretical perspectives to analyze and understand the experience and action of occupation. Applies concepts of occupational science to current practice issues.

### OCTH 601 Spirit of Diverse Abilities I (3)

Examines perspectives in order to view and understand the disability experience and the role of spirituality and occupational justice in practice. Emphasizes theoretical approaches. Discusses role of occupational therapy in social justice.

### OCTH 602 Spirit of Diverse Abilities II (3)

Explores and discusses the experience of disability and occupational injustice. Explores and applies these concepts in relation to the profession of occupational therapy and the greater society. Students explore issues such as homelessness, diversity, disparity, and ethics.

Prerequisite: OCTH 601.

### OCTH 604 Health, Society, and Participation (3)

Incorporates health and participation to integrate the individual, community, and greater society. Students engage in grant searching and grant writing. Discusses logic models and program. Emphasizes participatory research; program development; needs assessment; healing environments; social justice issues; global issues; World Health Organization; International Classification of Functioning, Disability and Health; AIDS; culture; and mission work in relation to the profession of occupational therapy.

### OCTH 605 Education in Occupational Therapy (3)

Explores the philosophical foundations of knowledge and learning theory. Prepares occupational therapists for the roles and expectations of occupational therapy education in academic and practice settings. Discusses instructional design, media, student assessment, teaching skills, course development, mentoring, and curriculum design.

### OCTH 606 Leadership in Occupational Therapy (3)

Explores leadership theory, administrative characteristics and strategies, professionalism, team facilitation, clinical reasoning, ethics, and advocacy. Students participate in legislative process and analyze international issues and social justice in relation to occupational therapy practice and the future of the profession.

### OCTH 611 Research I: Proposal Writing (4)

Online interactive course work precedes and follows on-site intensive. Student develops individual research proposal, completes Institutional Review Board (IRB) training, successfully submits proposal to the IRB. Emphasizes reflective discussions of research interests and experiences, planning, conceptual framework, proposed methodology, and data analysis. Students engage in peer reviews throughout course.

### OCTH 614 Research and Professional Rotation II (5)

Continues the research project and professional rotation. Students complete a needs assessment and program development. Data collection, data management techniques, and introduction to various data analysis strategies.

Prerequisite: OCTH 611.

### OCTH 621 Professional Rotation Planning (2)

Students design their professional rotation with guidance from the primary course instructor. Emphasize identification of a focus area, objectives, goals, outcomes, on-site mentor, faculty mentor, and timeframe.

**OCTH 622 Professional Rotation Proposal (1)**

Development of a proposal submitted to the doctoral committee for final approval.

Prerequisite: OCTH 621.

**OCTH 623 Professional Rotation I (4)**

Implements professional rotation approved in OCTH 622. Critical discussion of experiences and problem solving with classmates.

Prerequisite: OCTH 622.

**OCTH 625 Professional Rotation III (4)**

Completes clinical aspects of professional rotation. Initiates preparation of a manuscript and participation in online critical discussions with classmates.

**OCTH 627 Professional Publication and Dissemination (5)**

A culmination course in which students reflect on their rotation experiences and finalize their program development. Students complete data analysis and prepare and complete their manuscript. Critical discussion with peers regarding knowledge transference to impact individuals, society, the profession, and clinical practice.

Prerequisite: OCTH 611.

**OCTH 699 Directed Study (2, 3)**

Student pursues an area of special interest under the direction of the faculty advisor. Topic must be approved by the occupational therapy department.

**ORAL DIAGNOSIS, RADIOLOGY AND PATHOLOGY****ODRP 311 General and Oral Pathology DH (5)**

Basic disease processes and selected organ system diseases. Discusses common and important oral mucosal, soft tissue, and jaw lesions. Emphasizes early recognition and differential diagnosis.

**ODRP 501 Principles of Microbiology DN (4)**

Fundamentals of general and oral microbiology and the principles of infection and treatment supported by current research data. Discusses bacterial, viral, and fungal diseases pathogenic to humans in the context of

the immunological basis of the host/pathogen relationship. Emphasizes organisms relevant to dentistry, as well as causative agents of dental disease. Studies and evaluates specific aspects of infection control, sterilization and disinfection, and the significance of dental disease.

**ODRP 701 Radiology I: Clinical Procedures (1.5)**

Techniques for producing intraoral and extraoral radiographs and digital images, including film and digital image processing, radiation protection and safety, and infection control. Covers viewing of radiographic and digital images; and technique, handling, and darkroom errors.

**ODRP 725 Patient Assessment and Data Management (3)**

Introduces medical history evaluation, data collection, and the patient-examination process. Teaches students to work up each dental problem and incorporate everything into an integrated treatment plan. Supervised clinical experience with fellow students as patients. Student develops treatment plan and presents it to the patients and instructors. Introduces computer-based treatment plan management.

Prerequisite: ODRP 751.

**ODRP 726 Patient Diagnosis and Treatment Planning (1.5)**

Students work on virtual patients in axiUm. Case-based, small-group, treatment-planning exercises. Introduces consent forms, a step-by-step comprehensive examination process, when to do a periodic examination or limited treatment and treatment plan presentation to the patient.

**ODRP 735 Dental Emergency Diagnosis and Treatment (1)**

Diagnosis and management of dental emergencies, including caries control, endodontic and prosthodontic emergencies, substance abuse, hard- and soft-tissue trauma, forensic issues and dealing with difficult patients.

**ODRP 751 General and Systemic Pathology I (4)**

Studies basic disease mechanisms and disease processes, including host responses to pathogens and injury, repair, immune disorders, hemodynamic disorders, neoplasia and genetic disorders. Begins the study of disease processes of the organs and systems with emphasis on etiology and pathogenesis, epidemiology, disease manifestations, and major treatment modalities.

**ODRP 752 General and Systemic Pathology II (4)**

Continues study of disease processes of the various organs and systems. Emphasizes etiology and pathogenesis, epidemiology, morphologic and clinical disease manifestations, and major treatment modalities.

Prerequisite: ODRP 751.

**ODRP 755 Radiology II: Theory and Interpretation (2)**

Radiation physics and biology. Interpretation of intraoral and extraoral images—including appearance of hard- and soft-tissue anatomy, restorative materials and abnormalities of teeth, dental caries, periodontal disease, periapical disease, and other jaw pathology. Covers patient selection criteria, legal considerations, and quality assurance. Introduces cone beam computed tomography.

**ODRP 761 Oral Pathology and Diagnosis (6)**

Studies oral mucosal and soft-tissue lesions, developmental and genetic disorders, jaw lesions, salivary gland disorders, oral manifestations of systemic diseases, and some diseases of the skin and head and neck. Includes epidemiology, etiology, clinical and/or radiographic features, microscopic features, and management of disease, emphasizing differential diagnosis.

**ODRP 807 Oral Medicine I: TMJ/Orofacial Pain I (1)**

Introduces diagnosis and treatment of temporomandibular joint disorders (TMD). Teaches anatomy, pathology, and diagnostic imaging of the temporomandibular joint. Presents clinical features and mechanisms of masticatory muscle pain, disc disorders, occlusal disorders, and arthritis of the TMJ. Includes

patient cases focusing on these disorders. Student learns how to perform an orofacial pain examination and initial treatment for patients with temporomandibular joint disorders.

**ODRP 808 Oral Medicine II: Medically Compromised Patient (2)**

Signs, symptoms, laboratory tests, medical management, and suggested dental modifications for patients with medical problems of the respiratory, cardiovascular, neurologic, genitourinary, hematopoietic, and endocrine systems.

**ODRP 811 Oral Medicine III: TMJ/Orofacial Pain II (1)**

Advanced topics on temporomandibular joint disorders and orofacial pain. Introduces diagnosis and management of acute and chronic orofacial pain conditions, including neuropathic pain, headaches, and comorbid psychiatric disorders. Student learns to recognize, screen, and make appropriate referrals for chronic orofacial pain. Case presentations focus on nonodontogenic pain that presents as tooth pain.

**ODRP 821 Special Care Dentistry (1)**

Considers the dental treatment of special populations—including handicapped, medically compromised, or elderly patients.

**ODRP 825 Oral Diagnosis, Radiology, and Pathology Clinic (0.5-3)**

Clinical practice in evaluation, diagnosis, and treatment planning of early-to-intermediate dental and oral disease. Practice in dental emergency diagnosis and management. Repeated registrations required to fulfill the total requirement of 3 units.

**ODRP 826 Oral Medicine IV: Clinical Oral Pathology and Oncology (2)**

Differential diagnosis, laboratory studies, and initial management of oral disease, utilizing clinical case studies. Epidemiology, methods of detection, diagnosis, and management of oral and maxillofacial cancer. Principles of cancer therapy by surgical, radiation, and

medical modalities. Includes discussion of cancer prevention and post-therapy reconstruction. Emphasizes tobacco cessation protocols.

#### ODRP 875 Oral Diagnosis, Radiology, and Pathology Clinic (1-4)

Clinical practice in evaluation, diagnosis, and treatment planning for patients with intermediate-to-advanced dental and oral disease. Dental emergency diagnosis and management.

### ORAL AND MAXILLOFACIAL SURGERY

#### OMFS 604 Selected Topics in Oral and Maxillofacial Surgery (1)

A rotating, two-year schedule of weekly seminars covering selected topics in oral and maxillofacial surgery. Following a lecture on these topics, recent representational clinical cases presented and used as the basis for review and discussion—enhancing the knowledge base and critical thinking. Monthly grand rounds, given by respected guest speakers considered to be experts in their respective fields, cover current topics in oral and maxillofacial surgery and in practice management. Repeated registrations required to fulfill the total units.

#### OMFS 605 Integrated Orthodontic and Surgical Correction of Dentofacial Deformities (1)

A monthly multidisciplinary seminar course emphasizing preoperative diagnosis, planning, intraoperative procedures, and postoperative care of orthognathic patients. Includes description of congenital and developmental deformities, emphasizing all aspects of surgical-orthodontics patient management leading to critical thinking and decision making. Patients selected include a wide range of dentofacial deformities. Preoperative skeletal, dental, and soft-tissue analyses performed. Emphasizes the importance of accurate cephalometric analysis in treatment planning, including accurate prediction tracings. Repeated registrations required to fulfill the total units.

#### OMFS 606 Applied Surgical Anatomy (1)

Enables the resident to master the anatomic principles involved in clinical diagnosis and in assessing clinical problem areas encountered in various health care delivery situations. Discusses in detail the applied anatomic consequences of various surgical and treatment procedures and the anatomic aspects of emergencies occurring in practice, including cadaveric dissection. Emphasizes knowledge of the vascular supply and neuroinnervation of the structures of the oral cavity and adjacent areas of the head and neck. Applies material discussed in terms of actual clinical case presentations.

#### OMFS 607 Principles of Medical History, Physical Examination, and Clinical Medicine (2)

Focuses on developing accurate history-taking and physical examination skills. Specific topics include review of organ systems and associated pathology (physical and laboratory), hospital protocol, and charting. Residents perform history and physical (H&P) on medical and surgical patients. Emphasizes proficiency in developing differential diagnoses of common medical and surgical problems.

#### OMFS 608 Surgical Oral and Maxillofacial Pathology Conference (0.5)

Uses recent pathology cases as the basis for review and discussion of common and ominous lesions encountered. Emphasizes differential diagnosis and patient management. Guest lecturers cover selected topics in oral and maxillofacial pathology. Repeated registrations required to fulfill the total units.

#### OMFS 609 Literature Review in Oral and Maxillofacial Surgery (0.5)

A monthly discussion of recent literature from selected journals. Reviews classic landmark articles and their impact on the specialty. Repeated registrations required to fulfill total units.

#### OMFS 614 Clinical Experience in Oral and Maxillofacial Surgery Practice (7)

Training in various aspects of oral and maxillofacial surgery. Training in dentoalveolar surgery, complicated

fractures of the facial bones, reconstructive maxillofacial surgery, surgical orthognathic correction, treatment of developmental and acquired deformities of the jaw, implant surgery, temporomandibular joint surgery, and osseous grafting of postresection and posttraumatic maxillofacial defects. Study continues in the application of general anesthesia to ambulatory outpatient surgery patients. Residents trained to assume full responsibility for all aspects of the oral and maxillofacial surgery practice. Advanced clinical training in the subspecialty areas of oral and maxillofacial surgery, as well as training through off-service rotations with internal medicine, plastic and reconstructive surgery, head and neck surgery, general surgery, and other specialties. Repeated registrations required to fulfill the total units.

#### OMFS 615 Current Trends in Medicine and Surgery (2)

Off-service specialty seminars on a wide range of topics, including anesthesia, internal medicine, ICU care, general surgery, and various specialty topics. Repeated registrations required to fulfill the total units.

#### OMFS 616 Application of Surgical Principles to Orthognathic Surgery (1)

Introductory multidisciplinary lecture-seminar emphasizing preoperative diagnosis, treatment planning, intraoperative procedures, and postoperative care of orthognathic patients; description of congenital and developmental deformities, emphasizing all aspects of surgical orthodontic patient management.

#### OMFS 617 Critical Decision Making in Oral and Maxillofacial Surgery (1)

A weekly seminar designed to expand the participants' skill in critical decision making as it pertains to patient care in the field of oral and maxillofacial surgery. Students present cases weekly of proposed surgical experiences—reviewing data gathering, treatment alternatives, and treatment of complications. Additionally, selected posttreatment cases presented to review the proposed treatment versus the actual outcome as an opportunity for the participant to be involved with an outcome assessment analysis. Repeated registrations required to fulfill the total units.

#### OMFS 618 Introduction to General Anesthesia (1)

Introduces the theory and practice of general anesthesia.

#### OMFS 696 Scholarly Activity in Oral and Maxillofacial Surgery (1)

Selected didactic, clinical, and/or laboratory activity developed by the program director or a designated program faculty member. Primarily designed for residents to fulfill the certificate requirements for scholarly activity/research in oral and maxillofacial surgery. Multiple registrations may be needed to complete these activities.

#### OMFS 697A Research (1)

Student identifies a research project, prepares a protocol, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

#### OMFS 697B Research (1, 2)

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

#### OMFS 698 Thesis (1)

#### OMFS 805 Oral and Maxillofacial Surgery I (1)

Theory of oral surgery. Etiology, diagnosis, and surgical treatment of oral conditions and diseases commonly encountered in general practice. Familiarizes student with fundamental surgical techniques, principles involved in extraction of teeth, and selection and use of equipment.

#### OMFS 811 Oral and Maxillofacial Surgery II (1, 2)

Continues preparatory topics for general practice. Surgical complications, management of impacted teeth, odontogenic infections, preprosthetic surgery; introduces maxillofacial trauma, surgical treatment of cysts and tumors, orthognathic surgery. Final grade for this two-quarter, variable unit course given at the end of the second quarter. Requires repeated registrations to fulfill the total units.

**OMFS 819 Intravenous Sedation (1.5)**

Theory and practice of intravenous sedation as an adjunct to dental treatment. Physical diagnosis, venipuncture, intravenous fluid administration, monitors, medications, sedation techniques, emergencies. Limited to OMFS Honors Program students.

**OMFS 825 Oral and Maxillofacial Surgery Clinic I (1)**

Clinical application of the principles of oral maxillofacial surgery. Opportunities to gain experience in cases of the type treated by the general dentist.

**OMFS 875 Oral and Maxillofacial Surgery Clinic II (1)**

Clinical application of the principles of oral maxillofacial surgery. Opportunities to gain experience in cases of the type treated by the general dentist.

**OPHTHALMOLOGY****OPHM 891 Ophthalmology Elective (1.5-18)****ORTHODONTICS****ORDN 524 Introduction to Graduate Orthodontics (12)**

Lecture course outlining the principles of applied design, the application of forces to produce tooth movement, and the tissue response to such forces. Overview of orthodontics to prepare the student for clinical practice of orthodontics diagnosis and treatment planning, including cephalometrics, growth forecasting, and preparation of visual treatment objectives.

**ORDN 524L Introduction to Graduate Orthodontics Laboratory (6)**

Selected laboratory projects to enhance the didactic portion of the course.

**ORDN 525 Materials Science and Mechanics (2)**

Structure and properties of materials used in orthodontics. Analyzes the effects of mechanical and heat treatment. Surveys strength and mechanics in force-delivery systems.

**ORDN 526 Applied Anatomy (2)**

Fundamentals of anatomy as applied to a special region or application.

**ORDN 527 Clinical Photography (1)**

Clinical proficiency in intraoral and extraoral photography. Discusses and uses photographic equipment and techniques on orthodontic patients. Camera, lens, and flash required.

**ORDN 535 Advanced Cephalometrics (2)**

Studies cephalometrics from a historical perspective to the present time, including most of the major analyses.

**ORDN 536 Concepts of Physical Anthropology (2)**

Basic and classic concepts of physical anthropology as they relate to orthodontics.

**ORDN 545 Growth and Development (3)**

Principles of growth and development from the subcellular to the tissue level. Emphasizes myogenesis and osteogenesis. Prenatal and postnatal development of the face and jaws, including the classic concepts of facial growth. Considers general growth, with the goal of developing ability to recognize abnormal signs, observe variations, diagnose pathological conditions, know the normal, predict height, and use various standards to assess growth and development.

**ORDN 546 Fundamentals of Occlusion (2)**

The development of the human face and dentition. A concept of dynamic functioning occlusion.

**ORDN 571 Diagnosis and Treatment Planning I (2)**

Student diagnoses and treats assigned patients.

**ORDN 574 Diagnosis and Treatment Planning II (2)**

Continues ORDN 571, with follow-up of clinical cases with progress records.

**ORDN 584 Current Orthodontics Literature I (2)**

Presents current papers in various subspecialties of orthodontics.

**ORDN 591 Current Orthodontics Literature II (2)**

Presents current papers in various subspecialties of orthodontics.

**ORDN 597 Orthognathic Surgery Theory and Literature Review (2)**

Presents current papers in various subspecialties of orthodontics, with primary emphasis on surgical orthodontics. Presents cases with various problems requiring surgery.

**ORDN 604 Seminar in Orthodontics (1)**

Critically reviews suggested etiological factors of malocclusion. Problems of diagnosis and the rationale of various treatment philosophies. Liberally uses current literature. Discussion by guest lecturers with demonstrated competence in the field.

**ORDN 605 Advanced Seminar in Orthodontics (1)**

Second-year seminar. Design of clinical diagnosis and practice management. Repeated registrations to fulfill the total units required.

**ORDN 606 Craniofacial Genetics (2)**

Basic genetics. Introduces craniofacial clinic.

**ORDN 608 Physiology and Pathology of Speech (1)**

Studies specific areas of oral myofunctional disorders that influence the occlusion.

**ORDN 634 Orthodontics Clinical Conference (2)**

Students prepare and present diagnosis, case analysis, and treatment plan—with primary emphasis on difficult and unusual cases.

**ORDN 635 Finishing Mechanics I (2)**

Orthodontic treatment modalities, emphasizing finishing mechanics for the patient.

**ORDN 636 Finishing Mechanics II (1)**

A seminar course created for first-year graduate orthodontic students, exposing them to alternate treatment philosophies and modalities. Guest orthodontists present the main portion of the course and demonstrate their treatment concepts in finishing orthodontic cases.

**ORDN 654 Practice Teaching in Orthodontics (1-4)**

Students gain experience in teaching clinical orthodontics to predoctoral dental students. Repeated registrations to fulfill the total units required.

**ORDN 655 Temporomandibular Function and Dysfunction (2)**

The temporomandibular joint and dysfunction in health and disease. Diagnosis, treatment planning, and treatment of the temporomandibular joint, emphasizing the integration of orthodontics and temporomandibular joint treatment.

**ORDN 657 Orthodontic Board Preparation (1-6)**

Student presents completed orthodontic cases to faculty and other students. Prepares for the American Board of Orthodontics. Repeated registrations required to fulfill the total units required.

**ORDN 697A Research (1)**

Student identifies a research project, prepares a proposal, and obtains approval for the protocol.

**ORDN 697B Research (1-4)**

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

**ORDN 698 Thesis (3)****ORDN 725 Clinical Practice in Orthodontics (7)**

Diagnosis and treatment of assigned patients, including adults. Repeated registrations to fulfill the total units/clock hours required.

**ORDN 751 Principles of Orthodontics I (1)**

Objectives and science of orthodontics. Incidence, etiology, and recognition of malocclusion. Craniofacial growth and development. Diagnostic procedures, aids, and interpretation.

**ORDN 801 Minor Tooth Movement (2)**

Lecture, laboratory demonstration, and clinical exercise prepares students to diagnose and treat limited clinical problems. Applies theory. Minor tooth movement.

**ORDN 811 Principles of Orthodontics II (1)**

Biophysical principles. Removable and fixed orthodontic appliances, adult orthodontics, surgical orthodontics. Treatment planning. Interaction with other disciplines. National Board Examination preparation. Selected topics in orthodontics.

**ORDN 875 Orthodontics Clinic (1)**

Clinical application of skills that have been learned in the laboratory to manage minor tooth movement and early treatment cases.

**ORAL PATHOLOGY****ORPA 533 Radiology (2)**

Utilization of the physical nature of x-rays to better understand image production, biological effects of x-rays, radiation safety, application of principles of radiographic techniques. Risk estimation and radiographic interpretation.

**ORTHOTICS AND PROSTHETICS****ORPR 301 Orthotics & Prosthetics Laboratory and Technical Skills (3)**

Introduces the baseline of material and safety practice of orthotics and prosthetics design, fabrication, and repairs. Provides a solid foundational knowledge of the principles and applications of orthotics and prosthetics materials, technologies, designs, and processes associated with the manufacture of custom devices.

**ORPR 305 Orthotic Fitting Techniques (3)**

Teaches methods of biometrics, shape capture, and fitting criteria for orthotic devices. Expands knowledge and techniques of applied anatomy in the fitting of orthotic and assistive devices in activities of daily living and patient's occupational needs.

**ORPR 310 Patient Management, Assessment, and Documentation (3)**

Orthotic and prosthetic patient-care models, patient rights, and ethical practice of care. Advanced principles and processes of patient assessment, management, and complete documentation within the context of interprofessional referrals, interactions, and reimbursement as applied both to the in- and outpatient context.

**ORPR 315 Pedorthics (3)**

Clinical application of biomechanical interventions of the ankle-foot structure as it refers to walking, medical issues of the foot, and activity levels. Applied anatomical knowledge of the foot and sports medicine within the context of shoes and shoe modifications.

**ORPR 320 Biomechanical Evaluation (3)**

Establishes orthotic & prosthetic biomechanical principles and interventions in the context of normal body mechanics and musculoskeletal pathologies. Examines how these interventions serve to maximize healing, manage pain, support movement and function. Encompasses whole body considerations for the kinetic effects, including gait, ADL, occupational & recreational functions.

**ORPR 325 Medical Terminology (3)**

Language of medicine, including: word construction, word analysis, definitions, and the use of terms related to medical science—specifically to orthotics and prosthetics. Course information organized by body systems. Applies knowledge to documentation, interdisciplinary communication, and medical justification as it applies to orthotic and prosthetic care.

**ORPR 330 Lower Extremity Orthotics I (3)**

Studies foot and ankle-foot orthoses—including myoelectric orthoses—from an anatomical design and

fabrication perspective. Effects of their application to the body kinematics and kinetic chain. Considerations for specific pathological applications, as well as awareness of implied benefits and risks. Outcome measurements for particular static and dynamic designs.

#### ORPR 340 Lower Extremity Prosthetics I (3)

Studies the etiology of amputations below the knee. Considers surgical and immediate postoperative issues as they relate to patient experience, prosthetic outcome, and gait. Looks at prosthetic component selection; socket, interface, and suspension designs in the context of ambulation levels and activities; and specialty applications. Examines skin and tissue physiology, both from a design and end-user perspective. Considers cost and efficiency based on component selection.

#### ORPR 345 Spinal Orthotics (3)

Examines the anatomy, biomechanics, and pathology of the spine. Presents fabrication, fitting, and application of various orthotic interventions in light of a critical and differential diagnosis—determining the best outcome with the most effective and comfortable fit. Includes application and proper fitting of halos and of cervical, thoraco-lumbar, and lumbar devices. Gives special consideration to design, plaster casting techniques, and CAD measurements for the management of scoliosis. Teaches student to read a standard radiograph and measure and interpret spinal deformities, and to make appropriate recommendations for orthotic management.

#### ORPR 405 Gait Analysis (3)

Observation and analysis of normal human locomotion contrasted with pathological gait, and their implications for orthotic and prosthetic interventions and care.

#### ORPR 410 Orthotic and Prosthetic Clinical Rotation (1)

Assigns student to a weekly clinic, department, or specialty—with a focus on familiarization with specific orthotic and prosthetic services. Student reports to his/her cohorts in a once-a-month didactic presentation at the weekly grand rounds, which can include lectures

from industry providers on the topic of choice. Site allocation determined by program director; student accountable to quarterly assigned clinical supervisor.

#### ORPR 415 Lower Extremity Orthotics II (3)

Advanced study of knee-ankle-foot orthoses, knee orthoses, hip orthoses, reciprocating gait orthoses, and standing frames from an anatomical design and fabrication perspective. Effects of their application to the body kinetic chain. Considers specific pathological applications, including implied benefits and risks. Outcome measurements for particular static and dynamic designs. Introduces CAD/CAM technologies both for image capture and fabrication.

#### ORPR 420 Lower Extremity Prosthetics II (3)

Studies etiology of above-the-knee amputations. Surgical and immediate postoperative considerations as they relate to patient experience, prosthetic outcome, and potential for gait. Considers prosthetic component selection, socket interface, and suspension designs in the context of ambulation levels and activities; specialty applications. Presents mechanical, hydraulic, and electronic knee-motion control. Includes cost and efficiency calculations based on component selection. Introduces CAD/CAM shape capture and fabrication considerations, with attention to mechanical and electronic alignment capture.

#### ORPR 425 CAD/CAM Technologies (3)

Studies applications of CAD/CAM technologies as they are used in today's clinical practice. Familiarizes the student with the most common shape/image capture systems, manipulations, and interfaces with the various central fabrication methods available in the industry. Includes use of CADs/CAMs in both orthotics and prosthetics, including foot orthoses, spinal orthoses, and cranial helmets. Prepares student to be able to store and manipulate data and familiarizes student with the technical support and fabrication process.

#### ORPR 430 Upper Extremity Orthotics (3)

Applies anatomy, kinesiology, and biomechanics to serve specific upper extremity neuromuscular needs. Determines the use of functional and electrically powered orthoses based on differential diagnoses.

Examines myoelectric assisted translateral motion rehabilitation. Teaches function, purpose, and building of wrist- and cable-driven orthoses.

### ORPR 435 Upper Extremity Prosthetics (3)

Studies the etiology of upper limb and forequarter amputations. Considers shape capture, socket design, interface, and suspension in the context of cosmetic, body-powered, and myoelectric functional prostheses. Includes special needs adaptations for occupational and sports situations. Give attention to the distinctions of functionality, efficacy, and cost. Studies the bionic arm and hand and the computer training that goes with this particular technology.

### ORPR 440 Bionics and Cyborg Technology (3)

Examines emerging bionic technologies aimed at merging man with machine. Includes competencies and promotion of these devices in the context of scientific research and potential patient applications. Examines bionic control systems' embedded software development and associated function. Topics include proficiency in the implementation of cybernetic feedback systems in ortho-prosthetic devices.

### ORPR 491 Research I (3)

Introduces the scientific method in health science research. Focuses on the major steps of the research process: problem identification, literature review, conceptual framework, identification of variables, statement of hypothesis, experimental design, and analysis and presentation of data. Includes critical evaluation of research literature. Applies the research process to problems in related specific allied health fields. Develops a research proposal. Pilot-tests a research proposal. Tests procedures and data forms. Implements the research proposal in a practice setting.

### ORPR 504 Materials Science in Orthotics and Prosthetics (3)

Advances the student's competencies in materials commonly used in orthotic and prosthetic devices. Incorporates in-depth analysis of metals, polymers, and carbon fibers materials. Provides knowledge of

chemical compositions, stress-strain curves, fatigability, and other essential characteristics to be considered in orthotic and prosthetic design.

### ORPR 505 Current Issues in Orthotics and Prosthetics (3)

Reviews and discusses concerns and current advances relating to orthotics and prosthetics, e.g., legislation, regulations, education, professional organization, interdisciplinary patient care, and reimbursement issues.

### ORPR 506 Advanced Specialty Tracks in Orthotics and Prosthetics (3)

Presents the newest clinical treatment applications over the spectrum of the patient population in the field of orthotics and prosthetics.

### ORPR 510 Advanced Clinical Rotations (1)

Assigns student to a weekly clinic, department, or specialty—with a focus on familiarization with specific orthotic and prosthetic services. Under direct supervision, student provides comprehensive orthotic and prosthetic clinical care. Student reports to his/her cohort in a once-a-month didactic presentation at the weekly grand rounds, which can include lectures from industry providers on the topic of choice. Site assignment determined by program director; student accountable to quarterly assigned clinical supervisor.

### ORPR 514 Clinical Affiliation (8)

Establishes a clinical affiliation with a facility that complies with ENCOPE residency standards and that has been approved by the Professional Development Committee and the EL-MSOP locally assigned site supervisor. Student completes the 500 clinical contact hours required for graduation.

### ORPR 515 Topics in Orthotics and Prosthetics (1-6)

Lecture and discussion related to the practice of orthotics and prosthetics. Content varies from quarter to quarter. (May be repeated for additional credit for a maximum 6 quarter units.)

**ORPR 520 Lower Extremity Prosthetics III (3)**

Studies the etiology of hip and transcorporectomy amputations. Surgical and immediate postoperative considerations as they relate to patient experience, prosthetic outcome, and potential for gait. Considers the care of the extreme sports-user amputee. Includes selection, socket interface, and suspension designs in the context of ambulation levels and activities' specialty applications. Examines skin and tissue physiology, both from a design and an end-user perspective. Includes mechanical, hydraulic, and electronic knee-motion control. Considers cost and efficiency based on component selection. Introduces CAD/CAM shape capture; and considers fabrication, with attention to mechanical and electronic alignment capture.

**ORPR 522 Self-Care Portfolio and Community Outreach (2)**

Inventory of self-care and process to accomplish it. Puts self-care in the context of life-long learning, relational responsibility, and social justice. Applies principles of effective community leadership engagement, locally and globally.

**ORPR 525 Lower Extremity Orthotics III (3)**

Advanced study of myoelectric and electronic control to ankle-foot, knee-ankle-foot, and reciprocating gait orthoses from a design and fabrication perspective. Effects of their application to the body kinetic chain. Considerations for specific pathological applications; awareness of implied benefits and risks. Studies outcome measurements for particular static, dynamic, and electrodynamic designs, including EFS.

**ORPR 538 Biomechatronics (3)**

Development of competencies in biomechatronics. Bionic technology, embedded design programming, and fabrication. Robotic actuation and senses. Advanced material use and fabrication techniques.

**ORPR 540 Rehabilitative Care in Developing Nations (3)**

Examines the physical rehabilitation state of affairs in developing nations. Outlines specific challenges with

rehabilitation delivery from logistics, materials, and cost perspectives. Points out alternative methods to maximize rehabilitation with minimal cost.

**ORPR 592 Research II (3)**

Computer data analysis and preparation of a research report. Student prepares a poster appropriate for a professional meeting. Graphics, tables, and abstracts.

**ORTHOPAEDIC SURGERY****ORTH 891 Orthopaedic Surgery Elective (1.5-18)****OTOLARYNGOLOGY****OTOL 891 Otolaryngology Elective (1.5-18)****PHYSICIANS ASSISTANT****PAST 403 Anatomy and Physiology III (3)**

Gross and microscopic anatomy of the human body. Lecture, laboratory with cadaver dissection, demonstration, and slides. Orientation to structure of various systems of the body.

Prerequisite: PAST 402; series to be taken in sequence.

**PAST 404 Biochemistry for Physician Assistants (3)**

Chemistry and metabolism of carbohydrates, lipids, nucleic acids, and proteins. Chemical basis of life processes. Lecture and laboratory demonstrations to support student competency.

**PAST 504 Primary Care Pediatrics (2)**

Introduces common medical and surgical disorders encountered in pediatric medicine. Emphasizes primary care concepts in the care of children. Introduces rare disorders that the physician assistant may encounter in primary care. Presentation of disease processes mirrors adult medicine by discussing etiology, pathophysiology, clinical presentation, diagnostic work-up, and management.

**PAST 505 Women's Health Care (2)**

Common problems encountered in caring for women; management of these problems. Etiology, pathophysiology, clinical presentation, and diagnostic work-up.

**PAST 509 Behavioral Science for Physician Assistants (3)**

Behavioral science counseling skills necessary to assist patients in dealing with illness and injury, in following prescribed treatment regimens, and in adopting attitudes and behaviors leading to improved health behaviors (including thinking, feeling, and acting).

**PAST 516 Physician Assistant Professional Issues (2)**

A historical perspective of the physician assistant (PA) profession, as well as current trends and issues; the PA's role in health care delivery; political and legal factors that affect PA practice; intraprofessional factors and the PA's role in relation to physicians and other providers. Importance of professional responsibility and of biomedical ethics in relation to the PA's role as health care provider. Content relating to PA professional organizations, program accreditation, and graduate certification and recertification; employment considerations; and professional liability.

**PAST 518 Anatomy and Physiology I (3)**

Gross and microscopic anatomy of the human body. Lecture, laboratory with cadaver dissection, demonstration, and slides. Orientation to structure of various systems of the body.

**PAST 519 Anatomy and Physiology II (3)**

Gross and microscopic anatomy of the human body. Lecture, laboratory with cadaver dissection, demonstration, and slides. Orientation to structure of various systems of the body.

Prerequisite: PAST 518.

**PAST 521 Research I (3)**

Introduces the scientific method in health science research. Focuses on the major steps of the research process: Problem identification, literature review,

conceptual framework, identification of variables, statement of hypotheses, experimental design and analysis, and presentation of data. Includes critical evaluation of research literature.

**PAST 522 Research II (2)**

Student applies the research process to problems in related specific allied health fields and develops a research proposal. Pilot testing of procedures and data collection forms.

Prerequisite: PAST 521.

**PAST 523 Research III (2)**

Student implements a research proposal in a practice setting. Computer data analysis and preparation of a research report both in written and oral formats.

Student develops and creates a PowerPoint presentation, poster, and abstract for submission to a professional meeting.

Prerequisite: PAST 521, PAST 522.

**PAST 524 Family Medicine I (4)**

A four-week rotation in a primary care clinic. Provides clinical experience with common medical problems and health care needs of all age groups. Forty hours per week.

**PAST 525 Family Medicine II (4)**

A four-week rotation in a primary care clinic that includes urgent care. Clinical experience with common medical problems and health care needs of all age groups. May require late evening and weekend hours. Forty hours per week.

**PAST 526 Internal Medicine I (Inpatient Medicine) (4)**

A four-week rotation as part of an internal medicine admitting team. Clinical experience with common medical problems, admissions, daily rounds, and patient management and discharge processes. On-call required (overnight). Sixty hours per week.

**PAST 527 Internal Medicine II (Outpatient Medicine) (4)**

A four-week rotation in outpatient medical clinics. Clinical experience with common adult medical problems, including management of chronic diseases. Forty hours per week.

**PAST 528 Pediatrics I (Inpatient Pediatrics) (4)**

A four-week rotation as part of a pediatrics admitting team. May include overnight in-hospital call, emergency room call, ward rounds, and outpatient clinic duties. Clinical experience with common childhood illnesses, admissions, discharge, daily progress notes, and patient management processes. Sixty hours per week.

**PAST 529 Pediatrics II (Outpatient Pediatrics) (4)**

A four-week rotation in a pediatrics clinic. Clinical experience with common medical problems and health care needs of people from birth to 18 years. May require evening or weekend hours. Forty hours per week.

**PAST 531 Obstetrics and Gynecology (4)**

A four-week rotation through various aspects of an obstetrics and gynecology service. Clinical experience in women's health care—emphasizing primary care, including normal pregnancy and childbirth. May require in-hospital on-call (overnight) or late hours. Sixty hours per week.

**PAST 532 General Surgery (4)**

A four-week rotation on general surgery service. Clinical experience with common medical problems requiring surgical intervention, primarily in adults. Includes assignment to an admitting team, in-hospital call (overnight), or late hours. Includes assisting in the operating room and surgical clinic. Sixty hours per week.

**PAST 533 Emergency Medicine (4)**

A four-week rotation through a hospital emergency department, primarily in urgent care or assigned to minor trauma and illnesses. Clinical experience with common illnesses and injuries, suturing, and splinting. Requires late night and weekend duties. Sixty hours per week.

**PAST 534 Psychiatry/Behavioral Medicine (4)**

A four-week rotation through an inpatient and outpatient behavioral medicine service. Clinical experience with common mental health problems, including acute and chronic psychoses, substance abuse, and affective disorders. May require late night or on-call duties. Sixty hours.

**PAST 536 Elective I (4)**

A four-week elective rotation through a medical or surgical service of choice (as available). Hours/call may vary.

**PAST 537 Elective II (4)**

A four-week elective rotation through a medical or surgical service of choice (as available). Hours/call may vary.

**PAST 541 Clinical Medicine for Physician Assistants I (5)**

Study of common medical and/or surgical disorders encountered in general adult medicine. Typical clinical presentation, etiology, pathophysiology, diagnostic work-up, EKG interpretation, and management of disorders.

**PAST 542 Clinical Medicine for Physician Assistants II (5)**

Part II of the three-quarter sequence introducing the student to a study of common medical and/or surgical disorders encountered in general adult medicine. Includes typical clinical presentation, etiology, pathophysiology, diagnostic work-up, EKG interpretation, and management of disorders.

Prerequisite: PAST 541.

**PAST 543 Clinical Medicine for Physician Assistantss III (3)**

Part III of the three-quarter sequence introducing the student to the study of common medical and/or surgical disorders encountered in general adult and pediatric medicine. Includes typical clinical presentation, etiology, pathophysiology, diagnostic work-up, and management of disorders.

Prerequisite: PAST 541, PAST 542.

**PAST 544 Pharmacology for Physician Assistants I (3)**

Part I of a two-part course that covers basic concepts of pharmaceuticals used in the diagnosis, prevention, and treatment of disease. Systematic presentation of the pharmacology and therapeutic value of drugs used in medicine. Related topics—with special consideration of pediatric and geriatric pharmacology—include drug legislation, PDR, routes of administration, pharmacokinetics, pharmacodynamics, adverse effects, drug interactions, and drug toxicity. Overview of physician assistant's responsibilities in prescribing and/or dispensing pharmaceuticals.

**PAST 545 Pharmacology for Physician Assistants II (3)**

Part II of a two-part course that covers basic concepts of pharmaceuticals used in the diagnosis, prevention, and treatment of disease. Systematic presentation of the pharmacology and therapeutic value of drugs used in medicine. Related topics—with special consideration of pediatric and geriatric pharmacology—include drug legislation, PDR, routes of administration, pharmacokinetics, pharmacodynamics, adverse effects, drug interactions, drug toxicity. Overview of physician assistant's responsibilities when prescribing and/or dispensing pharmaceuticals.

Prerequisite: PAST 544.

**PAST 547 Basic Medical Science (3)**

Provides an overview of scientific principles as they pertain to the practice of clinical medicine. Emphasizes microorganisms commonly encountered by physician assistants in clinical practice. Provides a foundation for principles of clinical medicine and pharmacology.

**PAST 548 Diagnostic Methods (2)**

Provides the physician assistant student with an overview of laboratory tests and diagnostic studies regularly performed in the clinical setting. Emphasizes interpretation of results and clinical significance of commonly ordered laboratory tests. Includes observation and performance of laboratory testing routinely performed in primary care offices and hospital settings.

**PAST 549 Topics in Physician Assistant Practice (3)**

Reviews current topics in the physician assistant profession. Includes discussion of strategies for providing culturally competent care in clinical practice.

**PAST 551 Pathology for Physician Assistants I (3)**

Fundamental mechanisms of disease, including: cell injury, inflammation, repair, regeneration, and fibrosis; vascular, cardiac, respiratory, gastrointestinal, hepatobiliary, urinary, reproductive, endocrine, and integumentary pathologies.

**PAST 552 Pathology for Physician Assistants II (3)**

Fundamental mechanisms of disease, including: the central and peripheral nervous systems; bones and joints; skeletal muscle; developmental, genetic, infectious, and parasitic pathologies; and neoplasia. Two autopsy observations with written report, and one hour per week participation in differential diagnosis seminar required.

Prerequisite: PAST 551.

**PAST 554 Clinical Skills for Physician Assistants (5)**

Introduces the basic skills and knowledge needed to evaluate and treat common illnesses and injuries. Safety, aseptic technique, BLS, ACLS, wound care, local anesthesia, suturing, casting, splinting, use of various tubes and drains, and emergency medicine; and surgery for physician assistants. Includes participation in clinical simulations for enhanced skill development.

**PAST 556 Preventive Medicine and Health Promotion (2)**

Selected topics dealing with aspects of disease prevention. Relevance of statistics, epidemiology, research designs, and clinical trials; as well as selected disease trends and lifestyle modification. Includes the role of physical activity, nutrition, immunization, and public health approaches to communicable diseases. Provides practical information about how to perform

clinical preventive services and allows the physician assistant student to gain skills in designing a tailored health maintenance plan for the individual patient.

#### PAST 558 Psychiatry for Physician Assistants (3)

Focuses on diagnosis and treatment of major psychiatric and mental disorders. Topics include depression, anxiety, phobias, substance and eating disorders, somatoform, psychoses, neuroses, and personality disorders.

#### PAST 561 Physical Diagnosis I (3)

Part I of a three-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination.

#### PAST 562 Physical Diagnosis II (3)

Part II of a three-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination.

Prerequisite: PAST 561.

#### PAST 563 Physical Diagnosis III (3)

Part III of a three-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination.

Prerequisite: PAST 561, PAST 562.

#### PAST 564 Research for Physician Assistants I (3)

Part one of a two-part series designed to increase the student's knowledge and understanding of research as it relates to the physician assistant profession.

Emphasizes the value of research in physician assistant education and clinical practice.

#### PAST 565 Research for Physician Assistants II (3)

Part-two of a two-part series designed to increase the student's knowledge and application of research in physician assistant education, clinical practice, and the profession.

Prerequisite: PAST 564.

#### PAST 571 Multicultural Competencies for Physician Assistants (3)

Reviews and evaluates strategies for providing culturally and linguistically competent care in clinical practice. Emphasizes care of the Spanish-speaking patient.

#### PAST 572 Cultural Immersion for Physician Assistants (4)

Provides PA students a cross-cultural opportunity to interact with non-English-speaking patients, and fosters greater understanding of another culture. Emphasizes health and medicine.

Prerequisite: PAST 571.

#### PAST 601 Evidence Based Medicine for Physician Assistants I (2)

Introduces student to evidence-based practice, emphasizing the use of medical literature to evaluate and improve the practice of clinical medicine. Teaches student to assess medically oriented information online, as well as evidence-based medicine databases.

#### PAST 602 Evidence Based Medicine for Physician Assistants II (2)

Continuation of PAST 601, with discussions and application of evidence-based medicine. Student develops a topic; completes a full review of the literature; and in consultation with a faculty mentor, produces an analytic paper related to evidence-based medicine in physician assistant practice. Prepares student for the capstone project. Requires satisfactory completion of PACKRAT-I and OSCE-I.

Prerequisite: PAST 601.

**PAST 603 Capstone (2)**

Commences during Fall Quarter of the clinical year and culminates in the Summer Quarter with completion of the capstone project. Project requires investigation of a topic related to an area of interest within primary care or the PA profession using an evidence-based, investigational approach. Student completes a scholarly paper in consultation with a faculty member, presents findings in an oral presentation, and publishes a poster. Requires satisfactory completion of the PACKRAT-II and OSCE-II.

Prerequisite: PAST 602.

**PAST 701 Rotation I (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 702 Rotation II (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 703 Rotation III (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 704 Rotation IV (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery,

emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 705 Rotation V (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 706 Rotation VI (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 707 Rotation VII (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 708 Rotation VIII (6)**

A required six-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotation through a medical or surgical service of choice.

**PAST 709 Rotation IX (4)**

A required four-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery,

emergency medicine, psychiatry/behavioral medicine; and elective rotations through a medical or surgical service of choice.

#### PAST 710 Rotation X (4)

A required four-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotations through a medical or surgical service of choice.

#### PAST 711 Rotation XI (4)

A required four-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotations through a medical or surgical service of choice.

#### PAST 712 Rotation XII (4)

A required four-week rotation in outpatient and/or inpatient settings in any of the following areas of concentration: family medicine, internal medicine, pediatrics, obstetrics and gynecology, general surgery, emergency medicine, psychiatry/behavioral medicine; and elective rotations through a medical or surgical service of choice.

## PATHOLOGY

#### PATH 514 Human Systemic Pathology (2, 2.5)

Systematically reviews diseases affecting each organ system. Covers etiology, pathogenesis, morphology, pathophysiology, and biologic behavior; as well as relevant laboratory medicine techniques. Correlates with concurrent courses in physiology, microbiology, and physical diagnosis.

Prerequisite: MDCJ 553, MDCJ 554, MDCJ 555, MDCJ 556. Recommended: Concurrent or previous medical microbiology.

#### PATH 515 Human Systemic Pathology (3.5)

Systematically reviews diseases affecting each organ system. Covers etiology, pathogenesis, morphology, pathophysiology, and biologic behavior; as well as relevant laboratory medicine techniques. Correlates with concurrent courses in physiology, microbiology, and physical diagnosis.

Prerequisite: MDCJ 514. Recommended: Concurrent or previous medical microbiology.

#### PATH 516 Human Systemic Pathology (2)

Systematically reviews diseases affecting each organ system. Covers etiology, pathogenesis, morphology, pathophysiology, and biologic behavior; as well as relevant laboratory medicine techniques. Correlates with concurrent courses in physiology, microbiology, and physical diagnosis.

Prerequisite: MDCJ 515. Recommended: Concurrent or previous medical microbiology.

#### PATH 599 Directed Study (1.5-18)

#### PATH 891 Pathology Elective (1.5-18)

## PHYSICAL EDUCATION ACTIVITY

#### PEAC 110 Independent Activities (0.5, 1)

Develops an appropriate activity program in conjunction with the staff at the activities center.

Develops motor skills and physical stamina in a manner that will promote lifelong involvement in physical activity.

## PEDIATRIC DENTISTRY

#### PEDN 503 Pediatric Dental Seminar (2)

Selected clinical topics in pediatric dentistry. Requires repeated registrations to fulfill total units.

#### PEDN 508 Pediatric Hospital Dentistry Seminar (2-4)

Hospital protocol and the care of patients in a hospital environment.

**PEDN 512 Oral Sedation Seminar (2)**

Pharmacology, medical considerations, clinical applications, and protocols for oral sedation.

**PEDN 521 Principles of Medicine and Physical Diagnosis (2)**

Medical and physical diagnosis for the pediatric dental patient.

**PEDN 524 Introduction to Orthodontics (2)**

Diagnosis and treatment planning for clinical orthodontics.

**PEDN 524L Introduction to Orthodontics Laboratory (1, 2)**

Fabrication of various orthodontic appliances.

**PEDN 604 Pediatric Dental Literature (2-12)**

Pediatric dental literature study, including literature found on the reading list of the American Board of Pediatric Dentistry. Repeated registrations required to fulfill the total units.

**PEDN 654 Practice Teaching for Pediatric Dentistry (1-5)**

Student gains experience teaching pediatric dentistry in clinical and laboratory settings. Repeated registrations required to fulfill the total units.

**PEDN 680 Elective Study for Advanced Education Students of Pediatric Dentistry (1-10)**

Topics selected by students in the advanced education program in pediatric dentistry and by department faculty. Repeated registrations required to fulfill the total units.

**PEDN 696 Scholarly Activity in Pediatric Dentistry (1)**

Selected didactic, clinical, and/or laboratory activity developed by the program director or a designated program faculty member. Primarily designed for residents to fulfill the certificate requirements for scholarly activity/research in pediatric dentistry. Multiple registrations may be needed to complete these activities.

**PEDN 697A Research (1)**

Student identifies a research project, prepares a protocol, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

**PEDN 697B Research (1, 2)**

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

**PEDN 698 Thesis (1-3)**

Required for M.S.-degree track.

**PEDN 725 Pediatric Dental Clinic (8)**

Clinical pediatric dental experience in both the outpatient and inpatient settings for patients with a variety of clinical needs and problems. Repeated registrations required to fulfill total units.

**PEDN 753 Pediatric Dentistry I Lecture (2)**

Prevention of dental disease (oral hygiene, diet, fluoride, pit and fissure sealants). Behavior management of the child dental patient. Diagnosis, treatment planning, and operative dentistry for children. Pediatric pulp therapy, dental arch-length management, local anesthesia and sedation for children. Medical aspects of pediatric dentistry.

**PEDN 753L Pediatric Dentistry I Laboratory (1)**

Technique course to accompany PEDN 753. Students perform operative procedures for amalgam and composite resin on simulated primary and young permanent teeth. In addition, students perform pulpotomies on primary molar teeth and prepare primary teeth for stainless steel, open-faced stainless steel, and resin crowns. Unilateral and bilateral space maintainers are fabricated.

**PEDN 821 Pediatric Dentistry II (1)**

Traumatic injuries to the primary and young permanent teeth and oral soft tissues. Developmental and eruption patterns of primary and permanent teeth. Sports dentistry. Pediatric sedation techniques and monitoring. Oral habits of children. Child abuse.

**PEDN 825 Pediatric Dentistry Clinic (0.5-3.5)**

Dental care of children in their primary, mixed, and young permanent dentition. Etiology of disease, prevention of oral disease, growth and development analysis, treatment planning, restorative procedures, and arch length control.

**PEDN 875 Pediatric Dentistry Clinic (0.5-3)****PEDIATRICS****PEDS 599 Pediatrics Directed Study (1.5-12)****PEDS 701 Pediatrics Clerkship (1.5-12)**

An eight-week clerkship that addresses issues unique to childhood and adolescence by focusing on human development; and by emphasizing the impact of family, community, and society on child health and well-being. Additionally focuses on the impact of disease and its treatment on the developing human; and emphasizes growth, development, principles of health supervision, and recognition of common health problems. Stresses the role of the pediatrician in prevention of disease and injury and importance of collaboration between the pediatrician, other health professionals, and the family.

**PEDS 821 Pediatrics Subinternship (1.5-6)**

Second- and third-year pediatric residents supervise pediatric subinterns. First-year pediatric residents cooperate with subinterns to follow assigned patients from admission to discharge, including orders and communication with patients and their parents. Subinterns carry the team pager during portions of the day and portions of their call. When on overnight call every fourth night, subinterns will be treated as pediatric interns. Attending physician is ultimately responsible for assuring appropriate patient care and will authenticate subinterns' work.

**PEDS 822 Pediatrics Intensive Care (1.5-6)**

Builds upon and expands the base of core knowledge established during the third-year clerkship. Refines problem-solving skills, emphasizing the development of a rational treatment program for each patient. Teaches students to integrate into clinical medicine the principles of pathophysiology. Teaches students to

relate to other members of the health care team in a cooperative and respectful manner. Develops students' ability to use the scientific literature in the clinical setting, with emphasis on individual learning.

Prerequisite: PEDS 701.

**PEDS 891 Pediatrics Elective (1.5-18)****PERIODONTICS****PERI 524 The Periodontium (2)**

Reviews literature concerning the anatomy (macro-, micro-, and ultrastructural) and the physiology of the periodontium.

**PERI 531 Periodontal Pathology (2)**

Reviews literature that forms the basis for current concepts of the etiology and pathogenesis of periodontal diseases. Repeated registrations required to fulfill the total units.

**PERI 601 Periodontal Therapy (2)**

Reviews literature that forms the basis for current concepts of the treatment of periodontal diseases. Repeated registrations required to fulfill the total units.

**PERI 604 Current Periodontal and Implant Literature (2)**

Reviews most recent issues of periodontal and implant scientific journals. Repeated registrations required to fulfill the total units.

**PERI 605 Implant Literature Review (2)**

Reviews literature providing the basis for implant surgery, as well as concepts for implant restoration. Repeated registrations required to fulfill the total units.

**PERI 611 Introduction to Periodontics (2)**

Overview of the clinical science of periodontics, including epidemiology, etiology, therapy, clinical methods, and record keeping.

**PERI 614 Implant Treatment Planning (2)**

Limited to residents enrolled in two disciplines (i.e., advanced education in periodontics and implant

surgery, and advanced prosthodontics). Residents required to present cases that involve mutual interests. Repeated registrations required to fulfill the total units.

#### PERI 624 Moderate Sedation in Periodontics (4)

Prepares postdoctoral periodontics graduate students to meet or exceed the requirements for certification by the California Board of Dentistry in the administration of moderate (intravenous) sedation and to satisfy the requirements of the Commission on Dental Accreditation of the American Dental Association for the teaching of moderate sedation. Includes lectures, laboratory exercises, and literature review seminars intended to enhance the students' proficiency in the theory and practice of moderate sedation in the dental office. Open to graduate students/residents in other advanced education programs.

#### PERI 634 Clinical Conference (1, 2)

Case management conference to assist the student in diagnosis, treatment planning, and the management of periodontal diseases and implant surgery. Repeated registrations required to fulfill the total units.

#### PERI 654 Practice Teaching in Periodontics (1)

Experience in teaching the predoctoral dentistry student. Repeated registrations required to fulfill the total units.

#### PERI 696 Scholarly Activity in Periodontics (1)

Selected didactic, clinical, and/or laboratory activity developed by the program director or a designated program faculty member. Primarily designed for students to fulfill the certificate requirements for scholarly activity/research in periodontics. Multiple registrations may be needed to complete these activities.

#### PERI 697A Research (1)

Student identifies a research project, prepares a protocol, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

#### PERI 697B Research (1, 2)

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

#### PERI 698 Thesis (1)

#### PERI 705 Introduction to Periodontics (2)

Reviews gross and microscopic anatomy of the periodontium in health and disease. Primary etiology of periodontal disease. Examines patient's clinical periodontal status and introduces the diagnostic and treatment-planning process.

#### PERI 725 Clinical Practice in Periodontics (1-6)

Clinical experience in the diagnosis and treatment of periodontal diseases. Repeated registrations to fulfill the total units/clock hours required.

#### PERI 726 Clinical Practice in Implant Surgery (2)

Clinical experience in the diagnosis and treatment regarding implant surgery. A minimum of 60 clock hours per quarter (twelve quarters) required to fulfill total units.

#### PERI 741 Essential Periodontal Therapy (2)

Develops philosophy and skills in personal and patient plaque control. Develops skill and biological basis for periodontal instrumentation. Impact of these procedures on the bacterial microflora and periodontal tissues. Comprehensive treatment planning, prognostication, limitation, and evaluation in short- and long-range periodontal treatment. Laboratory exercises and clinical training required.

#### PERI 742 Essential Periodontal Therapy Laboratory (2)

Laboratory exercises in the proper implementation of basic periodontal therapy, such as oral hygiene instruction, periodontal charting and examination, periodontal instrumentation using curettes, scalers (both hand and ultrasonic), the sharpening of instruments; culminates in a partner-prophylaxis. Course extends over two quarters.

Prerequisite: PERI 705.

### PERI 765 Special Topics in Periodontal Therapy (2)

Advanced cases and evidence-based decisions in clinical practice, such as treatment of medically compromised patients, diagnosis, prognosis, perio-endo considerations, preparation of the periodontium for restorative treatment, and surgical wound healing.

### PERI 805 Periodontal Surgical Therapy (1)

Long-term comparison of various currently accepted periodontal surgical procedures, including rationales, techniques, postoperative care, and healing processes and outcomes. Laboratory exercises in application of surgical principles for access procedures. Modification of tissue morphology.

### PERI 875 Periodontics Clinic (1-7.5)

Clinical practice in evaluation, diagnosis, and treatment planning of early-to- advanced periodontal disease. Practice in dental emergency diagnosis and management. This four-quarter sequence course must be successfully completed to earn credit.

## PUBLIC HEALTH—CONJOINT

### PHCJ 250 Fundamentals of Human Anatomy and Physiology (4)

Integrated, fundamental study of anatomy and physiology of the human body from a systems perspective. Includes laboratory.

### PHCJ 401 Essentials of Public Health (4)

Essential issues in public health, including history from ancient times to HMOs; definitions; organization and infrastructure; functions, practices, programs, and services. Contributions of important public health practitioners. Political, social, and economic considerations of public health problems.

### PHCJ 501 Introduction to On-line Learning (1)

Orientation to on-line instruction programs. Includes introduction to Loma Linda University; the School of Public Health faculties, facilities, and resources; use of library on-line services; Web-based instruction; Blackboard; course formatting; and fellow students.

### PHCJ 510 Native American Health Care and Wellness (3)

Culture, history, and political and social dynamics affecting the health of Native Americans. Topics include: history of Native Americans, the Native American universe, history of Native American disease, current state of Native American health, merging traditional healing and Western medicine, improving Native American wellness, effects of federal Indian law, Indian Health Service and its predecessors.

### PHCJ 604 Research Seminar (2)

Student develops and critiques research and dissertation proposals, with peer review of research protocols. Limited to doctoral degree students.

Prerequisite: PHCJ 534, STAT 514; or consent of instructor.

### PHCJ 605 Overview of Public Health (1)

Selected topics addressing issues, concepts, and recent developments in public health.

### PHCJ 675 Integrated Public Health Capstone (2)

Serves as the capstone educational experience for students earning a degree in public health. Integrates the core and cross-cutting competencies, along with the student's specific area of study, to facilitate the transition from the academic setting into the professional world of public health. Students apply and integrate their knowledge and expertise through case studies taken from current public health issues in local, national, and global environments.

Prerequisite: Public health core courses.

### PHCJ 695 Community Practicum (1-4)

Provides opportunities for students to integrate the multiple skills they have learned with the practice of public health in a community setting. Requires 100 hours of practicum for each unit of credit to receive a grade. A maximum of 4 units applicable to a degree program.

## PHILOSOPHY

### PHIL 616 Seminar in the Philosophy of Science (2-4)

Explores the meaning(s) of scientific facts, laws, and theories—with special attention to the development of scientific thought, the nature of scientific discovery, contrasting interpretations of scientific inquiry, and the ethical ramifications of scientific discovery. Additional projects required for third and fourth units.

## PHARMACOLOGY

### PHRM 501 Pharmacology and Therapeutics SD (4)

Principles of drug action: drug receptors, absorption and fate of drugs, drug toxicity, and drug development. Systematically considers the pharmacology and clinical applications of the major drugs used by dental patients. Simulations illustrating the effects of drugs in animals and man.

### PHRM 503 Clinical Pharmacology in Dentistry (2)

Review of medications used for the treatment of common medical disorders, and their effect on the management of the dental patient—including the use of local anesthetics, antibiotics, and analgesics.

### PHRM 511 Medical Pharmacology (1.5)

Principles of drug action: drug receptors, absorption and fate of drugs, drug toxicity, and drug development. Systematically considers the pharmacology and therapeutic value of drugs used in medicine. Demonstration and laboratory exercises illustrating the effects of drugs in man or animals.

### PHRM 512 Medical Pharmacology (1.5)

Principles of drug action: drug receptors, absorption and fate of drugs, drug toxicity, and drug development. Systematically considers the pharmacology and therapeutic value of drugs used in medicine. Demonstration and laboratory exercises illustrating the effects of drugs in man or animals.

### PHRM 513 Medical Pharmacology (1.5)

Principles of drug action: drug receptors, absorption and fate of drugs, drug toxicity, and drug development. Systematic consideration of the pharmacology and the therapeutic value of drugs used in medicine. Demonstration and laboratory exercises illustrating the effects of drugs in man and animals. Continues PHRM 511 and 512.

### PHRM 514 Medical Pharmacology (2)

Principles of drug action: drug receptors, absorption and fate of drugs, drug toxicity, and drug development. Systematic consideration of the pharmacology and the therapeutic value of drugs used in medicine. Demonstration and laboratory exercises illustrating the effects of drugs in man or animals. Continues PHRM 511, 512, and 513.

### PHRM 534 Topics in Pharmacology for Dentistry (2)

Lectures and discussions dealing with pharmacologic agents used in dentistry. Emphasizes current agents used in dental anesthesia, both local and general. Offered on demand.

### PHRM 535 Clinical Pharmacology (3)

### PHRM 544 Topics in Advanced Pharmacology (3)

Lectures and discussions dealing with current advanced concepts in pharmacology, such as structure-action relationships, mechanisms of action, and metabolism and detoxification of therapeutic agents. Offered on demand.

### PHRM 545 Laboratory in Advanced Pharmacology (1-2)

Experimental studies illustrating the didactic material presented in PHRM 544. Offered on demand.

### PHRM 554 Neuropharmacology (4)

Systematically discusses drugs that affect primarily the nervous system, with major emphasis on mechanism of action.

**PHRM 555 Laboratory in Neuropharmacology (1)**

Experimental studies illustrating the didactic material presented in PHRM 554.

**PHRM 564 Cardiovascular and Renal Pharmacology (3)**

Systematically discusses drugs that affect primarily the cardiovascular and renal systems, emphasizing mechanism of action. Offered on demand.

**PHRM 565 Laboratory in Cardiovascular and Renal Pharmacology (1)**

Experimental studies illustrating the didactic material presented in PHRM 564. Offered on demand.

**PHRM 584 Drug Metabolism and Biochemical Pharmacology (4)**

Discusses in detail the fate of drugs in the body, together with related aspects of biochemical actions of drugs.

**PHRM 585 Laboratory in Drug Metabolism and Biochemical Pharmacology (1)**

Experimental studies illustrating the didactic material presented in PHRM 584.

**PHRM 586 Toxicology (3)**

Discusses deleterious effects of drugs and common poisons. Measures that can be taken to combat poisoning. Offered on demand.

**PHRM 605 Integrative Biology Graduate Seminar (1)**

Seminar coordinated by the Departments of Anatomy and of Pharmacology and Physiology. Reports from current literature and presentation of student and faculty research on various aspects of regulatory and integrative biology as applied to cells, tissues, organs, and systems. Students and faculty expected to participate in a discussion and critical evaluation of the presentation.

**PHRM 684 Special Problems in Pharmacology (2-6)**

Assignments in literature reviews and/or laboratory exercises.

**PHRM 697 Research (1-6)**

**PHRM 698 Thesis (1-6)**

**PHRM 699 Dissertation (1-6)**

**PHRM 891 Pharmacology Elective (1.5-12)**

## **PHYSIOLOGY**

**PHSL 501 Neurophysiology DN (3)**

Presents basic principles in neurophysiology to enhance understanding of normal and pathophysiological function.

**PHSL 502 Basic Neurophysiology (3)**

Intensive four-week course that includes rudimentary neuroanatomy, electrophysiology of neurons, skeletal muscle, synaptic transmission, sensory systems, and motor control. Discusses higher functions, such as sleep and brain electrical activity.

**PHSL 503 Biochemical Foundations of Physiology (4)**

Engenders an appreciation of the molecular processes as a foundation for adequate understanding of physiology. Reviews biomolecules, enzymology, and metabolism. Introduces regulatory motifs, genetic principles, and expression of genetic information by employing examples relevant to dentistry.

**PHSL 504 Physiological Systems of the Human Body (5)**

Physiological bases of normal function. Lectures and laboratory demonstrations illustrating the physiological principles and systems in man.

**PHSL 505 Homeostatic Mechanisms of the Human Body (5)**

Physiological basis of homeostatic control mechanisms. Lectures and laboratory demonstrations illustrating how the various systems of the body are controlled.

**PHSL 506 Advanced Physiology and Pathophysiology for Nurse Anesthetist I (5)**

Overview of physiology and pathophysiology (cell, neuro, cardiovascular, pulmonary, GI, renal, endocrine, and reproductive systems).

**PHSL 507 Advanced Physiology and Pathophysiology for Nurse Anesthetist II (4)**

Part II of physiology and pathophysiology (cell, neuro, cardiovascular, pulmonary, GI, renal, endocrine, and reproductive systems).

PHSL 506

**PHSL 511 Medical Physiology I (1, 2)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 512 Medical Physiology II (4)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 513 Medical Physiology (2)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 515 Medical Physiology (1)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 516 Medical Physiology (2.5)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 517 Medical Physiology (3)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 518 Medical Physiology (1)**

Presents normal functions of the various systems of the human body—providing a proper understanding of mechanisms of disease, with their concomitant pathophysiology. Lecture, audiovisual demonstrations, computer models, and limited animal studies provide knowledge of the physiological principles.

**PHSL 521 Medical Physiology GS I (0.5-6)**

Physiological basis of normal and selected pathological conditions, modern concepts of homeostasis, and negative feedback-control systems. Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

Prerequisite: PHSL 537.

**PHSL 522 Medical Physiology GS II (0.5-6)**

Physiological basis of normal and selected pathological conditions, modern concepts of homeostasis, and negative feedback-control systems. Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.  
Prerequisite: PHSL 521.

**PHSL 523 Medical Physiology GS III (0.5-6)**

Physiological basis of normal and selected pathological conditions, modern concepts of homeostasis, and negative feedback-control systems. Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.  
Prerequisite: PHSL 522.

**PHSL 524 Medical Physiology GS IV (0.5-6)**

Physiological basis of normal and selected pathological conditions, modern concepts of homeostasis, and negative feedback-control systems. Units taught per quarter depend on number of lectures taught in School of Medicine curriculum for that term.

**PHSL 525 Current Concepts of Cellular and Molecular Neural-Endocrine Interactions (3)**

Studies the nervous and endocrine systems as they work together to maintain homeostasis under normal and pathological conditions. Introduces the nature of this interaction, emphasizing understanding of basic cellular and molecular events. Taught alternate years. Consent of instructors required.  
Prerequisite: PHSL 521, PHSL 522, PHSL 523.

**PHSL 533 Advanced Physiology and Pathophysiology (4)**

Studies human physiology and pathophysiology at the cellular and systemic levels. Uses videos and laboratory demonstrations. Designed for graduate students in all applied and basic sciences.

**PHSL 534 Advanced Physiology and Pathophysiology II (3)**

Studies basic human physiology and pathophysiology at the cellular and systemic levels. Uses videos and laboratory demonstrations. Designed for students in all applied and basic sciences.

**PHSL 537 Neuroscience (4)**

Integrated approach to the fundamentals of neuroanatomy and neurophysiology, with applications to clinical neurology.

**PHSL 538 Neuroscience (4)**

Integrated approach to the fundamentals of neuroanatomy and neurophysiology, with applications to clinical neurology.  
Prerequisite or concurrent: PHSL 537.

**PHSL 541 Cell and Molecular Biology (4)**

Life processes fundamental to animal, plant, and microorganisms; a graduate-level introduction. Lecture 3 units, laboratory 1 unit each term. Offered alternate years.  
Prerequisite: Organic chemistry and one of the following: biochemistry, molecular biology, or cell biology. Physics desirable.

**PHSL 542 Signal Transduction (3)**

Part of PHSL 503. Comprehensively describes signal transduction pathways and other cellular regulatory mechanisms that form the basis of receptor-response phenomena.  
Prerequisite: CMBL 501.

**PHSL 543 Cell-Cell Interaction (3)**

Discusses the role of cell-cell interactions and the mechanism for cellular specialization, emphasizing the immune system.

**PHSL 544 Cell and Molecular Neurobiology (3)**

Part of PHSL 503. A comprehensive, introductory, lecture-based course that introduces basic biomedical science graduate students to the cellular and molecular concepts that underlie most forms of neurobiological phenomena. Selected topics to be studied include the molecular and cellular components of neuronal excitation and transmission, neuronal development, differentiation and aging, axonal injury and nerve regeneration, and specific cases of nervous system pathology.

**PHSL 550 Properties of the Nervous System (3)**

Critically analyzes current neurophysiological data, attempting to characterize the vertebrate nervous system. Emphasizes selected topics covering neuronal topology, intracellular recordings, ultrastructure, evoked potentials, and neurotransmitter chemistry. Offered alternate years.

Prerequisite or concurrent: PHSL 511, PHSL 512; consent of instructor.

**PHSL 553 Introduction to Electronics and Computing as Applied to Biomedical Research (4)**

Introduces electronics and computers for recording and analyzing data in biomedical research. Analog and digital electronics covered at a modular level—with practical application of the instrumentation and applications of computers to control and recording. Constructs and uses mathematical/computer models of biomedical systems and fitting of models to data. Laboratory activities in electronics and computer simulation.

Prerequisite or concurrent: PHSL 511, PHSL 512; college-level physics; calculus is helpful.

**PHSL 554 Computer Simulation of Biomedical Systems (3)**

How to construct and apply computer models of complex biomedical systems, with applications in areas such as biochemistry, physiology and pharmacology, toxicology, population dynamics, and epidemiology. Emphasizes model quality and compares model behavior with laboratory data. Laboratory activities with simulation software.

**PHSL 555 Biology of Cancer Lecture (3)**

Interdisciplinary approach to study of the causation, characterization, and prevention of cancer. Offered alternate years.

**PHSL 556 Biology of Cancer Laboratory (2)**

Introduces techniques essential to research investigations in cancer. Offered alternate years.

Prerequisite or concurrent: PHSL 511, PHSL 512.

**PHSL 558 Physiology of Exercise and Inactivity (3)**

Effects of exercise and inactivity on the physiological systems of the body, including the skeletal, muscular, cardiovascular, respiratory, and others. Emphasizes the cellular and molecular levels. Studies not only immediate changes in the body necessary to meet the demands of exercise but also long-term adaptive changes. Offered alternate years.

**PHSL 560 Bone Physiology (3)**

Studies bone cells and bone as an organ. Lectures and discussions include functions of bone cells, effects of growth factors, hormones and physical forces on bone, growth and repair of bone, osteoporosis, and other clinical conditions involving bone. Reviews current literature.

**PHSL 576 Vascular Smooth Muscle (3)**

Studies the structure and function of vascular smooth muscle and the mechanism(s) controlling its function.

**PHSL 577 Cardiac Physiology (3)**

Didactic course that deals with the developmental, transitional, and adult anatomy of the heart; as well as its electrical, mechanical, and metabolic processes in health and disease. Offered alternate years.

Prerequisite or concurrent: PHSL 511, PHSL 512; an advanced physiology course or consent of instructor.

**PHSL 578 Vascular Physiology (3)**

Studies the physical principles that govern flow of fluids (rheology), functional anatomy, and reflexes of the peripheral circulation. Also considers the role of the peripheral vasculature in the control of cardiac output and blood flow to special regions, such as the brain, heart, skeletal muscle, etc. Offered alternate years.

Prerequisite or concurrent: PHSL 511, PHSL 512; an advanced physiology course or consent of instructor.

**PHSL 584 Readings in Neurophysiology (2)**

Seminar tracing the development of twentieth century ideas about the nervous system. Emphasizes the writings of three early neurobiologists (Sherrington, Pavlov, Herrick) in context with classical and current understanding of the nervous system.

Prerequisite: PHSL 537; consent of the instructor.

**PHSL 587 Physiology of Reproduction (2)**

Studies the development of the male and female reproductive systems, neural and hormonal control of reproductive function, fetal development, and parturition. Offered alternate years.

Prerequisite or concurrent: PHSL 511, PHSL 512 or PHSL 521, PHSL 522.

**PHSL 588 Pathophysiology (4)**

Provides graduate students with an integrated understanding of normal human physiology and the most common pathological changes that occur throughout the lifespan. Focuses on using pathophysiological concepts to explain clinical observations and management.

**PHSL 595 Readings in Physiology (1-4)**

Assigned reading and conferences on special problems in physiology.

**PHSL 604 Current Topics in Perinatal Physiology (1)**

A weekly, one-hour seminar presented by outstanding visiting scientists and intramural faculty in various fields of physiology. Offers graduate students a varied series of lecture topics and a perspective on cutting-edge research ideas in an informal setting. Attendance and a report required. This written report, based on a topic presented during the course period and arranged with the course instructor, provides an opportunity for in-depth study in an area of interest for the student. A maximum limit of 2 units/year, and a total of 4 units for the period of the graduate program.

**PHSL 605 Integrative Biology Graduate Seminar (1)**

Coordinated by the Departments of Anatomy and of Pharmacology and Physiology. Reports from current

literature and the presentation of student and faculty research on various aspects of regulatory and integrative biology as applied to cells, tissues, organs, and systems. Students and faculty participate in a discussion and critical evaluation of the presentation.

**PHSL 694 Special Problems in Physiology (2-4)****PHSL 697 Research (1-8)****PHSL 698 Thesis (1)****PHSL 699 Dissertation (2-4)****PHSL 741 Physiology of Bone (1)**

Nature of bone mineral and matrix; bone biomechanics and mineralization, bone growth, healing and remodeling, pathological bone resorption; bone calcium homeostasis; dynamics of bone adaptation.

**PHSL 891 Physiology Elective (1.5-12)****PHYSICAL THERAPY****PHTH 485 Therapeutic Exercise II (3)**

Expands the concepts learned in PHTH 484 Therapeutic Exercise I and PHTH 527 Scientific Foundations for Therapeutic Exercise. Students learn to formulate and implement exercise prescriptions based on impairments and protocols. Uses case studies to design treatment progressions for the extremities. Emphasizes spinal stabilization approaches for the axial skeleton.

**PHTH 495 Research I (3)**

Introduces the scientific methods in health-science research. Focuses on the major steps of the research process: problem identification, literature review, conceptual framework, identification of variables, statement of hypothesis, experimental design, and analysis and presentation of data. Includes critical evaluation of research literature.

**PHTH 496 Research II (2)**

Applies the research process to problems in related specific allied health fields. Develops a research proposal.

**PHTH 497 Advanced Clinical Experience (1-12)**

Advanced clinical experience in selected areas of professional practice.

**PHTH 499 Physical Therapy Independent Study (1-3)**

Project or paper to be submitted on a topic of current interest in an area related to physical therapy. Regular meetings provide the student with guidance and evaluation. Elected on the basis of need or interest.

**PHTH 501 Neurology I (2)**

Physical therapy management of balance disorders affecting adults across the spectrum of life. Considers the neuromuscular, musculoskeletal, cardiopulmonary, and vestibular systems. Emphasizes the application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and measurement of outcomes.

**PHTH 502 Neurology II (3)**

Physical therapy management of neurological disorders affecting adults across the spectrum of life. Considers a variety of pathologies—including stroke, traumatic brain injury, multiple sclerosis, Parkinson's disease, Guillian-Barre syndrome, and amyotrophic lateral sclerosis. Emphasizes application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and measurement of outcomes.

**PHTH 503 Neurology III (3)**

Physical therapy management of spinal cord injury affecting adults across the spectrum of life. Emphasizes application and integration of theoretical constructs, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and measurement of outcomes.

**PHTH 506 Exercise Physiology (3)**

Principles and application of human response to exercise, including body composition. Tests and measurements. Techniques of physical fitness. Cardiorespiratory considerations. Exercise prescriptions.

**PHTH 508 PT Communication and Documentation (2)**

Introduces principles and dynamics of professional communication. Emphasizes basic skills needed in a clinical setting, including but not limited to the following: evaluations, progress notes, discharge summary, workers compensation, prescriptions, patient interviews, letters of justification, electric formats, and legal considerations related to all aspects of the above.

**PHTH 509 Physical Therapy Modalities (3)**

Introduces fundamental principles, physiological effects, and application techniques in the use of physical therapy modalities. Physical agents—including thermotherapy, cryotherapy, ultrasound, and electrotherapy procedures. Manual modalities—including basic massage techniques, myofascial and trigger point release. Lecture and laboratory.

**PHTH 510 Kinesiology (3)**

Functional anatomy of the musculoskeletal system. Analyzes and applies the biomechanics of normal and pathological movement of the human body. Includes introduction to palpatory techniques for bone, ligament, and muscle. Lecture and laboratory.

**PHTH 511 Clinical Orthopaedics (2)**

The first in a series of courses in the orthopaedic tract curriculum. Presents the basis for patient management by the physical therapist for patients with functional impairments stemming from orthopaedic pathologies for all body regions. Introduces and considers the components of patient/client management throughout the course—including examination, evaluation, diagnosis, prognosis, intervention, and outcomes. Includes lectures by orthopaedic surgeons to enhance

understanding of surgical procedures utilized in the management of the orthopaedic patient, with emphasis on postoperative rehabilitation.

#### PHTH 512 Clinical Psychiatry (2)

Introduces mental and personality disorders. Reviews abnormal behaviors commonly found in a clinical setting.

#### PHTH 513 Therapeutic Procedures (3)

Blood pressure determination and aseptic techniques. Principles and utilization of posture and body mechanics. Selection and use of wheelchairs, ambulation aids, and other equipment. Progressive planning toward complete activities of daily living.

#### PHTH 514 Manual Muscle Testing (3)

Methods of evaluating muscle strength and function by use of specific and gross manual muscle tests. Lecture, demonstration, and laboratory.

#### PHTH 515 Topics in Rehabilitation (1-6)

Lecture and discussion of current topics relating to the practice of physical therapy. Content varies from quarter to quarter. (May be repeated for additional credit for a maximum 6 quarter units.)

#### PHTH 517 Movement Science (2)

An integrative approach to movement impairment and neuromuscular approaches in the evaluation and management of musculoskeletal pain syndromes. Identifies clinical reasoning and examination of movement patterns. Extensive laboratory practice with patient/case studies.

#### PHTH 518 Aspects of Health Promotion (2)

Dynamics of physical therapy involvement in health promotion for the individual and the community. Factors in the promotion of a healthful lifestyle, including cardiovascular enhancement, stress reduction and coping mechanisms, nutritional awareness, weight management, and substance control. Students design and implement community-based health education program.

#### PHTH 519 Locomotion Studies (3)

Develops competencies in the identification and evaluation of normal and abnormal gait patterns, progressing to development of treatment programs. Includes current prosthetic and orthotic devices and their assistance with gait.

#### PHTH 521 Orthopaedics I (3)

Basic theory of extremity mobilization. Each joint presented in relationship to articular and periarticular structures that determine joint function and dysfunction. Evaluation and mobilization techniques.

#### PHTH 521A Orthopaedics 1A (3)

Discusses physical therapy examination, evaluation, and interventions relevant to the clinical management of musculoskeletal conditions of the upper extremities. Presents instruction related to orthopaedic physical therapy interventions—including joint mobilization, hand splinting, and other selected techniques for specific upper extremity musculoskeletal conditions. Utilizes lecture, laboratory, and case studies to develop and integrate these concepts.

#### PHTH 521B Orthopaedics 1B (3)

Students further develop concepts of examination, differential diagnosis, prognosis, and interventions that are expanded to patients with musculoskeletal conditions of the lower extremities. Utilizes lecture, laboratory, and case studies to develop and integrate these concepts.

#### PHTH 522 Orthopaedics II (3)

Basic theory of spinal evaluation and treatment techniques. General principles of functional anatomy, tissue and joint biomechanics, pathology, and treatment.

#### PHTH 523 Orthopaedics III (3)

Basic theory of spinal evaluation and treatment techniques. General principles of functional anatomy, tissue and joint biomechanics, pathology, and treatment. Medical exercise training.

**PHTH 524 Hand Rehabilitation for the Physical Therapist (2)**

Functional anatomy and pathophysiology in the diagnosis and treatment of the forearm, wrist, and hand. Common problems. Integrates scientific knowledge base into treatment choice. Rational and general treatment concepts for, but not limited to, fractures, joint derangement, stiffness, flexor and extensor multiple-system trauma, arthritis, and vascular disorders. Common surgical procedures involving the forearm, wrist, and hand; as well as basic concepts and practical application of static and dynamic splinting.

**PHTH 525 General Medicine (3)**

An understanding of medical and surgical disorders for the physical therapist. Basic pathology and/or etiology and clinical manifestations. Medical treatment for conditions within selected specialties of: endocrinology, arthritis, oncology, and integumentary management.

**PHTH 526 Cardiopulmonary (3)**

Basic pathology, etiology, and clinical manifestation of cardiopulmonary disorders commonly encountered by the physical therapist. Physical therapy management for cardiopulmonary conditions. Evaluation of cardiorespiratory function. General principles of formal cardiac and pulmonary rehabilitation programs. Basic ECG interpretation. Lecture and laboratory.

**PHTH 527 Scientific Foundations for Therapeutic Exercise (2)**

Analyzes physical, mechanical, and soft-tissue biomechanical considerations in the formulation of exercise prescriptions. Considers the neurophysiological basis of motor control and motor learning acquisition. Selects exercise modes and dosage for treatment of patients with musculoskeletal and neurological disorders and for the nonpathological individual.

**PHTH 528 Therapeutic Exercise I (2)**

Introduces the principles and foundational concepts of therapeutic exercise. Includes passive ROM, stretching exercises, resistance training, aerobic conditioning, and aquatic rehabilitation. Introduces the

Nagi and ICF disablement models to assist the student in selecting appropriate therapeutic exercise. Lecture and laboratory.

**PHTH 529 Pathokinesiology of Gait (3)**

Advanced observational analysis of normal and abnormal human locomotion, with comparison of pathological differences.

**PHTH 530 Therapeutic Exercise II (3)**

Expands the concepts learned in PHTH 528 Therapeutic Exercise I. Students learn to formulate and implement exercise prescriptions based on impairments and protocols. Uses case studies to design treatment progressions for the extremities. Emphasizes spinal stabilization approaches for the axial skeleton. Lecture and laboratory.

**PHTH 531 Soft-Tissue Mobilization (3)**

Helps practicing physical therapy clinicians optimize skills and refine selection of the most effective soft-tissue mobilization techniques to maximize specific musculoskeletal functional outcomes. Students learn new techniques and refine and master previously learned techniques through lecture, demonstration, practical examinations, and laboratory.

**PHTH 532 Biostatistics I (2)**

Fundamental procedures of analyzing and interpreting data. Sampling, probability, descriptive statistics, normal distribution, sampling distributions and standard error, confidence intervals and hypothesis testing, power, effect size. Introduction to epidemiological measures to estimate risk and select measures of clinical improvement.

**PHTH 533 Biostatistics II (2)**

Fundamental procedures for analyzing and interpreting data using common selected statistical tests: t-tests, chi-square, correlation, and regression. Introduces one- and two-way ANOVA, Mann-Whitney test, Wilcoxon signed-ranks test. Evaluates the importance of statistical findings from selected research studies.

**PHTH 534 Soft-Tissue Techniques (2)**

Trends in soft-tissue manipulation. Lecture, demonstration, and laboratory.

**PHTH 535 Research and Statistics I (3)**

In-depth study of research designs: their advantages and disadvantages, including pretest/posttest designs; posttest-only, control group designs; time series designs; factorial designs; randomized block and repeated-measures designs; and incomplete block designs. Introduces clinical trials, sequential research designs; and single case, experimental designs. Measures and analyzes validity and reliability. Survey-instruments(s) design. Power calculations for choosing appropriate sample sizes.

**PHTH 536 Research and Statistics II (3)**

Analyzes data using one-way ANOVA with multiple comparisons, factorial ANOVA designs, randomized complete and incomplete block designs, and repeated measures. Introduces multiple correlation and regression and model building using multiple regression techniques. Evaluates research literature that uses multivariate analysis for data analysis. Introduces nonparametric statistics. Interprets multivariate analysis computer output.

**PHTH 537 Research and Statistics III - Data Collection (3)**

Research-topic selection, literature review, proposal writing and approval. Research-data collection after proposal approval. Limited to Doctor of Science students in the Physical Therapy Program.

**PHTH 537A Research and Statistics III (3)**

Research-topic selection, literature review, proposal writing and approval. Research-data collection after proposal approval. Limited to Doctor of Science students in the Physical Therapy Program.

Prerequisite: PHTH 536; and consent of instructor.

**PHTH 537B Research and Statistics III (3)**

Research-topic selection, literature review, proposal writing and approval. Research-data collection after proposal approval. Limited to Doctor of Science students in the Physical Therapy Program.

Prerequisite: PHTH 536; and consent of program director or instructor.

**PHTH 538 Research and Statistics IV (3, 6)**

Individual arrangements for doctoral students to work with the instructor on analysis and presentation of research data. Student prepares manuscript presenting results of doctoral research study.

PHTH 537 or PHTH 537A, PHTH 537B; and consent of instructor.

**PHTH 539 Research and Statistics V (3)**

Individual arrangements for doctoral students to work with their dissertation chair and research guidance committee to submit a written doctoral dissertation in accordance with Faculty of Graduate Studies published guidelines, and to prepare and present an oral defense of their research findings.

**PHTH 541 Advanced Clinical Practice I (3)**

Student demonstrates and practices advanced examination, assessment, and treatment of the lumbar spine, pelvic girdle, and lower extremities. Lecture and demonstration.

**PHTH 542 Advanced Clinical Practice II (3)**

An evidenced-based course that covers current physical therapy practice relevant to adult neurological rehabilitation. Areas of emphasis include stroke rehabilitation, neuromuscular facial rehabilitation, dizziness and vertebral artery testing, cervicogenic dizziness, Parkinson's disease, and amputee management. Includes relevant literature, lecture, discussion, and laboratory sessions.

**PHTH 543 Advanced Clinical Practice III (3)**

Advanced clinical decision-making skills, with focus on patient classification, clinical-diagnosis practice parameters, and practice guidelines. Emphasizes development of clinical algorithms, clinical prognostic skills, and outcome measures.

**PHTH 544 Physical Therapy Business Development Concepts (1)**

Discussion and practice designed to enhance the knowledge of the practitioner who desires to own, manage, or direct a physical therapy practice or department. General trends, start-up considerations, HRM, finance, marketing research and development; learning to bill, collect, and interpret EOBs; coding and compliance issues (Medicare and state); and locating capital to finance the venture.

**PHTH 545 Orthopaedic Interventions: Mobilization of Peripheral Nerves and Diarthroidal Joints of the Extremities (3)**

Advanced study of the management of orthopaedic disorders of the extremities. Includes biomechanics, examination, and intervention relevant to the clinical management of the cervical spine and shoulder complexes—with emphasis on refining the upper-quarter screening examination. Clinical course that strengthens student's knowledge and application of mobilization techniques to the joints and nerves of the periphery. Lecture, laboratory sessions, and case studies.

**PHTH 546 Women's Health Issues I (3)**

Clinical aspects of women's health issues. How to develop a women's health program in the clinical setting. Introduces various pathologies and treatment strategies for specific diagnoses that could be encountered in the clinical setting. Women's health during adolescence, the reproductive years, and the geriatric years.

**PHTH 547 Women's Health Issues II (3)**

Advanced course further exploring women's health issues—including treatment strategies for women during various phases of their lives. Anatomy and physiology during adolescence, the reproductive years, and the geriatric years.

**PHTH 548 Function-Based Rehabilitation (3)**

Manual therapy approach for the treatment of common musculoskeletal problems integrating orthopaedic and neurological rehabilitation. Course based on a working knowledge of anatomy, muscle

balance theory, neurodevelopmental treatment (NDT), muscle length testing, soft-tissue mobilization (STM), and proprioceptive neuromuscular facilitation (PNF) principles. Emphasizes use of clinical reasoning during patient evaluation and patient management.

**PHTH 549 Vestibular Rehabilitation (3)**

Physical therapy evaluation and treatment planning strategies for individuals with vestibular pathologies resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and measurement outcomes.

**PHTH 550 Integrative Approach to Early Rehabilitation (3)**

Advanced study in acute and subacute rehabilitation as it applies to the early intervention of physical therapy. Emphasizes wound care management and treatment; cardiopulmonary assessment and treatment; ECG interpretation; and the evaluation process for acute rehabilitation, including spinal cord injury and stroke. Reviews comprehensive team approach, with utilization of neuropsychology and case management.

**PHTH 551 Advanced Orthopaedic Procedures I (3)**

Student demonstrates and practices advanced examination and treatment of the lumbar spine, pelvic girdle, and lower extremities.

**PHTH 552 Advanced Orthopaedic Procedures II (3)**

Student demonstrates and practices advanced examination and treatment of the cervical spine, shoulder girdle, and upper extremities.

**PHTH 553 Advanced Orthopaedic Procedures III (2, 3)**

Student demonstrates and practices advanced examination and treatment of the lumbar spine, thoracic spine, and rib cage. Additional laboratory project required for third unit.

**PHTH 555 Differential Diagnosis (2)**

Emphasizes information gathering from history taking, review of systems, and directed questioning, combined with a focused examination to establish a working diagnosis. Uses a hypothetico-deduction strategy to minimize misdiagnosis and teach problem solving—helping students develop a working list of all possible causes of symptoms, including those from mechanical and visceral origins. Emphasizes clinical pattern recognition for both musculoskeletal and nonmusculoskeletal disorders. Teaches strategies to differentiate between musculoskeletal and nonmusculoskeletal disorders. Highlights knowledge and skills related to screening for medical pathology in patients with musculoskeletal complaints of the lumbar spine, pelvis, lower extremities, thoracic spine, shoulder girdle, and upper extremities.

**PHTH 556 Cardiopulmonary Approaches to Assessment, Wellness, and Disease (3)**

Review of pathology, etiology, and clinical manifestations of cardiopulmonary disorders commonly encountered by the physical therapist. ECG interpretation and assessment. Practical strategies in the management of patients/clients at risk for chronic vascular disease. Comprehensive overview of the epidemiology, risk factor identification, assessment, and intervention to remediate or ameliorate risk and negative health effects of metabolic syndrome. Emphasizes evidence-based research to guide the development of assessment, prevention, and intervention strategies

**PHTH 557 Life Span Studies I: Infant through Adolescent (3)**

Sequential human development from neonate through adolescence, as applied to normal and abnormal neurological development. Includes concepts of prenatal and postnatal care, delivery, and neonatal assessment; developmental theories, infant reflex testing, and developmental milestones of the infant, toddler, child, and adolescent. Incorporates the interrelationship of the physical, perceptual, and motor components in treatment of the neurologically disabled patient.

**PHTH 558 Life Span Studies II: Developmental Disabilities (3)**

Discussion and demonstration of physical therapy diagnosis, assessment, and case management of clients with developmental disabilities—such as cerebral palsy, spina bifida, muscular dystrophy, and various other developmental disorders. Includes presentation and demonstration of pediatric NDT, sensory integration, spasticity management, and adaptive equipment options; as well as writing realistic, measurable objectives. Includes laboratory demonstrations.

**PHTH 559 Lifespan Studies III: Geriatrics (2)**

Reviews the normal physiologic and psychologic factors specific to the geriatric population—including aging of the musculoskeletal and sensory systems, diet and nutrition, the senior athlete, spiritual and psychosocial issues, and specific health topics—allowing the future clinician to assist patients with aging safely and gracefully.

**PHTH 560 Neurologic Upper Extremity Management (3)**

An evidence-based course that covers the functional implications of neurological pathologies and emphasizes current clinical management of the upper extremity. Topics include spasticity, soft tissue and joint mobilization, constraint-induced movement therapy, and proprioceptive neuromuscular facilitation.

**PHTH 561 Physical Therapy Administration (4)**

Principles of organization and administration in health care delivery. Multidisciplinary approach to patient management and patient-therapist relations. Administration of physical therapy services. Professionalism, medicolegal considerations, supervision and training of support personnel. Departmental design and budgetary considerations.

**PHTH 562 Physical Therapy Business Development (2)**

Covers the personal and business requirements in developing a physical therapy private-practice clinic—including, but not limited to, market analysis, start-up costs, personal hiring, and proforma budgets. Culminates in the presentation of a full business plan.

**PHTH 563 Scientific Inquiry I (2)**

Introduces students to research terminology and methodology needed in evidence-based physical therapy practice. Emphasizes the function of the research question, hypotheses, study design, sampling, study variables, measurement, reliability, validity, and statistics in the analysis and evaluation of research literature. Prerequisite to Scientific Inquiry II, which focuses on critical analysis and evaluation of research literature as a foundation to evidence-based practice.

**PHTH 564 Scientific Inquiry II (2)**

Provides experience in critical analysis and evaluation of research literature as a foundation for evidence-based physical therapy practice. Students analyze and evaluate studies—rationale, population, sampling and randomization techniques, sample sizes, appropriateness of the research design, choice of data analysis, and tables and graphic content—to determine the level of evidence of research articles. Provides experience in interpreting statistical outcomes and applying findings to practice. Culminates in students' oral presentation of the critical analysis and evaluation experience.

**PHTH 565 Sports Physical Therapy I (1)**

Advanced study of the neuromusculoskeletal system as it applies to the athletic population. Selected competencies of advanced clinical practice for the sports physical therapist, as outlined by the American Board of Physical Therapy Specialties in the Description of Advanced Clinical Practice in Sports Physical Therapy. Emphasizes the development and implementation of a sports medicine program, preparticipation physical examination, medical emergencies in the sports medicine setting, criteria for return to play, types and frequency of sport specific injuries, pregame sideline/courtside set up, techniques of athletic tape application to various body locations, and on-field examinations.

**PHTH 566 Sports Physical Therapy II (1)**

Advanced study of the neuromusculoskeletal system as it applies to the athletic population. Selected competencies of advanced clinical practice for the sports physical therapist, as outlined by the American Board of Physical Therapy Specialties in the Description of

Advanced Clinical Practice in Sports Physical Therapy. Emphasizes recognition and intervention for emergency medical conditions, including abdominal trauma, cardiac pathology, and respiratory emergencies in the athletic/sports medicine arena; protective equipment utilized in athletics; environmental conditions of heat, cold, altitude, and playing surfaces; and criteria utilized for determination of return to play.

**PHTH 568 Advanced Diagnosis and Management: Patellofemoral (1)**

Advanced study of the patellofemoral joint as it applies to the general and athletic populations. Emphasizes examination, classification, diagnosis, and management of patellofemoral pain syndromes. Physical therapy intervention primarily focused on evidence-based treatment approaches, including: joint mobilization, passive range of motion, therapeutic exercise, and a variety of bracing and taping techniques. First course in a series of three courses dealing with the diagnosis and management of lower-limb disorders.

**PHTH 569 Advanced Diagnosis and Management of Foot and Ankle Disorders (1)**

Advanced study of diagnosis and management of foot and ankle disorders. Clinical course designed to strengthen knowledge and application of orthotic therapy. Effective protocols for managing and trouble shooting orthotic therapy patients.

**PHTH 571 Physical Therapy Practicum I (1)**

A two-week, full-time (40 hours/week) clinical education assignment done in an affiliated clinic, with an emphasis in any of a variety of settings: acute care, outpatient care, neurorehabilitation, orthopaedics, geriatrics, pediatrics, sports medicine, and preventive care/wellness, etc. Full-time supervision by a licensed physical therapist required. Activities include direct patient care, team conferences, demonstrations, special assignments, and observation. The first of three practicums. Scheduled at the end of the first academic year.

**PHTH 572 Physical Therapy Practicum II (1.5)**

A three-week, full-time (40 hours/week) clinical education assignment done in an affiliated clinic, with

an emphasis in any of a variety of settings: acute care, outpatient care, neurorehabilitation, orthopaedics, geriatrics, pediatrics, sports medicine, and preventive care/wellness, etc. The second of three practicums required, scheduled at the end of the Autumn Quarter of the second academic year. Full-time supervision by a licensed physical therapist required. Activities include direct patient care, team conferences, demonstrations, special assignments, and observation.

#### PHTH 573 Physical Therapy Practicum III (1.5)

A three-week, full-time (40 hours/week) clinical education assignment done in an affiliated clinic, with an emphasis in any of a variety of settings: acute care, outpatient care, neurorehabilitation, orthopaedics, geriatrics, pediatrics, sports medicine, and preventive care/wellness, etc. The third of three practicums required, scheduled at the beginning of the Summer Quarter of the third academic year. Full-time supervision by a licensed physical therapist required. Activities include direct patient care, team conferences, demonstrations, special assignments, and observation.

#### PHTH 575 Orthopaedics IV (1)

A four-quarter, in-progress course that integrates examination procedures taught in the orthopaedic curriculum. As a culminating event, each student performs a comprehensive laboratory practical that includes the five elements of patient/client management, as described in the Guide to Physical Therapy Practice: examination, evaluation, diagnosis, prognosis, and intervention.

#### PHTH 581 Research Applications I (2)

Student implements the research proposal, initiated through pilot testing of research-study procedures and data collection tools. Student gathers data in the appropriate research laboratory or practice setting, with the help of a faculty research advisor and/or clinical mentor.

#### PHTH 582 Research Applications II (2)

Student analyzes data with the help of a statistician. Presents research results in the form of a written research report, an oral presentation, and a poster appropriate for a professional meeting.

#### PHTH 595 Applied Research I (1)

Students pilot test research proposal in a practice setting and test procedures and data forms.

#### PHTH 596 Applied Research II (2)

Students implement research proposal in a practice setting, analyze computer data, and prepare a preliminary research report.

#### PHTH 597 Applied Research III (1)

Students prepare and present a research report both in written and oral formats—including graphics, tables, Power-Point presentations, poster, and abstract.

#### PHTH 598 Advanced Specialty Tracks (3)

Presents the newest clinical treatment applications over the spectrum of the patient population in the field of physical therapy. Includes ortho, neuro, and general medicine.

#### PHTH 599 Comprehensive Examination (0)

Doctor of Physical Therapy Science degree written examination requirement, to be completed at the end of the second didactic year. Successful completion required for continuation in the program. Examination consists of four domains: education, research, clinical practice/basic science, and ethics.

Prerequisite: PHTH 535 or AHCJ 530; PHTH 536 or AHCJ 531; AHCJ 599.

#### PHTH 627 Clinical Reasoning and Critical Thinking in Physical Therapy (3)

Presents theories, research, and clinical applications related to the "cognitive engine" that drives the decision-making process in the evaluation and management of orthopaedic physical therapy patients. Utilizes purposeful and goal-directed thinking that challenges the learner to ask and answer higher-level analytical and evaluative questions. Provides a clinically relevant and intentional line of questioning used for problem solving in the absence of pattern recognition. Provides a framework and foundation that will assist in solidifying the reasoning process of data gathering, data interpretation, evaluation methodology, treatment planning, treatment execution, and prognosing. Assists

in providing the learner with a defensible means to justify and rationalize clinical decisions that result in wise actions.

### PHTH 628 Movement Science of the Upper Quarter (3)

Presents theories, research, and clinical applications related to the pathomechanics of spine and upper extremity injuries. Utilizes clinical reasoning and evidence-based practice to support the role of muscular imbalance in the pathogenesis of common orthopaedic disorders of the upper quarter. Provides an understanding of how faulty biomechanics can contribute to spine and upper extremity injuries. Provides a foundation to assist in the diagnosis of movement-related impairments. Supervises students in hands-on laboratory sessions to teach analysis of normal and abnormal movement patterns of the upper quarter. Provides laboratory time to develop skills needed to perform a thorough evaluation of movement dysfunction focusing on the upper quarter. Assists in the development and design of specific interventions aimed at changing movement dysfunctions of the upper quarter.

### PHTH 629 Movement Science: Lower Quarter Biomechanical Relationships (3)

Presents theories, research, and clinical applications related to the pathomechanics of lumbar spine and lower extremity injuries. Utilizes clinical reasoning and evidence-based practice to support the role of muscular imbalance in the pathogenesis of common orthopaedic disorders of the lower quarter. Provides an understanding of how faulty biomechanics can contribute to lumbar spine and lower extremity injuries. Provides a foundation to assist in the diagnosis of movement-related impairments. Supervises students in hands-on laboratory sessions to teach analysis of normal and abnormal movement patterns of the lower quarter. Provides laboratory time to develop skills needed to perform a thorough evaluation of movement dysfunction focusing on the lower quarter. Assists in the development and design of specific interventions aimed at changing movement dysfunctions of the lower quarter.

### PHTH 630 Kinetics of the Human Body: Physics-Based Kinesiology (3)

Examines the mechanical basis of movement in the human body in relation to the length of muscles; the tension developed by muscles under various conditions; the anatomical arrangement of the origin and insertion of the bones and joints; and the biomechanics of complex movement, such as gait and balance. Uses physics principles to explain the mechanics of movement in the body. Topics include: linear movement, rotational movement, work and energy, muscle-length tension relationships, single and multiple joint biomechanics, and gait and balance.

Prerequisite: PMPT 477 or PHTH 477 or PHTH 629 or PHTH 529.

### PHTH 634 Cervical Spine (3)

Expands and applies the framework for examination and intervention to patients with musculoskeletal conditions of the cervical spine. Presents knowledge and skills—evidence-based and best practice; and the format for evaluation and treatment of a patient using advanced orthopedic skills for the cervical spine. Differentiates clinical conditions and enhances clinical decision making—thus helping the student integrate manual therapy into a patient's plan of care. Links clinical practice guidelines to the International Classification of Functioning, Disability, and Health. Emphasizes clinical guidelines for impairment and function-based diagnosis, examination, and intervention.

### PHTH 697 Research and Statistics V - Preliminary Dissertation (3)

Individual arrangements for doctoral students to work with their dissertation chair and research guidance committee to submit a substantial and acceptable preliminary written doctoral dissertation—either in the traditional formal dissertation or multiple chapter format—in accordance with published guidelines of the Faculty of Graduate Studies, and in the format of the journal in which the candidate hopes to publish. Students prepare and present an oral defense of their research findings.

Prerequisite: PHTH 538.

**PHTH 701A Physical Therapy Affiliation IA (4)**

Seven-week clinical assignment to be completed during the third year in affiliated clinical settings. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, special assignments, in-services, lectures, demonstrations, and conferences. Student's overall performance facilitated and assessed by the academic coordinators of clinical education, with input and feedback received from clinical instructors who provide direct instruction. Student receives a grade for Affiliation IA upon completion of Affiliation IB (PHTH 701B)

**PHTH 701B Physical Therapy Affiliation IB (1)**

Three-week clinical assignment to be completed during the third year in affiliated clinical settings. Completes PT Affiliation IA. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, special assignments, in-services, lectures, demonstrations, and conferences. Student's overall performance facilitated and assessed by the academic coordinators of clinical education, with input and feedback by the clinical instructors who provide direct instruction. Student receives grade for Affiliation IA and IB upon completion of Affiliation IB.

**PHTH 702 Physical Therapy Affiliation II (5)**

Nine-to-eleven-week clinical assignment to be completed during the third year in affiliated clinical settings. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, special assignments, in-services, lectures, demonstrations, and conferences. Student's overall performance facilitated and assessed by the academic coordinators of clinical education, with input and feedback from clinical coordinators who provide direct instruction.

**PHTH 703 Physical Therapy Affiliation III (5)**

Nine-to-eleven-week clinical assignment to be completed during the third year in affiliated clinical settings. Emphasizes a variety of clinical settings: acute

care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, special assignments, in-services, lectures, demonstrations, and conferences. Student's overall performance facilitated and assessed by the academic coordinators of clinical education, with input and feedback received from clinical coordinators who provide direct instruction.

**PHTH 731 Advanced Orthopaedic Studies (4)**

Specialty track that provides opportunity to pursue, in greater depth, various topics related to current trends in orthopaedic physical therapy; and to develop advanced clinical skills, where appropriate.

**PHTH 732 Advanced Neurologic Studies (4)**

Specialty track that provides opportunity to pursue, in greater depth, various topics related to current trends in neurologic physical therapy; and to develop advanced clinical skills, where appropriate.

**PHTH 733 Advanced General Medicine Studies (4)**

Specialty track that provides opportunity to pursue, in greater depth, various topics related to current trends in general medicine physical therapy; and to develop advanced clinical skills, where appropriate.

**PHYSICAL MEDICINE/  
REHABILITATION****PMRH 891 Physical Medicine and Rehabilitation  
Elective (1.5-18)****PROSTHODONTICS****PROS 500 Prosthodontic Literature Review (2)**

Discusses assigned topics from classic and current prosthodontic and course-related literature, led by students and moderated by faculty member in charge. Repeated registrations required to fulfill the total units.

**PROS 501 Removable Partial Prosthodontics Literature Review (2)**

Discusses assigned topics from classic removable partial denture literature, led by students and moderated by faculty member in charge.

**PROS 502 Complete Denture Prosthodontics Literature Review (2)**

Discusses assigned topics from classic complete-denture literature, led by students and moderated by faculty member in charge.

**PROS 505 Patient Presentation Seminar (Prosthodontics, Implant, Perio) (1)**

Presents patient treatment. Discusses alternate methods of rehabilitation, as well as related literature. Repeated registrations required to fulfill the total units.

**PROS 515 Practice Teaching in Prosthodontics (1, 2)**

Teaching experience in the areas of fixed and removable prosthodontics. Repeated registration required to fulfill the total units.

**PROS 525 Dental Materials Science (2)**

Elements of materials science. Properties of structural solids, metals, ceramics, and polymers related to their structure—using basic laws and principles from physics, chemistry, and engineering science.

**PROS 527 Clinical Application of Dental Materials (2)**

Discusses clinical application and manipulation of dental materials. Identifies and explains specific clinical problems and behavior based on the acquired knowledge of basic properties.

**PROS 546 Occlusion and Morphology (2)**

Lecture, seminar, and laboratory course that includes waxing techniques and axial and occlusal morphology of natural teeth. Concepts of occlusal function and dysfunction related to prosthodontic therapy.

**PROS 547 Occlusion: Principles and Instrumentation (2)**

Continues PROS 546—emphasizing occlusal equilibration, jaw movements, determinants of occlusion, and articulators commonly used.

**PROS 555 Removable Partial Prosthodontics (2)**

Lecture, seminar, and laboratory course covering principles, concepts, and techniques used to design and fabricate removable partial dentures.

**PROS 556 TMJ Function and Dysfunction (1)**

Provides residents with information about the function and dysfunction of the temporomandibular joint and associated structures. Prepares residents to obtain history, perform clinical examination, recognize disorders, and prescribe treatment.

**PROS 557 Advanced Removable Partial Prosthodontics (2)**

Advanced clinical and laboratory procedures, emphasizing intracoronal attachments, rotational path, and alternate removable partial-denture design.

**PROS 565 Complete Denture Prosthodontics (2)**

Clinical and laboratory procedures for the fabrication of complete dentures, including setting and balancing denture teeth.

**PROS 566 Advanced Complete Denture Prosthodontics (2)**

Lecture and clinical course, with seminar covering the treatment of immediate denture and overdenture, and treatment of difficult and unusual complete denture situations.

**PROS 575 Fixed Partial Prosthodontics (2)**

Tooth preparation for and fabrication of extracoronal restorations and fixed prostheses, including partial coverage gold crowns, complete coverage gold crowns, pinledge retainers, metal-ceramic crowns, metal-ceramic pontics, and sanitary pontics.

**PROS 576 Advanced Fixed Partial****Prosthodontics I (MC Aesthetics) (2)**

Clinical and laboratory procedures, emphasizing advanced metal-ceramic restorations.

**PROS 595 Maxillofacial Prosthetics (2)**

Design and fabrication of obturators for partial maxillectomy patients, both edentulous and dentulous. Introduces fabrication of extraoral prostheses.

**PROS 604 Literature Review in Implant****Dentistry for Prosthodontists (2)**

Gives the postdoctoral student a deeper understanding of the research and literature currently available on the restoration of implants. Emphasizes biomechanics of implant restorations. Repeated registrations required to fulfill the total units.

**PROS 634 Diagnosis and Treatment Planning (2)**

Didactic and clinical aspects of diagnosis and treatment planning for patients with complex dental problems. Repeated registrations required to fulfill the total units.

**PROS 637 Geriatric Dentistry (1)**

Lectures selected to enhance the knowledge base in the expanding area of elder care. Problems of chronic diseases combined with multiple drug regimens that complicate care for this population.

**PROS 696 Scholarly Activity in****Prosthodontics (1)**

Selected didactic, clinical, and/or laboratory activity developed by the program director or a designated program faculty member. Primarily designed for students to fulfill the certificate requirements for scholarly activity/research in prosthodontics. Multiple registrations may be needed to complete these activities.

**PROS 697A Research (1)**

Student identifies a research project, prepares a proposal, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

**PROS 697B Research (1, 3)**

Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

**PROS 698 Thesis (2)****PROS 710 Clinical Practice of Prosthodontics (6)**

Advanced clinical practice in the treatment of individuals with fixed, removable, maxillofacial, or implant prostheses. A minimum of 180 clock hours per quarter. Repeated registrations required to fulfill total units.

**PREVENTIVE MEDICINE****PRVM 514 Clinical Preventive Medicine (1.5)**

A year-long course that teaches medical students the effective clinical preventive medicine approaches used in the practice of medicine today. Provides medical students with the useful framework for understanding epidemiology, public health, preventive concepts, disease screening, lifestyle modification, and risk factor identification and reduction. Fosters basic understanding of prevention in the clinical context.

**PRVM 515 Clinical Preventive Medicine (1.5)**

A year-long course that teaches medical students the effective clinical preventive medicine approaches used in the practice of medicine today. Provides medical students with the useful framework for understanding epidemiology, public health, preventive concepts, disease screening, lifestyle modification, and risk factor identification and reduction. Fosters basic understanding of prevention in the clinical context.

**PRVM 516 Clinical Preventive Medicine (1)**

A year-long course that teaches medical students the effective clinical preventive medicine approaches used in the practice of medicine today. Provides medical students with the useful framework for understanding epidemiology, public health, preventive concepts, disease screening, lifestyle modification, and risk factor identification and reduction. Fosters basic understanding of prevention in the clinical context.

PRVM 891 Preventive Medicine Elective (1.5-18)

## PSYCHOLOGY

PSYC 226 Lifespan Development (4)

Life-span course emphasizing the physical, mental, emotional, social, and religious/moral development from conception through adulthood, aging, and death.

PSYC 299 Directed Study (1-4)

PSYC 305 Psychological Foundations of Education (4)

Explores educational psychology through application of development and learning theories to instruction, achievement motivation, self-esteem, classroom management, supportive and disruptive processes on school sites, campus standards, disciplinary practices, legal/ethical issues. Requires research on effective educational practices and related foundations.

Additional research for graduate credit.

Prerequisite: General psychology.

PSYC 404 Psychological Tests and Measurements (3)

Develops competencies and understandings for selecting, administering, and interpreting the major types of standardized tests and inventories used in psychology and education. Presents theoretical principles and issues together with hands-on applications. Practicum required.

PSYC 405 Psychology of Human Relations (2, 3)

Human relations for career and personal success. Topics include the effective use of human resources, communication, leadership skills, decision making, stress management, assertiveness training, managing conflicts, career development, and achieving balance.

PSYC 460 The Exceptional Individual (3)

Studies the determinants, characteristics, problems, and adjustments of individuals who deviate markedly from the norm in their mental, physical, emotional, or social aptitudes, traits, and tendencies. Emphasizes education and career planning. Open to upper division graduate and postgraduate students only.

PSYC 479 Human Neuropsychology (4)

Introduces brain-behavior relationships, including cerebral asymmetry, disconnection syndromes, disorders of memory and language, biological substrates of affective behavior, motor and perceptual dysfunction, and drug actions.

PSYC 499 Directed Study (1-4)

PSYC 501 Advanced Statistics I (4)

General introduction to statistical analysis—detailing the descriptive/inferential distinction; and covering sampling distributions (e.g., normal, binomial), hypothesis testing, and basic parametric and nonparametric techniques.

PSYC 502 Advanced Statistics II (4)

Thorough introduction to regression analysis and analysis of variance (ANOVA), with emphasis on hypothesis testing and the development of general models that partition overall variability. Topics covered include simple and multiple regression, one-way and factorial, repeated-measures ANOVA, and analysis of covariance. Evaluation of assumptions and nonparametric alternatives.

Prerequisite: PSYC 501; or consent of instructor.

PSYC 503 Advanced Multivariate Statistics (4)

Broad introduction that applies linear (matrix) algebra to maximum likelihood estimation generally, using several important multivariate statistical techniques, including but not limited to multivariate analysis of variance, multivariate regression, path analysis and structural equations causal modeling, log-linear models, and time series analysis; evaluates alternatives to maximum likelihood estimation.

Prerequisite: PSYC 502; or consent of instructor.

PSYC 504 Research Methods for Clinical Psychologists (4)

Designed for students in the Psy.D. program. Examines research methods appropriate for application to clinical psychology—from the formulation of research problems to the design, execution, and report of findings. Includes experimental, quasi-experimental, case study, and programmatic evaluation designs.

**PSYC 505 Research Methods in Psychological Science (4)**

Comprehensive examination of research methods in psychology—from the formulation of research problems to the design, execution, and report of findings. Includes experimental and quasi-experimental designs, as well as field and case studies. The exploratory-confirmatory distinction in scientific epistemology, and its implications for research and theory. Reviews and critically analyzes research literature from various areas of contemporary psychological science.

**PSYC 511 Psychometric Foundations (3)**

Advanced orientation to psychological instruments; their theoretical derivation, construction, and use. Emphasizes reliability, validity, and factor structures.

**PSYC 512 Assessment I (2)**

Instruction in administering, scoring, interpreting, and report writing relevant to various adult and child intelligence and achievement instruments, such as WAISIII, WISC-III, WPPSI-R, KBIT, Stanford-Binet, WIAT, PIAT, KABC, WRAT-3, and the Woodcock-Johnson batteries. Consideration of the empirical reliability and validity data for each instrument.

Prerequisite: PSYC 511; or consent of instructor.

**PSYC 512L Assessment I, Practice Laboratory (1)**

Supervised experiences in administering, scoring, interpreting, and report writing relevant to various adult and child intelligence and achievement instruments.

**PSYC 513 Assessment II (2)**

Instruction in administering, scoring, interpreting, and report writing relevant to various adult and child objective personality instruments—including MMPI-2, MMPI-A, MACI, PIC, 16PF, CDI, BDI, and BAI. Consideration of the empirical reliability and validity data for each instrument.

Prerequisite: PSYC 512; or consent of instructor.

**PSYC 513L Assessment II, Practice Laboratory (1)**

Supervised experiences in administering, scoring, interpreting, and reporting relevant to various adult and child objective personality instruments.

**PSYC 516 Neuropsychological Assessment III (2)**

Administering, scoring, interpreting, and report writing relevant to various adult and child neuropsychological instruments. Considers the empirical reliability and validity data for each instrument. Focuses on the use of flexible test collections tailored to assess neuropsychological disorders (such as depression and psychosis) and neurological disorders (such as dementia, attention disorders, and stroke). Emphasizes neuropsychological test integration, case conceptualization, and diagnostic inference.

**PSYC 516L Neuropsychological Assessment III Lab (1)**

Supervised experiences in administering, scoring, interpreting, and report writing relevant to various adult and child neuropsychological instruments.

**PSYC 524 History, Systems, and Philosophy of Psychology (2)**

Builds on the coverage of the history and systems of psychology provided in most undergraduate courses. Focuses on how different approaches to psychology (e.g., the schools of psychology) have defined the field, what topics and information they have considered as a part of psychology, and what mechanisms and criteria for advancing the field these approaches have considered acceptable. Examines current trends in light of their contributions to the development of psychology as a science and as a profession.

**PSYC 526 Ethics and Legal Issues in Clinical Psychology (3)**

Overviews current ethical and legal standards for the conduct of psychology. Guidelines and standards drawn from APA Ethical Guidelines, Standards for Providers of Psychological Services, and Standards for Educational and Psychological Tests, as well as relevant California and civil licensing laws.

**PSYC 527 Psychological/Emotional Aspects of Health and Disease (2)**

Provides students with an understanding of the psychological/emotional contributions/consequences of diseases and health conditions most commonly seen by health psychologists, including cardiovascular, endocrine, gastrointestinal, immunological, neoplasia, and immunological problems.

**PSYC 535 Psychological Study of Religion (3)**

Surveys research areas, methods, and issues in the study of religion and spirituality from a psychological perspective. Emphasizes understanding of religious phenomena relative to the scientific study of human behavior and psychological functioning. Examines the philosophical foundations of research in psychology, sociology, and anthropology in order to provide an eclectic approach to research in this area. Topics include ethnographic approaches to religious experience, conversion, religiosity, faith and moral development, worship, rituals, and cross-cultural manifestations of religion.

**PSYC 536 Seminar in Psychology and Religion (2)**

Focuses on an aspect of integration of psychology and religion.

**PSYC 537 Applied Behavioral Medicine (2)**

Provides students with a set of applied tools for use in the practice of behavioral medicine/health psychology, including: assessment and treatment of risky health behaviors, such as use of tobacco; consultation skills; relaxation training; preparation of notes for medical settings; symptom management; motivational interviewing; brief diagnostic assessments; determination of capacity; and time-limited psychotherapy.

**PSYC 538 Fundamentals of Forensic Psychology (2)**

Introduces students to the fundamental requirements and preparation to perform competently in the legal system. Emphasizes training and preparation required

for practice as a forensic psychologist. Emphasizes both a clinical and biosocial psychological viewpoint. Attention given to cultural, diversity, and ethical issues.

**PSYC 539 Psychology and Law (3)**

Provides an overview of the foundational and philosophical distinctions between psychological and legal knowledge, their underlying assumptions, and divergent world views. Gives attention to how each investigates identical situations and arrives at opposite conclusions. Emphasizes the psychological and legal intersections relative to criminal behavior, mental health issues, and psychopathy. Students systematically study the complexity of psychological and legal interactions through case studies.

**PSYC 545 Cognitive Foundations (4)**

Reviews the major theories, methods, and findings in perception, cognition, and memory, including an introduction to contemporary cognitive science. Applications to the understanding of normal as well as abnormal behavior and psychological interventions.

**PSYC 546 Clinical Applications in Primary Care (2)**

Provides a brief review of disease types commonly seen in primary care, with an emphasis on presentation of somatic conditions. Additional topics include clinical interventions in the primary care setting, introduction to medical terminology and shorthand in primary care, interpreting common laboratory values, consultation/liaison services, physician perspectives of psychological needs of patients, and effective collaboration between physician and psychologist.

**PSYC 547 Health Psychology Assessment (2)**

Covers the use of assessment instruments for research and clinical applications. Topics include behavioral medicine interviewing, the administration and interpretation of standardized instruments such as the Million Behavioral Health Inventory, quality-of-life assessment, and integrated report writing for medical settings.

**PSYC 551 Psychobiological Foundations (4)**

Basic course in psychobiology. Neuroanatomy, the physiology of the neuron, and neural communication. Includes consideration of structure and function of visual, auditory, and somesthetic sensation and perception. Concludes with coverage of the structure and function of motor systems. Considers visuospatial, visuoperceptual, and visuoconstructive disorders; and apraxia.

**PSYC 553 Cognitive Neuroscience (4)**

An advanced overview of the discipline that bridges cognitive psychology and neuroscience. Begins with neuroanatomy and the methodologies of electrophysiology and structural and functional imaging; and examines their application to perception, memory, language, cognitive control, attention, decision making, and motivational and emotional behavior.

**PSYC 554 Health Psychology (4)**

Overviews the field of clinical health psychology. The biopsychosocial model and the management of chronic illness used as a framework in which to address assessment and intervention principles, cultural influences, bioethics, and dying and death issues.

**PSYC 555 Psychopharmacology (2)**

Advanced coverage of neurotransmitter systems, with particular emphasis on the mechanism of action of various psychoactive substances.

**PSYC 556 Biofeedback (4)**

Intensive learning experience in biofeedback concepts, terms, and techniques—including biofeedback applications for treating and diagnosing a wide range of psychophysiological disorders, such as headaches, temporomandibular disorder, Raynaud's disease, chronic lower-back pain, and irritable bowel syndrome. Training in diaphragmatic breathing and biofeedback-assisted relaxation strategies for teaching patient self-regulation of tension-related problems. Hands-on laboratory experience and training in thermal, electromyographic, and electrodermal activity of biofeedback.

Prerequisite: PSYC 581, PSYC 581L.

**PSYC 558 Psychological and Forensic Assessment and Evaluation of Competencies (3)**

Studies the legal and psychological analyses of competence. Gives attention to conceptual models of assessment and evaluation, with special emphasis on empirical foundations. Students examine pertinent, legally relevant assessment and evaluation instruments, as well as their development and use—focusing on reliability and validity issues. Includes competence to stand trial, insanity plea, guardian and conservatorship, consent to treatment, capacity to parent, malingering, waiver of rights, and other related issues requiring inquiry, assessment, and evaluation.

**PSYC 564 Foundations of Social and Cultural Psychology (4)**

Surveys research, theory, and applications of social psychology within the context of other areas of psychology and related disciplines. Emphasizes scientific study of how people think about, influence, and relate to each other—both at the interpersonal and intergroup levels—within the context of cultural, social, and related phenomena. Applications to areas of psychology, such as clinical, health, and organizational psychology; as well as to economics, politics, and social issues.

**PSYC 566 Cross-Cultural Psychology (4)**

Examines cross-cultural variations in psychological processes and human behavior in light of the role of culture and implications for the universality of psychological principles. Examines cross-cultural research, theory, and interventions in terms of their implications for the understanding of cross-cultural variations and the universality of psychological knowledge; the implications for the study and practice of psychology in a multicultural society and interdependent world. Includes basic areas—such as personality, developmental, and social psychology—as well as clinical and other professional areas.

**PSYC 567 Human Diversity (3)**

Surveys theories, research, and interventions dealing with culture and ethnicity in mental health and clinical practice. Focuses on working with ethnic minorities,

while emphasizing the effects of culture, ethnicity, and socioeconomic factors in the behavior of all ethnic minority as well as mainstream individuals and groups. The role of cultural and socioeconomic factors in psychological processes, psychopathology, psychological assessment, and intervention examined within the context of human diversity and community.

#### PSYC 571 Adult Psychopathology (4)

Advanced overview of the major theoretical and empirical approaches to the understanding and classification of adult psychopathology in light of contemporary psychological research and the context of culture. The DSM-IV provides the basic structure for analysis of the various major types of adult psychopathology, including schizophrenia and other psychotic disorders, mood disorders, anxiety disorders, dissociative disorders, personality disorders, adjustment disorders, and cognitive disorders.

#### PSYC 572 Child Psychopathology (2)

Advanced overview of the major theoretical and empirical approaches to the understanding and classification of child psychopathology in light of contemporary psychological research and the context of culture. The DSM-IV provides the basic structure for analysis of the major types of child psychopathology, including: mental retardation, learning disorders, pervasive developmental disorders, conduct disorders, and eating disorders.

Prerequisite: PSYC 571; or consent of instructor.

#### PSYC 575 Foundations of Human Development (4)

Considers human development from conception through old age—including personality as well as social, cognitive, and physiological aspects of development. Emphasizes contemporary developments in research, theory, and applications.

#### PSYC 581 Psychological Treatment I: Behavioral and Cognitive Therapies (2)

Basis for understanding behavior therapy, the concepts and techniques of classical conditioning and operant conditioning interventions, and the empirical data regarding the efficacy of this treatment orientation.

Prerequisite: PSYC 571; and consent of instructor.

#### PSYC 581L Psychological Treatment I: Behavioral and Cognitive Therapies Practice (1)

Supervised experience observing and/or engaging in behavior therapy in laboratory assignments.

#### PSYC 582 Psychological Treatment II: Psychodynamic Therapy (2)

Basis for understanding psychodynamic therapy (from psychoanalysis to object relations therapy to short-term psychodynamic therapy), the concepts and techniques of various types of psychodynamic interventions, and the empirical data regarding the efficacy of this treatment orientation.

Prerequisite: PSYC 571; or consent of instructor.

#### PSYC 582L Psychological Treatment II: Psychodynamic Therapy Practice (1)

Supervised experience observing and/or engaging in psychodynamic therapy.

#### PSYC 583 Psychological Treatment III: Humanistic/Phenomenological Approaches to Therapy (2)

Overviews the various humanistic/phenomenological approaches to therapy, including client-centered and Gestalt therapies. Student develops an understanding of concepts and techniques of the various approaches, as well as the empirical data regarding the efficacy of these treatment orientations.

Prerequisite: PSYC 582; or consent of instructor.

#### PSYC 583L Psychological Treatment III: Humanistic/Phenomenological Therapy Practice (1)

Provides the student with supervised experience observing and/or engaging in humanistic/phenomenological therapy.

**PSYC 584 Psychological Treatment IV: Conjoint and Group Psychotherapies (2)**

Provides the student with understanding of conjoint and group psychotherapies. Presents the concepts and techniques of conjoint and group psychotherapies, as well as the empirical data regarding the efficacy of these interventions.

Prerequisite: PSYC 571; or consent of instructor.

**PSYC 584L Psychological Treatment IV: Group Psychotherapies Practice (1)**

Supervised experience observing and/or engaging in conjoint or group therapy.

Prerequisite: PSYC 571. Corequisite: PSYC 584.

**PSYC 591 Colloquia (1)**

Students participate in a series of lectures presented by distinguished speakers in the various areas of scientific and professional psychology. Students prepare a report critiquing each of the presentations attended.

Enrollment is for 1 unit each year for three years.

**PSYC 594 Readings in Psychology (1-4)**

**PSYC 595 Directed Research (1-13)**

Academic credit for research leading to the second-year project. Requires a total of 13 units.

**PSYC 596 Directed Study (1-4)**

Academic credit for specific research projects arranged between individual students and faculty members. May include readings, literature review, and/or laboratory research. Not to be used for the second-year project.

**PSYC 597 Supervised Research (1)**

Academic credit for research for those students who have not yet advanced to doctoral candidacy. Not to be used for the second-year-project.

**PSYC 604 Advanced Topics in Multivariate Analyses (2)**

Advanced topics in statistical analysis and research methods in psychology.

Prerequisite: PSYC 503, PSYC 505.

**PSYC 646 The Nature of Emotion (3)**

Seminar course that considers the fundamental questions in the scientific investigation of the emotions—including the theories of emotional taxonomy, the expression of emotion in neurophysiological and muscular systems, facial expression and the universality of emotions, the cognitive foundations of emotional processing and expression, and emotional memory.

Prerequisite: PSYC 545, PSYC 551; or consent of instructor.

**PSYC 654 Behavioral Neurology (2)**

Examines the intersection of the fields of neurology and neuropsychology. Includes general principles of neurology, neuropathology, and neurological examinations—with emphasis on material useful for the neuropsychologist to function as a member of a clinical team.

**PSYC 655 Principles of Psychophysiology (3)**

Seminar course in basic methodological, inferential, and conceptual issues in psychophysiology. Beginning with principles of inference and psychophysiological constructs, the course considers each of the major physiological systems—including the electrodermal, skeletomotor, electrocortical, cardiovascular, pulmonary, and sexual response systems. Incorporates major papers, both current and historical, relevant to these systems and the major conceptual lines of research.

**PSYC 656 Seminar in Cortical Functions: Frontal Cortex (2)**

Readings and discussions on the neuroanatomy and function of the frontal lobe cortex, the neurological and neuropsychological disorders, assessment strategies, and treatment strategies associated with frontal lobe damage.

Prerequisite: PSYC 552; or consent of instructor; corequisite course(s), if any.

**PSYC 657 Seminar in Cortical Functions: Posterior Cortex (2)**

Readings and discussions on the neuroanatomy and function of the parietal, temporal, and occipital lobe

cortices; neurological and neuropsychological disorders; assessment strategies; and treatment strategies associated with damage to the posterior portions of the brain.

Prerequisite: PSYC 552; or consent of instructor; corequisite course(s), if any.

#### PSYC 658 Seminar in Subcortical Function (2)

Readings and discussions on the neuroanatomy and function of the major subcortical structures—including the basal ganglia, limbic system, thalamus, cerebellum, and brainstem. Seminar covers the neurological and neuropsychological disorders, assessment strategies, and treatment strategies associated with damage to these subcortical structures.

Prerequisite: PSYC 552; or consent of instructor; corequisite course(s), if any.

#### PSYC 674 Infant and Toddler Development (2)

Focuses on infant development from 0 through 36 months of age, examining milestones of cognitive, motor, and psychosocial development. Developmental scales and instruments that address these aspects of infant/toddler development examined within the context of assessment and intervention.

#### PSYC 676 Geropsychology (1)

Covers human development from late adulthood through old age and death, with particular emphasis on the physical and psychological factors inherent in the aging process. Social, cognitive, physical, and psychological changes examined in light of contemporary research and theory. Required for California psychology licensure.

#### PSYC 679 Universal Psychological Psychiatric Care (1, 2)

Provides opportunity to participate in an international institute featuring world leaders in psychological and psychiatric care. Topics include: world diagnostic guidelines, psychotropic medications, issues in treating ethnic populations (i.e., spiritually, psychologically, psychiatrically, and socially).

Emphasizes multidisciplinary teams in the practice of mental health services, as well as problems of mental health in immigrant populations. Students registering

for 1 unit participate in ten hours of lecture; those taking 2 units also develop a major paper on one of the institute topics.

#### PSYC 681 Clinical Supervision and Consultation (2)

Provides instruction in competency-based clinical supervision approaches, as well as in the basic models and related theories of supervision. Assists students to develop an awareness of the professional, ethical, and legal parameters related to supervision, including: principles, methods, and techniques of individual, group, and live supervision. Emphasizes consultation, including models and related theories. Gives attention to professional, ethical, and legal issues involved in interdisciplinary collaboration. Emphasizes issues of diversity in a multicultural context.

#### PSYC 681L Clinical Supervision and Consultation Laboratory (1)

Provides hands-on experience in clinical supervision and consultation as students under instructor supervision apply the knowledge, attitudes, and skills acquired didactically. Utilizes videotaping, class presentations, critiques, and simulations to increase student competency.

#### PSYC 682 Psychotherapy Supervision Practicum (1, 2)

A supervised practice experience in psychotherapy supervision. Enhances the supervision trainee's awareness of what experiences and personal tendencies s/he brings to the process of supervising, how to increase his/her skills in managing the supervisory relationship to the benefit of the supervisee and the trainee's own professional development, and how to enrich his/her understanding of reciprocal meanings and concepts. Provides information that can be used by the student in making decisions about further training in psychotherapy supervision and possibly about pursuing a specialty in psychotherapy supervision.

Prerequisite: PSYC 681; or consent of instructor.

### PSYC 683 Management and Professional Practice (1)

Seminar course in management and professional practice. In a variety of settings, exposes students to different management processes; as well as to professional, ethical, and legal requirements. Emphasizes management of integrated health and mental health care- delivery systems. Focuses on varied aspects of professional practice, including the roles psychologists play in developing organizational skills needed to function effectively in the changing health care marketplace.

### PSYC 684 Human Sexual Behavior and Treatment (1)

Human sexuality in contemporary society. Physiological, psychological, sociocultural, and developmental factors associated with human sexuality. Interventions for sexual dysfunctions and sexual well-being. Fulfills California state licensing requirements for psychologists.

### PSYC 685 Drug Addiction and Therapy (2)

Overviews the definitions, incidence, detection, assessment, effects, and ethical/legal/therapeutic management of substance abuse. Fulfills California state licensing requirements for psychologists.

### PSYC 686 Child, Partner, and Elder Abuse (2)

Overviews the definitions, incidence, detection, assessment, effects, and the ethical, legal, and therapeutic management of child, partner, and elder/ dependent-adult abuse. Perpetrator and victim characteristics, including cultural and ethnic diversity factors. Controversies regarding assessment techniques, diagnoses, sequelae syndromes, interventions, and forensic issues. Fulfills California state licensing requirements for psychologists.

### PSYC 694 Seminar in Advanced Topics in Psychology (1-4)

### PSYC 695 Issues in Clinical Psychology (1-4)

Seminar course that examines current issues of clinical knowledge and the application of that knowledge as required for the competent practice of clinical psychology.

### PSYC 696 Psy.D. Doctoral Research (1-8)

Course covers both the Psy.D. research proposal through to the final Psy.D. project defense and completion.

Prerequisite: PSYC 502, PSYC 504; and admission to Psy.D. degree program.

### PSYC 697 Doctoral Research (1-2)

Academic credit for dissertation research. A total of 30 units required.

### PSYC 721 Practicum Preparation I (3)

Required for all Psy.D. and Ph.D. degree students. Helps students learn beginning assessment and counseling skills. Incorporates demonstrations to facilitate learning. Prepares graduate students for both internal and external practicum.

### PSYC 781 Internal Practicum (2)

Required unit for Psy.D. degree students; elective clinical training experience for Ph.D. degree students. Second-year practicum provides students with clinical training before they enter the formal practicum sequence. May be repeated three times for a total of 8 units.

### PSYC 782 External Practicum I (4)

Provides students with a pre-internship level of clinical psychology training that will be more intensive, extensive, and continuous than anything they have previously experienced in the academic/clinical aspects of the program. A highly integrated component in the student's entire sequence of training and education at Loma Linda University. Provides (a) access to greater numbers of practicing psychologists who can serve as valid role models; (b) further education and experience in the areas of psychological assessment, diagnostic

conceptualizations, and scientifically based treatment regimens; and (c) additional training with regard to the ethical, legal, and professional standards of the profession of clinical psychology.

**PSYC 783 External Practicum II (4)**

**PSYC 784 External Practicum III (4)**

**PSYC 785 External Practicum IV (4)**

**PSYC 786 External Practicum V (4)**

**PSYC 795 Directed Clinical Experience (1-3)**

For students who have finished their external practicum and pre-internship but who still desire further clinical training before going on internship. Also open to those occasional students who are not a part of the doctoral degree program but who are seeking a particular clinical experience available through the department. Clinical experience individually designed according to the needs and desires of the student and under the direction of a member of the department's faculty. May be repeated to a maximum of 8 units.

**PSYC 798 Pre-Internship (4)**

Elective clinical experience for students who have successfully completed the practicum year. May be repeated to a maximum of 16 units.

**PSYC 799 Internship (0.5, 1)**

Must be repeated to a total of 4 units.

Prerequisite: Advancement to candidacy and completion of all academic course work.

**PSYC 799A Internship (5)**

A one-year internship completed at either an APA- or APPIC-approved placement. Limited to students who begin their internship mid-Summer Quarter (usually the middle of July). Requires 250 contact hours of clinical experience. Student registers initially for 5 units and registers the following Summer Quarter for an additional 5 units.

**PSYC 799B Internship (10)**

A one-year internship completed at either an APA- or APPIC-approved placement. Limited to students who begin their internship either at the beginning of Summer Quarter or the beginning of Fall Quarter. Requires 500 contact hours per quarter of clinical experience. Student registers for 10 units per quarter.

**PSYCHIATRY**

**PSYT 514 Psychopathology (1, 3)**

Intensive introduction to medical disorders and their treatment. Building on understanding of the neural substrates of normal behavior, emphasizes abnormal brain findings in the mental disorders, along with the social and psychological consequences of the disorders. Includes an introduction to psychotherapeutic approaches and psychiatric medications.

**PSYT 521 Fundamentals of Behavioral Science (2)**

A lecture covering subjects vital to providing compassionate, perceptive medical care. Topics include doctor-patient communication, ethnic and cultural issues, identifying abuse stages of life, dying and palliative care, sexuality, and understanding the determinants of personality.

**PSYT 522 Fundamentals of Behavioral Science (1)**

A lecture covering subjects vital to providing compassionate, perceptive medical care. Topics include doctor-patient communication, ethnic and cultural issues, identifying abuse stages of life, dying and palliative care, sexuality, and understanding the determinants of personality.

**PSYT 599 Psychiatry Directed Study (1.5-18)**

**PSYT 701 Psychiatry Clerkship (1.5-9)**

Third-year, six-week psychiatry clerkship includes five weeks divided between two psychiatry treatment sites, and one week at an addiction treatment site. Clerkship experiences offer broad and varied training in

the treatment of psychiatric problems of adults and children. Students participate in an interactive, case-based seminar series.

#### PSYT 891 Psychiatry Elective (1.5-18)

Offers fourth-year medical students the opportunity to take electives with psychiatry faculty in child and adult settings. An intensive reading/discussion course in religion and psychiatry.

### PHYSICAL THERAPIST ASSISTANT

#### PTAS 201 Anatomy (4)

Anatomy of the human body, with emphasis on the neuromuscular and skeletal systems, including anatomical landmarks. Basic neuroanatomy of the central nervous system.

#### PTAS 203 Applied Kinesiology (3)

Introduces functional anatomy of the musculoskeletal system. Applies biomechanics of normal and abnormal movement in the human body. Lecture and laboratory.

#### PTAS 204 Applied Gait (1)

Introduces normal phases of gait. Identifies common gait abnormalities. Clinical application towards therapeutic exercises and gait training. Lecture and laboratory.

#### PTAS 205 Introduction to Physical Therapy (1)

Physical therapy practice and the role of the physical therapist assistant in providing patient care. Quality assurance. Interpersonal skills. Introduces the multidisciplinary approach. Familiarizes the student with health care facilities and government agencies.

#### PTAS 206 Documentation Skills (1)

Introduces basic abbreviations, medical terminology, chart reading, and note writing.

#### PTAS 212 Physical Therapy Procedures (3)

Principles of basic skills in the physical therapy setting. Goniometry. Sensory- and gross-muscle testing. Mobility skills in bed and wheelchair and transfer training. Gait training and activities of daily living. Body mechanics, positioning, and vital signs. Identifies

architectural barriers. Teaching techniques for other health care providers, patients, and families. Wheelchair measurement and maintenance. Lecture and laboratory.

#### PTAS 224 General Medicine (3)

Introduces general medicine conditions, including pathology and management of medical problems. Diseases of the body systems, including urinary, reproductive, digestive, circulatory, endocrine, and musculoskeletal. Theoretical principles and practical application of respiratory techniques, exercises, and postural drainage. CPR certification must be obtained before end of term.

#### PTAS 225 Neurology (3)

Introduces neurological conditions, including pathology and management of medical problems of stroke, head injury, Parkinson's disease, spinal cord and nerve injuries, and other conditions.

#### PTAS 226 Orthopaedics I (3)

Introduces common orthopaedic conditions, pathologies, and surgical procedures involving the peripheral joints. Introduces joint mobilization. Procedures and progression of therapeutic exercises for each specific joint covered as these exercises relate to tissue repair and healing response. Practical laboratory includes integration of treatment plans and progressions.

#### PTAS 227 Therapeutic Exercise (2)

Introduces therapeutic exercise theories and practical applications. Tissue response to range of motion, stretch, and resistive exercise. Laboratory covers practical applications of various types of exercise techniques and machines used in the clinics, and a systematic approach to therapeutic exercise progression.

#### PTAS 231 Physical Therapy Modalities (3)

Basic physical therapy modalities—including heat and cold application, hydrotherapy and massage, pool therapy, physiology and control of edema, stump wrapping, standard precautions, and chronic pain management. Lecture and laboratory.

**PTAS 236 Applied Electrotherapy (3)**

Principles and techniques of electrotherapy procedures, including basic physiological effects. Indications and contraindications for specific electrotherapy modalities. Practical application and demonstration of modalities in a laboratory setting.

**PTAS 238 Wound Care (1)**

Normal structure and function of the skin. Pathology of the skin, including problem conditions, burns, and wounds. Lecture and laboratory to include wound identification, measuring, dressing, treatments, and debridement. Model wounds used for hands-on training.

**PTAS 241 Applied Pediatrics (2)**

Normal and abnormal development, from conception to adolescence. Emphasizes developmental sequence, testing, and treatment of neurological and orthopaedic disorders. Practical laboratory.

**PTAS 243 Applied Geriatrics (3)**

Introduces various aspects of geriatric care. Wellness care and adaptation to exercise modalities. Procedures pertaining to the geriatric patient. Diagnosis and aging changes that affect function in geriatric rehabilitation.

**PTAS 244 Introduction to Athletic Training for the Physical Therapist Assistant (1)**

Introductory study of the neuromusculoskeletal system as it applies to the athletic population. Student develops and implements a sports medicine program and participates in physical examination. Medical emergencies in the sports medicine setting, criteria for return to play, types and frequency of sport specific injuries, pregame sidelines/courtside setup, techniques of applying athletic tape to various body locations, and on-field examinations.

**PTAS 251 Orthopaedics II (3)**

Introduces common orthopaedic conditions, pathologies, and surgical procedures of the spine. Treatments, procedures, and progression of therapeutic exercises of the spine as related to tissue repair and healing response. Practical laboratory includes integration of treatment plans and progressions.

**PTAS 252 Applied Neurology (3)**

Introduces techniques to facilitate neurodevelopmental treatment, proprioceptive neuromuscular facilitation, Brunnstrom, and principles of therapeutic exercise of the cardiac patient. Practical laboratory.

**PTAS 261 Physical Therapy Practice (1)**

Student observes evaluations, treatments, and various diagnoses; completes a resume and a state licensing application; and prepares and presents a case study and in-service. Billing procedures and third-party payors.

**PTAS 264 Applied Prosthetics and Orthotics (2)**

Introduces basic principles in the use of selected prosthetic and orthotic devices. Exposes student to various types of devices; discusses patient adjustment to devices. Examines indications and contraindications for orthotic and prosthetic use with patients seen in physical therapy.

Prerequisite: PTAS 203.

**PTAS 265 Professional Seminar (1)**

Contemporary theories and practices of physical therapy. Topics covered by faculty and guest lecturers include: sports taping, ortho taping, soft tissue, geriatric experience through affective learning. Lecture and laboratory.

**PTAS 275 Psychosocial Aspects of Health (2)**

Psychological and sociological reactions to illness or disability. Includes trauma, surgery, and congenital and terminal illness. Individual and family considerations.

**PTAS 291 Physical Therapist Assistant Practicum (1)**

Two-week assignment to be completed during the Winter Quarter in an affiliated clinical setting. Emphasizes patient and staff working relationships. Awareness of patient disorders and limited application of physical therapy techniques. Forty clock hours per week of supervised clinical experience.

**PTAS 293 Physical Therapist Assistant  
Affiliation I (6)**

One six-week assignment to be completed during the Spring Quarter. Students exposed to a variety of clinical settings. Forty clock hours per week of supervised clinical experience. The combined total of twenty weeks—including PTAS 291, 293, 294, 295—of clinical experience prepares the student for entry-level performance.

**PTAS 294 Physical Therapist Assistant  
Affiliation II (6)**

One six-week assignment to be completed during the Summer Quarter. Students exposed to a variety of clinical settings. Forty clock hours per week of supervised clinical experience. The combined total of twenty weeks—including PTAS 291, 293, 294, 295—of clinical experience prepares the student for entry-level performance.

**PTAS 295 Physical Therapist Assistant  
Affiliation III (6)**

Second of two six-week assignments to be completed during the second Summer Quarter. Exposure to a variety of clinical settings. Forty clock hours per week of supervised clinical experience. The combined total of twenty weeks—including PTAS 291, 293, 294, 295—of clinical experience.

## **PUBLIC ADMINISTRATION**

**PUAD 665 Information Technology and  
Decision Science (4)**

**PUAD 668 Philosophy and Theory of Public  
Interest (4)**

Examines principal themes and arguments in Western political philosophy in relation to their application in social policy and public administration. Special attention given to the political ideologies of classic individualistic liberalism and civic republicanism as primary sources for an American public philosophy.

**PUAD 669 Intergovernmental and Public  
Relations (3)**

Requisites of sound public relations programs among government agencies and for communicating with the general public. Techniques for selecting, preparing, and disseminating governmental issues: media; social, psychological, and political principles.

**PUAD 674 Philanthropy and Development  
Management (3)**

Reviews the process and skills required to develop and manage philanthropic advancement, including planning. The role of administration in achieving development goals.

**PUAD 675 Public Financial Management and  
Budgeting (3)**

Addresses the role, dynamics, politics, and processes involved in the public budgetary function; and associated budget-preparation methods. Introduces students to advanced techniques employed by financial analysts in the public sector, including forecasting techniques, performance-measurement construction, activity-based costing, and expenditure-analysis techniques. Examines types and structure of contemporary revenue sources. Reviews the fiscal interrelationships among federal, state, and local levels of government.

**PUAD 676 Cost-Benefit Analysis (2)**

Addresses evaluation of government programs using cost-benefit analysis. Examines how scarce or unemployed resources should be priced, the choice of proper time-discount rates, treatment of income distribution issues, human investments, environment benefits, intergovernmental grants, and regulatory problems. Students examine case studies and complete an evaluation of a program using cost-benefit analysis.

**PUAD 677 Organizational Behavior (4)**

Introduces a wide variety of theories, models, strategies, and experiences in the aspect of management that focuses on understanding, predicting, and influencing human behavior in an organization. Develops skills with which thinking administrators can

find their own solutions to problems in specific situations and can function effectively with their employees in the work environment.

Prerequisite: SOWK 672.

#### PUAD 678 Public Administration Management (3)

Reviews the theoretical roots and values of public administration and how these influence perspectives in contemporary public administration management. Emphasizes understanding of the nature of public accountability and the achievement of public goals. Integrates the various theoretical frameworks and analytical tools used to support executive decision making, contingency development, and the implementation of planned change. Reviews diffusion strategies, future forecasting, PERT, and other administrative tools.

#### PUAD 688 Administrative Law (3)

Administrative perspectives on legal principles of agency rule making and adjudication; distinctions between informal and administrative actions; decision making; judicial review; and public control of administrative decisions.

#### PUAD 698 Doctoral Project (4)

Successful completion of the doctoral project requires demonstrated competency in two areas of public administration and social policy. Project design gives students an opportunity to reflect critically on the role and functions of public administration, demonstrate administrative problem solving, and exhibit their leadership capacities. Student chooses two areas of specialization; identifies a significant problem in each; applies appropriate research and administrative analysis; and formulates plausible solutions that illustrate a thorough understanding of the relevant technical, legal, ethical, and political issues. Project prepared in consultation with the student's doctoral guidance committee.

## RADIOLOGY

RADS 891 Radiology Elective (1.5-18)

## RADIATION MEDICINE

RDMN 891 Radiation Medicine Elective (1.5-18)

## RELIGION—ETHICAL STUDIES

#### RELE 400 Current Issues in Religion and Society (1-4)

Lecture series addresses a particular topic in bioethics from a variety of theological and religious perspectives. Focuses on current controversial topics in society and health care settings. May be repeated, depending on topic. Additional assignments required for second, third, and fourth units.

#### RELE 447 Religion and Society (2-4)

Explores biblical themes that call individuals of faith to foster social and personal transformation. Examines the dynamics involved when a religious movement evolves toward a religious institution. Models of relationship between church and the world. Additional project(s) required for third and fourth units.

#### RELE 455 Christian Understanding of Sexuality (2, 3)

Interpretations of human sexuality in ancient, medieval, and modern Christian thought, with emphasis on contemporary issues such as marriage, divorce, homosexuality, and artificial human procreation. Additional project required for third unit.

#### RELE 456 Personal and Professional Ethics (2, 3)

The foundations, norms, and patterns of personal integrity and professional responsibility. Additional project required for third unit.

#### RELE 457 Christian Ethics and Health Care (2, 3)

Ethical issues in modern medicine and related fields from the perspective of Christian thought and practice. Additional project required for third unit.

**RELE 499 Directed Study (1-3)**

Individual arrangements for students to study under the guidance of a faculty member. May include readings, literature reviews, written papers, or other special projects. Minimum of 30 hours required for each unit of credit.

**RELE 500 Current Issues in Religion and Society (3-4)**

Lecture series addresses a particular topic in bioethics from a variety of theological and religious perspectives. Focuses on current controversial topics in society and health care settings. May be repeated, depending on topic. Additional assignments required for second, third, and fourth units.

**RELE 505 Clinical Ethics (3, 4)**

Case-based analysis of bioethics, with emphasis on clinical applications. Conceptual and historical readings in bioethics. Additional project required for fourth unit.

**RELE 522 Bioethical Issues in Social Work (3, 4)**

Theoretical and practical dilemmas in bioethics. Contributions of social workers to these issues. Additional project required for fourth unit.

**RELE 524 Bioethics and Society (3, 4)**

Explores—from Christian and philosophical perspectives—issues confronting both society and patients. Uses case studies to illustrate such themes as health disparities, AIDS policy, end-of-life care, and organ transplantation. Additional project required for fourth unit.

**RELE 525 Ethics for Scientists (3, 4)**

Ethical aspects of scientific research, with emphasis on Christian contributions. Additional project required for fourth unit.

**RELE 534 Ethical Issues in Public Health (3, 4)**

Ethical issues encountered by public health administrators, educators, and investigators. Additional project required for fourth unit.

**RELE 535 Ethical Issues in Health Care Management (3, 4)**

Considers the special significance of ethical issues in public health for professionals in business and management positions. Additional project required for fourth unit.

**RELE 536 Ethics, Leadership, and Advanced Nursing (3)**

Equips nursing leaders and advanced practice nurses to address complex ethical issues. Includes philosophical and theological foundations for professional responsibility and ethical decision-making regarding contemporary examples from nursing practice.

**RELE 544 Bioethics Integration (1-6)**

Aids dual degree bioethics students in 1) conceptualizing required papers that demonstrate their integrated perspectives on specific professional courses and bioethics, and 2) articulating integrative ideas in a coherent manner.

**RELE 545 Bioethics Case Conference (1)**

Engages students in discussion of real-life cases in bioethics.

**RELE 547 Christian Business Ethics (3, 4)**

Christian and other perspectives on ethical issues in business and their pertinence to health care delivery and administration. Additional project required for fourth unit.

**RELE 548 Christian Social Ethics (3, 4)**

Relationships between Christian beliefs and social theory and practice. Additional project required for fourth unit.

**RELE 554 Clinical Ethics Practicum I (4)**

Theories and applications of ethics in the clinical setting.

**RELE 555 Clinical Ethics Practicum II (4)**

Theories and applications of ethics in the clinical setting.

Prerequisites: RELE 554.

**RELE 564 Ethics and Health Disparities (3, 4)**

Focuses on causes of health disparities and responses to reduce these causes. Gives attention to key health disparities based on race, ethnicity, gender, sexual orientation, and disability. Provides a context for analyzing and understanding health disparities and for ethically evaluating inequalities in health status and responses to them. Additional project required for fourth unit.

**RELE 565 The Good, the Bad and the Ugly: Moral Aspects of Art and Illness (3, 4)**

Explores health, illness, and the human body through the mediums of art, photography, personal drawings, sculpture, and visual medical tests such as x-rays, MRIs, and other scans. Using visual representations of the body, students explore various views of health and illness as they relate to concepts of the good, the bad, and the ugly. Additional project required for fourth unit.

**RELE 566 Heroes of Health Care (3, 4)**

Focuses on the lives of noteworthy figures in the health care professions. Biographies, diaries, literature, and film used by students to identify and analyze the moral virtues and vision of heroic physicians, nurses, and public health advocates from the ancients to the present. Additional project required for fourth unit.

**RELE 567 World Religions and Bioethics (3, 4)**

Asks questions pertaining to the relationship between beliefs and ethical decisions, with the aim of clarifying ethical principles that guide decision making within the context of religious diversity. Explores ethical issues related to sickness, health, birth, and death among various religions of the world, such as Christianity, Judaism, Buddhism, Hinduism, Sikhism, Confucianism, and Islam. Additional project required for fourth unit.

**RELE 568 Bioethics and the Law (3, 4)**

Introduces legal and regulatory issues relevant to the heavily regulated field of health care. Explores the relationship between health care and basic bioethical principles. Topics include negligence, malpractice, child/elder abuse, HIPAA, forced treatment, and professional license/discipline. Discusses classic cases

and current biolaw events. Utilizes mock depositions, presentations by visiting lecturers, and visits to selected live hearings. Additional project required for fourth unit.

**RELE 577 Theological Ethics (3, 4)**

Ethical implications of the primary theological legacies of Western culture. Additional project required for fourth unit.

**RELE 588 Explorers of the Moral Life (3, 4)**

Critically assesses the various theoretical approaches to ethics in Western culture. Applies theoretical ideas to cases illustrating such dilemmas as poverty and health, health care justice, and informed consent. Additional project required for fourth unit.

**RELE 589 Biblical Ethics (3, 4)**

Explores ways—old and new—that the Bible and theology inform moral thought and action. Uses contemporary cases to illustrate the assigned reading and class discussion. Additional project required for fourth unit.

**RELE 598 Master's Seminar I (2)**

Integrates theological/philosophical presuppositions, ethical themes, and accepted ethical principles. Student demonstrates mastery of a comprehensive knowledge of the field through an examination to be assessed by ethics faculty. Restricted to bioethics graduate students who have completed 36 units of their program.

**RELE 599 Master's Seminar II (2)**

Requires refinement of a previously submitted class paper for submission to a peer-review journal. Student demonstrates the ability to identify an issue, analyze it, appropriately use literature, and creatively conceptualize or even advance the discussion. Involves effective oral presentation of research results. Restricted to bioethics graduate students who have completed 36 units of their program.

Prerequisite: RELE 598.

**RELE 624 Seminar in Christian Ethics (3, 4)**

Advanced study of selected topics in Christian ethics. Additional project required for fourth unit.

**RELE 699 Directed Study (1-6)**

Individual arrangements for students to study under the guidance of a faculty member. May include readings, literature reviews, written papers, or other special projects. Minimum of 40 hours required for each unit of credit. Additional projects required for second through sixth units.

**RELE 704 Medicine and Ethics (2)**

Introductory study of Christian medical ethics, emphasizing personal integrity of the physician, the process of moral decision making, and ethical problems facing contemporary medicine, such as abortion and euthanasia.

**RELE 705 Ethics in Pharmacy Practice (3)**

Ethical issues and principles in the contemporary practice of pharmacy. Christian resources and professional expectations for the ethical decisions of pharmacists.

**RELE 706 Advanced Ethics in Pharmacy Practice (2)**

Creates an atmosphere of in-depth analysis and discussion of ethics in pharmacy practice. Students bring their own cases to discuss, in addition to course readings, guest lectures, and moral decision-making models.

**RELE 714 Advanced Medical Ethics (2)**

Advanced study of issues and cases in contemporary medical ethics.

**RELE 734 Christian Ethics for Dentists (2)**

Ethical issues in contemporary dentistry. Christian resources for ethical decision making.

**RELIGION—GENERAL STUDIES****RELG 265 Special Topics in Religion (1-4)**

Lecture and discussion of a current topic in religion bearing on the theory or practice of one aspect of the discipline. Specific content varies from quarter to quarter. May be repeated for additional credit.

**RELG 504 Research Methods (3, 4)**

Studies presuppositions and procedures for scholarship in religion and ethics, with an introduction to research in the natural and behavioral sciences. Practical themes include writing, library and Internet resources, and forms of scholarly papers and articles. Two units of credit may be given for research methods class taken in another discipline. Additional project required for fourth unit.

**RELG 674 Reading Tutorial (3, 4)**

Reading course for graduate students in religious studies. Topics vary depending on student and instructor interests. Additional project required for fourth unit.

**RELG 696 Project (1-4)**

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include preparation of publishable papers or other special projects. Additional work required for second, third, and fourth units.

Prerequisite: Consent of instructor and of student's advisor.

**RELG 697 Independent Research (1-8)**

Individual arrangements for students to do research under the guidance of faculty member(s). Written report required. Minimum of 40 hours required for each unit of credit.

Prerequisite: Consent of instructor and of student's advisor.

**RELG 698 Thesis (1-4)**

Student prepares report of individual guided research in religion-related topic under direct faculty supervision. Minimum of 40 hours required for each unit of credit. Limited to graduate students whose thesis projects have been approved by their research committee.

**RELG 795 Clinical Internship (12)**

Supervised clinical internship. Minimum of one hour of individual supervision per week, and a final evaluation from the supervisor at the completion of 400 hours of clinical internship.

## RELIGION—RELATIONAL STUDIES

### RELR 404 Christian Service (1, 2)

Student participates in approved service learning, with written reflection on the Christian reasons for service. Additional project required for second unit.

### RELR 408 Christian Perspectives on Marriage and the Family (2, 3)

From a Christian perspective, overviews the family life cycle. Additional project required for third unit.

### RELR 409 Christian Perspectives on Death and Dying (2, 3)

From a Christian perspective, considers the meaning of death—including the process of dying, cultural issues regarding death and dying, grief and mourning, suicide, and other related issues. Additional project required for third unit.

### RELR 415 Christian Theology and Popular Culture (2, 3)

Examines concepts and practices in popular culture from a Christian perspective. Additional project required for third unit.

### RELR 427 Crisis Counseling (2, 3)

Crisis phenomena, current crisis theory, a Christian model of crisis care, and the dynamics and practices of crisis care. Additional project required for third unit.

### RELR 429 Cultural Issues in Religion (2, 3)

Studies similarities and differences between European-American culture and 'minority' cultures in America, and the differences pertaining to the way religion is perceived and practiced. Additional project required for third unit.

### RELR 448 Church and Community Leadership (2, 3)

Theology and practice of lay church involvement and leadership by health care professionals. Additional project required for third unit.

### RELR 475 Art of Integrative Care (2, 3)

The integration of psychosocial and spiritual care in the clinical setting. Additional project required for third unit.

### RELR 499 Directed Study (1-3)

Individual arrangements for students to study under the guidance of a faculty member. May include readings, literature reviews, written papers, or other special projects. Minimum of 30 hours required for each unit of credit.

### RELR 524 Clinical Pastoral Education (6-12)

Twelve-week course that includes supervised experience with patients, lectures by hospital staff, hospital rounds with physicians, seminars, and conferences. Five eight-hour days per week. [Limited enrollment. Credit earned in this course is recognized by the Association for Clinical Pastoral Education, Incorporated.]

### RELR 525 Health Care and the Dynamics of Christian Leadership (3, 4)

Christian principles of leadership in the community and in the practice of health care. Additional project required for fourth unit.

### RELR 527 Crisis Counseling (3, 4)

Crisis phenomena, current crisis theory, a Christian model of crisis care, and the dynamics and practices of crisis care. Additional project required for fourth unit.

### RELR 528 Christian Citizenship and Leadership (3, 4)

Christian principles for fostering healthy communities, transforming the institutions of society, and providing public leadership. Additional project required for fourth unit.

### RELR 535 Spirituality and Mental Health (3, 4)

Explores the interrelationship between spirituality and mental health. Seeks to enhance understanding of the term 'spirituality' in the context of religious traditions; considers the therapeutic effects both of spirituality and of religious traditions. Additional project required for fourth unit.

**RELR 536 Spirituality and Everyday Life (3, 4)**

Explores the place of spirituality in everyday life through assimilation of information drawn from religious theorists, theology, spiritual and religious practices, and occupation. Additional project required for fourth unit.

**RELR 537 Issues in Pastoral Counseling (2)**

Explores issues in the practice of pastoral counseling, such as pastoral assessment, theological reflections, and spirituality.

**RELR 538 Methods in Pastoral Counseling (2)**

Explores pastoral counseling methods; the uniqueness, and contributions to the field of religion and mental health.

**RELR 540 Wholeness Portfolio (4)**

Aids student in formulation of a portfolio that incorporates a variety of activities related to biblical concepts of wholeness. Addresses 1) the integration of mind/body/spirit, 2) strengthening relationships, 3) care of the environment, and 4) the healing of the nations from personal and professional perspectives.

**RELR 541 History of Seventh-day Adventist Chaplaincy and Healthcare Policy Making (4)**

Focuses on the history of chaplaincy, Adventist chaplaincy, and the Adventist approach to critical cases and positions in world church documents.

**RELR 549 Personal and Family Wholeness (3, 4)**

Studies personal spiritual development as the center for individual and family life and professional practice, with special attention to balancing healthy family relationships and professional obligations. Additional project required for fourth unit.

**RELR 564 Religion, Marriage, and the Family (3, 4)**

The family in theological, historical, and ethical perspectives—with a Christian assessment of contemporary theories regarding the family. Additional project required for fourth unit.

**RELR 565 Pastoral Theology and Methodology (3, 4)**

Studies the biblical, theological, and historical foundations for the practice of ministry. Additional project required for fourth unit.

**RELR 567 Pastoral Counseling (3, 4)**

Provides overview of theology, history, theory, and practice of pastoral counseling. Additional project required for fourth unit.

**RELR 568 Care of the Dying and Bereaved (3, 4)**

Studies the biblical, theological, cultural, religious, relational, and psychological aspects of dying and death. Additional project required for fourth unit.

**RELR 574 Preaching (3, 4)**

Explores the why, what, where, and how of Christian proclamation, with emphasis on the development of basic skills for the preparation and delivery of biblical messages in a variety of settings. Additional project required for fourth unit.

**RELR 575 Art of Integrative Care (3, 4)**

The integration of psychosocial and spiritual care in the clinical setting. Additional project required for fourth unit.

**RELR 584 Culture, Psychology, and Religion (3, 4)**

Introduces the major contours of Western culture as they relate to various schools of psychological thought and the influence of religious beliefs. Additional project required for fourth unit.

**RELR 585 Psychology of Religion (3, 4)**

Psychological research of religion from an eclectic approach. Faith development, ethnographic varieties of religious experiences, narrative analysis, and cross-cultural religious experiences. Additional project required for fourth unit.

**RELR 586 Psychology of Moral and Faith Development (3, 4)**

Studies logical, moral, and faith reasoning from a cognitive-developmental perspective. How cultural and religious norms affect moral thinking. Additional project required for fourth unit.

**RELR 587 Religion and the Social Sciences (3, 4)**

Introduces classic and contemporary dialogues between religion and the social sciences. Additional project required for fourth unit.

**RELR 588 Personal and Family Wholeness (3, 4)**

Studies personal spiritual development as the center for individual and family life and professional practice, with special attention to balancing healthy family relationships and professional obligations. Additional project required for fourth unit.

**RELR 595 Independent Study in Chaplaincy (1)**

Students study the processes of various chaplaincy specializations, formulate a personal chaplaincy mission statement, and submit paperwork for endorsement and certification with the Adventist Chaplaincy Ministry of the General Conference of Seventh-day Adventists.

**RELR 694 Seminar in Clinical Ministry (3, 4)**

Principles and practice of effective interaction with patients, parishioners, inmates, and other populations. Additional project required for fourth unit.

**RELR 699 Directed Study (1-6)**

Individual arrangements for students to study under the guidance of a faculty member. May include readings, literature reviews, written papers, or other special projects. Minimum of 40 hours required for each unit of credit.

**RELR 701 Orientation to Religion and Medicine (2)**

Examines the relationship between Scripture and the practice of medicine.

**RELR 709 Christian Perspectives on Death and Dying (2)**

From a Christian perspective, considers the meaning of death, including: the process of dying, cultural issues regarding death and dying, grief and mourning, suicide, and other related issues.

**RELR 715 Christian Dentist in Community (2)**

Studies Christian leadership in the local church, surrounding community, and the larger society—emphasizing the practical development of leadership skills.

**RELR 717 Diversity and the Christian Health Professional (2)**

Facilitates the development of personal and professional understanding and appreciation for the diversity in a multicultural society from a Judeo-Christian perspective.

**RELR 725 Wholeness for Physicians (2)**

Knowledge, values, attitudes, and skills contributing to the physician's goal of personal wholeness.

**RELR 749 Personal and Family Wholeness (2)**

Studies personal spiritual development as the center for individual and family life and professional practice, with special attention to balancing healthy family relationships and professional obligations.

**RELR 775 Art of Integrative Care (2)**

The integration of psychosocial and spiritual care in the clinical setting.

**RELIGION—THEOLOGICAL STUDIES****RELT 404 New Testament Writings (2, 3)**

Interprets selected letters and passages of the New Testament, with a view to their theological and practical significance for today. Additional project required for third unit.

**RELT 406 Adventist Beliefs and Life (2, 3)**

Fundamental tenets of Seventh-day Adventist faith and the lifestyle that such faith engenders. Additional project required for third unit.

**RELT 415 Philosophy of Religion (2, 3)**

Philosophical study of religion, including the nature and function of religious language, evidence for the existence of God, the problem of evil, and religious diversity. Additional project required for third unit.

**RELT 416 God and Human Suffering (2, 3)**

Suffering and evil in relation to the creative and redemptive purposes of God for this world. Additional project required for third unit.

**RELT 420 Topics in the Gospels (2, 3)**

Key passages and themes in the four Gospels and/or related to the life of Jesus, with an exploration of their message for today. Content may vary from quarter to quarter. May be repeated for additional credit when content is different. Additional project required for third unit.

**RELT 423 Loma Linda Perspectives (2, 3)**

History and philosophy of Loma Linda University as a Christian health-sciences institution that fosters human wholeness. Additional project required for third unit.

**RELT 425 Contemporary Religious Issues (2, 3)**

Analyzes prominent topics in religion discussed in contemporary journals. Additional project required for third unit.

**RELT 426 Jesus (2, 3)**

Studies Jesus as healer and teacher, prophet and reformer, Son of God and Savior. Additional project required for third unit.

**RELT 436 Adventist Heritage and Health (2, 3)**

Origin and development of Seventh-day Adventist interest in health, from the background of nineteenth-century medicine and health reform to the present. Additional project required for third unit.

**RELT 437 Current Issues in Adventism (2, 3)**

Selected theological, ethical, and organizational questions of current interest in Adventism, with the goal of preparation for active involvement in the life of the Seventh-day Adventist Church. Recommended for students with a Seventh-day Adventist background. Additional project required for third unit.

**RELT 440 World Religions (2, 3)**

Surveys the origins, beliefs, and contemporary practices of the world's major religious systems. Gives attention to the interaction between specific religions and their cultures; and to similarities, differences, and potential for understanding among the religions. Additional project required for third unit.

**RELT 444 Christian Mission (2, 3)**

Applies biblical theology to defining the concerns, structures, and methods of Christian mission. Concept of the Church, the definition of missionary, and the priorities of mission. Additional project required for third unit.

**RELT 447 Cross-cultural Ministry (2, 3)**

Studies the challenges of serving in cross-cultural situations from a Christian mission perspective, using the insights of missiology and cultural anthropology as they relate to personal and professional growth, social change, and effective intercultural communication and service. Additional project required for third unit.

**RELT 464 Paul's Message in Romans (2, 3)**

Chapter-by-chapter interpretation of Paul's most influential letter, in which the good news of God's salvation is applied to the issues of Christian life and community. Additional project required for third unit.

**RELT 470 Visions of Healing in Biblical Prophecy (2, 3)**

Exploration of the visionary accounts of biblical books such as Isaiah, Jeremiah, Daniel, and Revelation. Content may vary from quarter to quarter. Additional project required for third unit.

**RELT 474 Love and Sex in the Bible (2, 3)**

Studies Scripture on the reality, nature, and challenges of love—both divine and human; and of key biblical passages on the goodness, meaning, and distortions of human sexuality. Additional project required for third unit.

**RELT 475 Spirituality and the Contemporary Christian (2, 3)**

Explores the meaning of spirituality in the light of Scripture and Christian thought, and studies practices and disciplines that form and mature an individual's spiritual life. Additional project required for third unit.

**RELT 476 The Bible and Ethics (2, 3)**

Ways in which the Bible and ethics are related. Major ethical themes in biblical teaching. Additional project required for third unit.

**RELT 477 Biblical Thought and Today's World (2, 3)**

Integration of various aspects of biblical thought with the issues and world views faced by those in a health care environment. Content may vary from quarter to quarter. May be repeated for additional credit when content is different. Additional project required for third unit.

**RELT 499 Directed Study (1-3)**

Individual arrangements for students to study under the guidance of a faculty member. May include readings, literature reviews, written papers, or other special projects. Minimum of 30 hours required for each unit of credit.

**RELT 500 Biblical Hermeneutics (3)**

Explores the principles of interpreting the Bible in relationship to real-life situations.

**RELT 504 Daniel and the Prophetic Tradition (3)**

Examines the message from the Book of Daniel and the Old Testament prophetic tradition of which Daniel is a part.

**RELT 505 Seventh-day Adventist History (3)**

Explores the values and practices that shape the Seventh-day Adventist community, with special attention to the life and ministry of Ellen G. White.

**RELT 506 Seventh-day Adventist Beliefs (4)**

Studies the fundamental tenets of Seventh-day Adventist faith and the lifestyle that such faith engenders.

**RELT 507 The Saga of Adventists and Healthcare: Cornflakes, Baby Fae, and the Healing of the Nations (3)**

Examines how a biblically based, apocalyptic-believing, countercultural religion changed America's breakfasts, established Protestantism's largest international network of hospitals, and challenged the grip of multinational tobacco companies.

**RELT 526 Creation and Cosmology (3, 4)**

Explores the similarities and contrasts between biblical and scientific views of the world, with special attention to biblical Creation accounts in their historical context. Additional project required for fourth unit.

**RELT 527 The Bible and Ecology (3, 4)**

Explores the ecology crisis, factory farming, and the extinction of countless species within the context of the Bible's message of promise and hope for nonhuman creation. Additional project required for fourth unit.

**RELT 534 Anthropology of Mission (3, 4)**

Studies Christian mission, applying the findings of anthropology as they relate to cultural change. Processes of religious development, means of diffusion, factors affecting religious acculturation, and analysis of programs intended to effect changes in religion. Additional project required for fourth unit.

**RELT 539 Christian Understanding of God and Humanity (3, 4)**

Studies the nature and attributes of God, with special emphasis on God's relation to the world; and the essential dynamics of human existence in light of the central biblical motifs of creature, image of God, and sin. Additional project required for fourth unit.

**RELT 540 World Religions and Human Health (3, 4)**

Studies the history, beliefs, and practices of major religions of the world, with an emphasis on theological and ethical issues in the practice of health care ministry. Additional project required for fourth unit.

**RELT 555 The Adventist Experience (3, 4)**

Introduces the beliefs and values that shape the Seventh-day Adventist community. Additional project required for fourth unit.

**RELT 556 Spirituality in Seventh-day Adventist Theology (3)**

Clarifies the unique role Seventh-day Adventist theology plays in fostering spirituality.

**RELT 557 Theology of Human Suffering (3, 4)**

Suffering and evil in relation to the creative and redemptive purposes of God for this world. Focus on formation of student's theology of human suffering. Additional project required for fourth unit.

**RELT 558 Old Testament Thought (3, 4)**

Introduces the literature and key theological themes of the Old Testament. Content may vary from quarter to quarter. Additional project required for fourth unit.

**RELT 559 New Testament Thought (3, 4)**

Introduces the literature and key theological themes of the New Testament. Content may vary from quarter to quarter. Additional project required for fourth unit.

**RELT 560 Jesus the Revealer: The Message of the Gospel of John (3, 4)**

A study of Jesus as revealer and healer, the basis for the Loma Linda mission, 'To make man whole.'

**RELT 563 Health Care, Humanity, and God (3, 4)**

Focuses on the centrality of the health professions to the mission of the church, and the ways in which these professions manifest God's saving work and exemplify the ministry of Christ. An additional project is required for fourth unit.

**RELT 564 Apostle of Hope: The Life, Letters, and Legacy of Paul (3, 4)**

A study of the legacy of 'the second most influential' person in human history.

**RELT 565 Vision of Healing: The Message of the Book of Revelation (3, 4)**

A study of Revelation's description of the end of suffering and God's vision for healing a broken world. Additional project required for fourth unit.

**RELT 615 Seminar in Philosophy of Religion (3, 4)**

Examines the concept of God, arguments for the existence of God, the relationship of faith and reason, and the nature of religious language. Additional project required for fourth unit.

**RELT 617 Seminar in Religion and the Sciences (3, 4)**

Explores the interface between religion and the sciences—with attention to the religious origins of modern science, the similarities and contrasts between scientific and religious inquiry, and the particular challenges that the sciences pose for religious belief. Additional project required for fourth unit.

**RELT 699 Directed Study (1-6)**

Individual arrangements for students to study under the guidance of a faculty member. May include readings, literature reviews, written papers, or other special projects. Minimum of 40 hours required for each unit of credit.

**RELT 706 Adventist Beliefs and Life (2)**

Fundamental tenets of Seventh-day Adventist faith, and the lifestyle that such faith engenders.

**RELT 707 Medicine, Humanity, and God (2)**

Role of the practitioner of medicine as a co-worker with God in the healing of humankind.

**RELT 713 Christian Spirituality (2)**

Study of Scripture and Christian thought on how a person's spiritual life is formed and matured.

**RELT 714 Comparative Religious Experiences (2)**

Examines the religious experiences held by adherents of various Christian confessions.

**RELT 716 God and Human Suffering (2)**

Suffering and evil in relation to the creative and redemptive purposes of God for this world.

**RELT 717 Christian Beliefs and Life (2)**

Introduces basic Christian beliefs and life.

**RELT 718 Adventist Heritage and Health (2)**

Studies the fundamental beliefs and values that led Seventh-day Adventists to become involved in health care, with particular emphasis on the spiritual story and principles leading to the founding of Loma Linda University.

**RELT 726 Jesus (2)**

Studies Jesus as healer and teacher, prophet and reformer, Son of God and Savior.

**RELT 727 Love and Sex in the Bible (2)**

Studies Scripture on the reality, nature, and challenges of love, both divine and human; and of key biblical passages on the goodness, meaning, and distortions of human sexuality.

**RELT 734 Anthropology of Mission (2)**

Studies Christian mission, applying the findings of anthropology as they relate to cultural change. Processes of religious development, factors affecting religious acculturation, and analysis of programs intended to effect changes in religion.

**RELT 740 World Religions and Human Health (2, 3)**

Studies the history, beliefs, and practices of major religions of the world, with emphasis on theological and ethical issues in the practice of health care ministry. Final paper and final examination required for third unit.

**RELT 764 Paul's Message in Romans (2)**

Chapter-by-chapter interpretation of Paul's most influential letter, in which the good news of God's salvation is applied to the issues of Christian life and community.

**RELT 765 Vision of Healing: The Message of the Book of Revelation (2)**

A study of Revelation's description of the end of suffering and God's vision for healing a broken world.

**RELT 767 Apostle of Hope: The Life, Letters, and Legacy of Paul (2)**

A study of the legacy of 'the second most influential' person in human history

**RELT 775 Spirituality and the Christian Health Professional (2)**

Explores the meaning of spirituality in the light of Scripture and Christian thought. Studies practices and disciplines that form and mature an individual's spiritual life.

**REHABILITATION SCIENCE****RESC 515 Political and Professional Advocacy in Rehabilitation (3)**

Highlights distinctions between the processes and outcomes of legislation and regulation in the health care professions. Emphasizes negotiation strategies that enhance success in self-advocacy, and solutions to ensure agreement by all participants. Focuses on identifying and solving professional concerns.

**RESC 516 Practicum in Advocacy (1-3)**

Political and professional forums related to grassroots advocacy.

Prerequisite: RESC 515.

**RESC 519 Rehabilitation Theories and Applications in Health Care (3)**

History of and current trends in health care theory and applications, emphasizing successful approaches to integration of the rehabilitation professions.

**RESC 697 Research (1-12)**

Must be repeated to complete the required total of 24 units.

**RESTORATIVE DENTISTRY****RESD 701 Restorative Dentistry I Lecture (2)**

Terminology, morphologic characteristics, and interrelationship of permanent teeth.

**RESD 701L Restorative Dentistry I**

Laboratory (2)

**RESD 702 Restorative Dentistry II (2)**

Introduces mandibular movement. Relationship to the anatomy of teeth. Studies source, use, and manipulation of dental materials; and their physical properties relative to dentistry.

**RESD 702L Restorative Dentistry II**

Laboratory (2)

**RESD 708 Restorative Dentistry III Lecture (2)**

Basic principles and techniques of cavity preparation and restoration of teeth with silver alloy and tooth-colored restorative materials. Studies source, use, and manipulation of dental materials; and their physical properties relative to dentistry.

**RESD 708L Restorative Dentistry III**

Laboratory (2)

**RESD 709 Restorative Dentistry IV Lecture (2)**

Basic principles and techniques of cavity preparation and restoration of teeth with silver alloy and tooth-colored restorative materials. Introduces basic casting principles and techniques. Studies the source, use, and manipulation of dental materials; and their physical properties relative to dentistry.

**RESD 709L Restorative Dentistry IV**

Laboratory (2)

**RESD 764 Removable Prosthodontics (5.5)**

Covers the basic concepts of treatment and management of the partially and completely edentulous

patient utilizing a removable prosthesis. Covers concepts of anatomy, function, and occlusion. Student performs practical hands-on treatment and simulations of immediate complete dentures, removable partial dentures, and treating the completely edentulous patient. Student observes and performs a simulated treatment of a completely edentulous patient.

Removable partial denture design principles and hands-on treatment planning to understand the proper planning and sequencing of treatment for a patient requiring a combination of operative, fixed, and removable prosthodontics.

**RESD 771 Single Casting Technique Lecture (2)**

Basic tooth preparation for single cast restorations, including porcelain fused to metal, tissue management, impression techniques, and casting fabrication.

**RESD 771L Single Casting Technique**

Laboratory (2)

**RESD 772 Fixed Prosthodontics Lecture (2)**

Indications, treatment planning, design and fabrication of metal and porcelain-fused-to-metal restorations, including single units, fixed partial dentures, and single implant restorations.

**RESD 772L Fixed Prosthodontics Laboratory (2)****RESD 773 Fixed Prosthodontics II Lecture (1, 2)**

Continues RESD 772.

**RESD 773L Fixed Prosthodontics II**

Laboratory (1, 2)

**RESD 801 Fixed Prosthodontics and Occlusion (1)**

Introduces additional techniques for fixed prosthodontics, treatment planning, and repair techniques for prosthetic failures.

**RESD 811 Dental Materials II (1)**

Selection and uses of current dental materials.

**RESD 822 Operative Dentistry II Lecture (2)**

Study of complex amalgam, resin, gold, ceramic restorations, and CAD/CAM restorations; diagnosis and treatment planning for esthetic procedures. Also covers implant overdenture procedures and core build-up procedures for endodontically treated teeth.

**RESD 822L Operative Dentistry II Laboratory (2)**

Laboratory experience in complex amalgam, resin, gold, ceramic restorations, and CAD/CAM restorations. Includes laboratory experience in implant overdenture procedures and core build-up procedures for endodontically treated teeth.

**RESD 823 Operative Dentistry III Lecture (1)**

Principles of dental aesthetics, adhesion to tooth tissues, preparation and placement of tooth-colored restorations in anterior and posterior teeth.

**RESD 823L Operative Dentistry III**

Laboratory (1)

**RESD 844 Restorative Study Club Seminar (0.5)****RESD 854 Implant Dentistry (2)**

Lecture portion focuses on diagnostic and treatment-planning procedures associated with implant dentistry, the benefits of implant dentistry, the scientific and technical foundations for implant surgery and associated advanced procedures, the peri-implant tissues, postplacement care, and clinical complications associated with dental implants.

**RESD 854L Implant Dentistry Laboratory (1)**

Laboratory experience that applies the knowledge of diagnosis and treatment planning to the fabrication of radiographic and surgical templates, and provides experience with the analysis of cone-beam radiographic scans and the use of dental implant-planning software. Additionally, provides an implant-placement experience using a manikin—followed by impression making, the fabrication of a working cast, and the formation of a wax pattern for a definitive restoration.

**RESD 861 Senior Topics in Removable Prosthodontics (2)**

Treatment planning and problem solving in removable prosthodontics and combination cases to prepare fourth-year dental students for dental practice and National Dental Board Examination Part II.

**RESD 875 Restorative Dentistry Clinic (0.5-37.5)**

Clinical practice in the restoration of teeth and the replacement of missing teeth—including attendant diagnostic procedures, planning and sequencing of treatment, disease control procedures, and appropriate continuing-care procedures following treatment. Ten quarters must be successfully completed to earn credit.

**RESPIRATORY THERAPY****RSTH 301 Advanced Respiratory Therapy Science I (3)**

Comprehensive review of patient-care techniques. Presents and discusses clinical application of respiratory therapy devices in-depth, and their influences on patient care. Reports and discussions of current and advanced developments. Integrates experience with current concepts and develops logical courses for proper equipment and technique application for specific patient care. (Not taught every year.)

**RSTH 302 Advanced Respiratory Therapy Science II (3)**

Comprehensively reviews patient-care techniques. Presents and discusses clinical application of respiratory therapy devices in-depth, and their influences on patient care. Reports and discussions of current and advanced developments. Integrates experience with current concepts and develops logical courses for proper equipment and technique application for specific patient care. (Not taught every year.)

Prerequisite: Junior standing or consent of the department chair.

**RSTH 303 Advanced Respiratory Therapy Science III (2)**

Comprehensively reviews patient-care techniques. Presents and discusses clinical application of respiratory therapy devices in-depth, and their influences on

patient care. Reports and discussions of current and advanced developments. Integrates experience with current concepts and develops logical courses for proper equipment and technique application for specific patient care. (Not taught every year.)

Prerequisite: Junior standing or consent of the department chair.

#### RSTH 304 Cardiopulmonary Anatomy and Physiology (4)

Investigates anatomic and physiologic components of the cardiovascular and respiratory systems. Emphasizes histology, embryology, diffusion, gases transported in the blood, acid-base balance, lung volumes and capacities, mechanics of ventilation, ventilation perfusion relationships, regulation of respiration, cardiac cell-membrane action potentials, and excitation-contraction coupling.

#### RSTH 311 Advanced Neonatal Respiratory Care (3)

Neonatal and fetal physiology, diseases, and therapeutic interventions. Emphasizes neonatal respiratory care. Reviews current research related to high-frequency ventilation, extracorporeal membrane oxygenation, and surfactant therapy.

#### RSTH 315 Pediatric Perinatal Respiratory Care (2)

Pathophysiology of the newborn, prenatal risk factors, pediatric cardiopulmonary diseases, diagnostics, monitoring of clinical indices, and treatments used in perinatal/pediatric respiratory care. Advanced information on surfactant administration, high-frequency ventilation, and ECMO. May be used toward postprofessional B.S. degree in respiratory care in place of RSTH 422.

#### RSTH 323 Pulmonary Function Methodology (3)

Evaluates pulmonary function in health and disease through spirometry, plethysmography, helium dilution, nitrogen washout, single-breath nitrogen, volume of isoflow, and diffusing capacity studies—including blood-gas instrumentation, quality control, quality assurance, and current ATS standards. Lecture and laboratory.

#### RSTH 331 Pharmacology I (2)

Surveys pharmacologic agents currently used in medicine—including their kinetics, dynamics, and therapeutics. Emphasizes drugs and their effects on the respiratory, cardiovascular, and autonomic nervous systems. Topics include the bronchodilators, anti-inflammatory agents, mucokinetic agents, cardiovascular agents, diuretics, antimicrobials, neuromuscular agents, and agents used to treat nicotine dependence.

#### RSTH 332 Pharmacology II (2)

Surveys pharmacologic agents currently used in medicine—including their kinetics, dynamics, and therapeutics. Emphasizes drugs and their effects on the respiratory, cardiovascular, and autonomic nervous systems. Topics include the bronchodilators, anti-inflammatory agents, mucokinetic agents, cardiovascular agents, diuretics, antimicrobials, neuromuscular agents, and agents used to treat nicotine dependence.

#### RSTH 334 Patient Assessment (2)

General introduction to the clinical setting. Assesses and evaluates patients with respiratory disease. Develops clinical practice habits and patient-care techniques. Student must obtain current cardiopulmonary resuscitation (CPR) certification from the American Heart Association before the end of the term.

#### RSTH 341 Respiratory Therapy Science I (5)

Basic principles of respiratory therapy, as related to gas physics; medical-gas storage and therapy; and administration of humidity, aerosol and airway-pressure therapies, artificial airways, and resuscitation devices. Emphasizes methods of administration of the therapy, with special attention placed on the equipment used, as well as applies this information to the clinical setting.

#### RSTH 342 Respiratory Therapy Science II (5)

Lecture and laboratory presentation of the principles of respiratory therapy related to lung-inflation therapy; use of artificial airways, and their care and complications. Introduces mechanical ventilatory

support, including beginning ventilators, support systems, comparison of methods, and respiratory monitoring. Emphasizes application of this information to the clinical setting.

Prerequisite: RSTH 341.

#### RSTH 343 Respiratory Therapy Science III (4)

Lecture and laboratory presentation of the principles of respiratory therapy related to mechanical ventilatory support, including patient management and ventilatory support systems. Emphasizes methods of ventilatory support, with special attention to the mechanical ventilators commonly used in the students' clinical sites. Applies this information to the clinical setting.

Prerequisite: RSTH 341, RSTH 342.

#### RSTH 354 Case Studies in Adult Respiratory Care (2)

Adult critical-care concepts presented through a case-study approach. Respiratory care plan used to present diseases, treatment, and procedures relevant to respiratory care. Patient rounds further develop critical-thinking skills in a patient-care setting.

Prerequisite: RSTH 381.

#### RSTH 366 Diagnostic Techniques (3)

Continues the clinical use of diagnostic tests and procedures. Emphasizes evaluation of chest radiographs, electrocardiography, and monitoring hemodynamics. Lecture and laboratory.

Prerequisite: RSTH 304, RSTH 331.

#### RSTH 381 Cardiopulmonary Diseases I (2)

Comprehensively studies cardiopulmonary diseases and their adverse effects. Course content includes disease etiology, pathology, pathophysiology, clinical features, prognosis, treatment, and prevention.

Prerequisite: RSTH 304, RSTH 331, RSTH 341.

#### RSTH 382 Cardiopulmonary Diseases II (2)

Comprehensively studies cardiopulmonary diseases and their adverse effects. Course content includes disease etiology, pathology, pathophysiology, clinical features, prognosis, treatment, and prevention.

Prerequisite or concurrent\*: RSTH 304, RSTH 381\*, RSTH 342.

#### RSTH 391 Respiratory Care Practicum I (2)

General introduction to the clinical setting; assessment of patients with respiratory disease. Develops work habits and patient-care techniques. Students must obtain current cardiopulmonary resuscitation (CPR) certification from the American Heart Association before the end of the quarter.

Prerequisite: RSTH 341; AHA CPR certification.

#### RSTH 392 Respiratory Care Practicum II (2)

Applies specific therapeutic techniques, including oxygen and humidity therapy, aerosol therapy, airway management, lung-inflation techniques, and chest physiotherapy.

Prerequisite: RSTH 342, RSTH 391; AHA CPR certification.

#### RSTH 393 Respiratory Care Practicum III (4)

Applies therapeutic techniques in continuous mechanical ventilation; special procedures, operation and postanesthesia room, and arterial blood-gas laboratory.

Prerequisite: RSTH 343, RSTH 382, RSTH 392.

#### RSTH 401 Cardiopulmonary Intensive Care (2-4)

Management of the patient with cardiopulmonary failure. Theory and capabilities of various life support and monitoring systems.

Prerequisite: Postprofessional student, senior standing; or consent of instructor.

#### RSTH 404 Critical Care (4)

Continues the theory, practice, and knowledge of mechanical ventilation—providing an integrated approach to respiratory care in the critical-care arena. A systems-based approach used to incorporate respiratory care concepts, such as planning and implementing of protocols, best-practice guidelines, etc. Presentations, projects, and critical evaluation used to increase critical-thinking skills and patient-care skills.

#### RSTH 411 Advanced Cardiac Life Support (2)

Principles and techniques of advanced emergency cardiac care: review of basic CPR, endotracheal intubation, and the use of airway adjuncts. Monitoring and dysrhythmia recognition. Essential and useful

drugs for cardiac life support. Intravenous techniques. Appropriate use of devices for elective cardioversion or defibrillation, stabilization, and transportation. Use of circulatory adjuncts. Acid-base balance, drug therapy, and therapeutic interventions.

#### RSTH 421 Perinatal and Pediatric Respiratory Care (2)

Fetal development and circulation. Prenatal risk factors. Newborn resuscitation; newborn and pediatric assessment. Etiology, pathophysiology, course, treatment, and outcome of respiratory diseases as they relate to problems in pediatrics and neonatology. Discusses ECMO, high-frequency ventilation, and nitric oxide.

Prerequisite: RSTH 304, RSTH 331.

#### RSTH 422 Advanced Perinatal and Pediatric Respiratory Care (2)

Pathophysiology of newborn and pediatric diseases likely to be encountered by the respiratory care practitioner. Perinatal risk factors, resuscitation, and research on the transition to extrauterine life. Diagnostics, monitoring of clinical indices, and treatments used in perinatal/pediatric respiratory care. Advanced information on surfactant, high-frequency ventilation, and ECMO.

Prerequisite: RSTH 421; or consent of instructor. Does not apply to postprofessional respiratory care students.

#### RSTH 424 Exercise Physiology and Pulmonary Rehabilitation (3)

Metabolism of carbohydrates, lipids, and proteins in energy production, oxygen consumption, carbon dioxide production, and respiratory quotient applied to measurable counterparts of oxygen uptake, carbon dioxide output, and respiratory exchange ratio at rest and during exercise. Metabolic studies, body-fat composition, exercise studies, and malnutrition in chronic obstructive pulmonary disease utilized as a foundation for evaluation and implementation of pulmonary rehabilitation program. Rehabilitation components include team assessment, patient training, exercise, psychosocial intervention, and follow-up.

#### RSTH 431 Senior Project I (2)

Students required to develop a proposal for a research paper/project. Under the direction of the program director, students assigned to a mentor who will assist them with developing their paper/project.

#### RSTH 432 Senior Project II (2)

Develops and expands research paper/project begun during previous quarter. Literature search, research question, and data collection methods developed.

Prerequisite: RSTH 431.

#### RSTH 433 Senior Project III (2)

Data collection completed, data analyzed, conclusions and findings written up for publication and for poster presentation.

Prerequisite: RSTH 431, RSTH 432.

#### RSTH 434 Advanced Patient Assessment (2)

Advanced skills in interviewing, physical examination, and interpretation of laboratory data. Lecture, reading material, and physical examination procedures. Provides insight for better interview and examination of patients with cardiopulmonary disease. Increases understanding of the pathophysiology behind the symptoms.

Prerequisite: RSTH 334; Does not apply to postprofessional respiratory care students.

#### RSTH 441 Respiratory Therapy Science IV (3)

Presents and discusses the clinical application of respiratory therapy devices in-depth, and their influences on patient care. Reports and discussions of current and advanced developments. Emphasizes application of this information to the clinical setting. (Not taught every year.)

Prerequisite: RSTH 341, RSTH 342, RSTH 343; or consent of instructor.

#### RSTH 444 Case Studies in Neonatal/Pediatric Respiratory Care (2)

Develops respiratory care-management skills in caring for the neonatal and pediatric patient through the presentation of student case studies. Clinical staff and faculty review current management of the

newborn, infant, and child. Student presents patients and explains implications of care. Develops presentation skills.

Prerequisite: RSTH 421; Does not apply to postprofessional respiratory care students .

#### RSTH 451 Respiratory Care Affiliation I (2)

General care, basic critical care, and advanced critical care in the adult, pediatric, and neonatal setting as practiced at LLUMC. Open to students who are now, or have been recently, employed by LLUMC.

Prerequisite: CA RCP licensure.

#### RSTH 452 Respiratory Care Affiliation II (2)

Specialty clinical assignments selected from the following areas: adult critical care, cardiopulmonary specialties, pediatrics and neonates, polysomnography, rehabilitation and patient education, research, and special procedures. Limited to students in the postprofessional B.S. degree program in respiratory care.

Prerequisite: AHCJ 461; RSTH 315, RSTH 422.

#### RSTH 453 Respiratory Care Affiliation III (2)

Specialty clinical assignments selected from the following areas: adult critical care, cardiopulmonary specialties, pediatrics and neonates, polysomnography, rehabilitation and patient education, research, and special procedures. Limited to students in the post-professional B.S. degree program in respiratory care.

Prerequisite: AHCJ 461; RSTH 315, RSTH 452; CA RCP licensure.

#### RSTH 454 Respiratory Care Affiliation IV (2)

Specialty clinical assignments selected from the following areas: adult critical care, cardiopulmonary specialties, pediatrics and neonates, polysomnography, rehabilitation and patient education, research, and special procedures. Limited to students in the post-professional B.S. degree program in respiratory care.

Prerequisite: AHCJ 461; RSTH 315, RSTH 452; CA RCP licensure.

#### RSTH 455 Respiratory Care Affiliation V (2)

Specialty clinical assignments selected from the following areas: adult critical care, cardiopulmonary

specialties, pediatrics and neonates, polysomnography, rehabilitation and patient education, research, and special procedures. Limited to students in the post-professional B.S. degree program in respiratory care.

Prerequisite: AHCJ 461; RSTH 315, RSTH 452.

#### RSTH 457 Physical Diagnosis I (2)

Systematic review of bedside assessment techniques utilized in the care of patients with respiratory disease. Student presentations and discussions of selected cases that involve diagnostic and therapeutic modalities of particular interest to respiratory therapists. Three units required for B.S. degree in respiratory therapy.

#### RSTH 458 Physical Diagnosis II (1)

Continues discussion of clinical assessment techniques and interpretation of findings in patients with cardiopulmonary disease. Emphasizes use of laboratory tests, chest radiographs, arterial blood gases, and other tests used to evaluate the patient. Lecture, reading, and discussion of case studies.

#### RSTH 462 Management Practicum II (2)

Experience in management of respiratory or emergency medical-care management. Clinical application of the theoretical management skills developed during the didactic portions of the training.

#### RSTH 463 Management Practicum III (2)

Experience in management of respiratory or emergency medical-care management. Clinical application of the theoretical management skills developed during the didactic portions of the training.

#### RSTH 464 Case Management in Respiratory Care (2)

Utilizes a case management approach to patient care in the management and evaluation of treatment and disease. Special emphasis on case management of the respiratory care patient includes discharge planning, utilization review, patient assessment, cost containment, patient education, and integration issues.

Prerequisite: RSTH 334, RSTH 424, RSTH 434; Does not apply to postprofessional respiratory care students .

**RSTH 466 Advanced Diagnostic Techniques (2)**

Advanced diagnostic theory and practice in the following areas: Holter monitoring, echocardiography, bronchoscopy, sleep studies, and other relevant respiratory care diagnostics.

Prerequisite: RSTH 366; Does not apply to postprofessional respiratory care students.

**RSTH 471 Instructional Techniques I (2)**

Develops units of instruction, instructional objectives, and evaluation procedures. Students observe and participate in classroom management; and apply teaching principles through experience in various teaching activities, such as community preventive health care programs, in-service and continuing education, and college classroom and clinical teaching. Conferences and individual guidance.

**RSTH 472 Instructional Techniques II (2)**

Develops units of instruction, instructional objectives, and evaluation procedures. Observation and participation in classroom management. Applies teaching principles through experience in various teaching activities, such as community preventive health care programs, in-service and continuing education, and college classroom and clinical teaching. Conferences and individual guidance.

Prerequisite: RSTH 471.

**RSTH 473 Instructional Techniques III (2)**

Develops units of instruction, instructional objectives, and evaluation procedures. Students observe and participate in classroom management; and apply teaching principles through experience in various teaching activities, such as community preventive health care programs, in-service and continuing education, and college classroom and clinical teaching. Conferences and individual guidance.

Prerequisite: RSTH 472.

**RSTH 474 Cardiopulmonary Health Promotion and Disease Prevention (2)**

Selected topics dealing with aspects of disease prevention. Includes the relevance of statistics, epidemiology, research designs, and clinical trials; as well as selected disease trends, lifestyle modification,

the role of physical activity, nutrition and immunization, and public health approaches to communicable diseases.

Prerequisite: RSTH 424.

**RSTH 485 Evidenced-Based Medicine in Respiratory Care (4)**

Provides basic knowledge and experience in the area of evidenced-based medicine as it relates to respiratory care practice and research.

**RSTH 486 Evidenced-Based Medicine in Respiratory Care II (4)**

Provides advanced knowledge and experience in the area of evidenced-based medicine as it relates to respiratory care practice and research. Emphasizes the neonatal and pediatric areas of respiratory care.

**RSTH 487 Evidenced-Based Medicine in Respiratory Care III (4)**

Provides advanced knowledge and experience in the area of evidenced-based medicine as it relates to respiratory care practice and research. Emphasizes the adult areas of respiratory care.

**RSTH 491 Education Practicum I (2)**

Provides experience in clinical education, evaluation, and scheduling. Familiarizes student with hospital affiliation agreements and accreditation issues.

Prerequisite: CA RCP licensure.

**RSTH 492 Education Practicum II (2)**

Provides experience in clinical education, evaluation, and scheduling. Familiarizes student with hospital affiliation agreements and accreditation issues.

Prerequisite: CA RCP licensure.

**RSTH 493 Education Practicum III (2)**

Provides experience in clinical education, evaluation, and scheduling. Familiarizes student with hospital affiliation agreements and accreditation issues.

Prerequisite: CA RCP licensure.

**RSTH 494 Respiratory Care Practicum IV (2)**

Students develop professional competence and maturity in the clinical setting. Comprehensive training in all aspects of respiratory care, including the pulmonary function laboratory and home care.

Prerequisite: RSTH 343, RSTH 382, RSTH 393, RSTH 404.

**RSTH 495 Respiratory Care Practicum V (2)**

Specialty training in respiratory care practice. Students rotate to specialized areas of respiratory care, increasing their proficiency and understanding in the following areas: neonatal/pediatric critical care, adult critical care, cardiopulmonary diagnostics, hyperbaric medicine, sleep disorders medicine, cardiopulmonary rehabilitation, and extended care. In addition, students continue their professional development and competency in the general and critical-care settings.

Prerequisite: RSTH 494, RSTH 404.

**RSTH 496 Respiratory Care Practicum VI (3)**

Continues specialty training in respiratory care practice. Students rotate to specialized areas of respiratory care, increasing their proficiency and understanding in the following areas: neonatal/pediatric critical care, adult critical care, cardiopulmonary diagnostics, hyperbaric medicine, sleep disorders medicine, cardiopulmonary rehabilitation, and extended care. In addition, students continue their professional development and competency in the general and critical-care settings.

Prerequisite: RSTH 495.

**RSTH 499 Respiratory Therapy Independent Study (0.5-2)**

Student submits project or paper on a topic of current interest in an area of respiratory therapy. Regular meetings provide student with guidance and evaluation. Elected on the basis of need or interest. The .5 unit of credit designed to offer directed experience in the prevention of AIDS and other communicable diseases in the clinical setting.

**RADIOLOGIC TECHNOLOGY  
ADVANCED PLACEMENT****RTAP 221 Patient Care and Education (1)**

Presents an overview of legal issues in radiologic technology. Legal topics include: informed consent, confidentiality, patient rights, civil liability, legal doctrines, and standards of ethics. Provides an understanding of professional communication skills needed to succeed as an entry-level radiographer. Other topics covered include: infection control, contrast media, patient transfers, and medical emergencies.

**RTAP 255 Radiographic Procedures (2)**

Introduces students to various radiographic procedures and anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding.

**RTAP 283 Equipment Operation and Quality Control (1)**

Provides a background for understanding the physics of man-made radiation production. Addresses the interaction of radiation with matter for both radiation protection and the creation of radiographic images. Covers the electrical circuit of radiation equipment.

**RTAP 284 Radiation Protection (1)**

Provides a background for understanding the physics of man-made radiation production. Addresses the interaction of radiation with matter for both radiation protection and the creation of radiographic images. Covers the electrical circuit of radiation equipment.

**RTAP 287 Image Production and Evaluation (2)**

Provides instruction in the principles of radiographic theory and technique. Covers the physical factors involved in imaging processing, as well as techniques for obtaining the optimum radiography under any situation. Examines the role of image-intensified fluoroscopy in radiology. Provides instruction in the use of digital imaging technology in radiology, including: digital imaging equipment, picture archival and communications systems, radiology information systems, hospital information systems, and various

other radiology-related applications. Focuses advanced techniques on operation, quality assurance, and radiation safety.

#### RTAP 971 Clinical Affiliation (2)

Students gain hands-on experience in basic patient care, radiographic procedures and positioning, radiation protection, radiographic exposure and techniques, critical thinking, problem solving, and patient and health care team communication.

#### RTAP 972 Clinical Affiliation (2)

Students gain hands-on experience in basic patient care, radiographic procedures and positioning, radiation protection, radiographic exposure and techniques, critical thinking, problem solving, and patient and health care team communication.

## RADIATION TECHNOLOGY

#### RTCH 325 Excel Basics for Managers (2)

Introduces prospective radiology managers and administrators to the basics of EXCEL necessary to create spreadsheets that involve calculation, graphing, and plotting of information. Provides a brief overview of the capabilities of EXCEL in preparation for advanced finance and budgeting courses.

#### RTCH 385 Radiologic Trends in Health Care (3)

A faculty-facilitated course that includes class discussion, group work, and presentation of projects utilizing the online learning environment. Focuses on current and future trends in the field of radiology.

#### RTCH 411 Student-Teaching Practicum I (2)

Classroom teaching experience. Student prepares lecture outlines, objectives, and tests; and presents lectures and laboratory sessions. Practical application of teaching techniques.

#### RTCH 412 Student-Teaching Practicum II (2)

Classroom teaching experience. Student prepares lecture outlines, objectives, and tests; and presents lectures and laboratory sessions. Practical application of teaching techniques.

#### RTCH 413 Management Practicum I (2)

Observation of and discussion with selected administrative personnel in a radiology service. Emphasizes practical application of management theory. Projects assigned.

#### RTCH 414 Management Practicum II (2)

Observation of and discussion with selected administrative personnel in a radiology service. Emphasizes practical application of management theory. Projects assigned.

#### RTCH 418 Health Information Management and Radiology Coding for Radiology Managers (4)

Foundational course for prospective radiology managers and administrators that integrates health information management systems and radiology coding. Familiarizes the student with health information systems and provides them with a sound knowledge of radiology coding—showing how both relate to the smooth running of a radiology department. Introduces the most current guidelines in health information technology and provides students with the tools to better understand the concepts behind accurate coding and policy.

#### RTCH 464 Moral Leadership (4)

Methods of applying servant leadership to management and educational settings. Within a moral framework, discusses concepts of managing learners and professionals, assessing leadership style, the essence of leadership, leadership skill building, and conflict management. Utilizes assigned readings, discussions, papers, and personal inventories to aid in assessing the learner's leadership skills.

#### RTCH 467 Management of a Radiologic Service (3)

Techniques of organization, planning, and management, with specific applications to a hospital radiology service.

#### RTCH 471 Applied Research Methods I (2)

Applies research methods to radiation sciences. Directed experience with a research project. Laboratory.

**RTCH 472 Applied Research Methods II (2)**

Applies research methods to radiation sciences. Directed experience with a research project. Continues RTCH 471.

**RTCH 474 Instructional Techniques (3)**

Develops units of instruction, instructional objectives, and evaluation procedures. Students observe and participate in classroom management; and apply teaching principles through experience in various teaching activities, such as community preventive health care programs, in-service and continuing education, and college classroom and clinical teaching.

**RTCH 475 Curriculum Development in Health Sciences (3)**

Applies curriculum-development theories and approaches to the health-science arena. Seminar, course, or curriculum development. Designing assessment tools and procedures, designing a learning experience, selecting appropriate technology, developing a learner-centered handout/syllabus, and cultivating respect for diversity in learning.

**RTCH 476 Adult Learning Theory (3)**

Examines adult learning theories and teaching approaches to increase student learning outcome success.

**RTCH 477 Learning Activities & Assessment (3)**

Investigates active learning approaches, their integration into the classroom, and how to assess them.

**RTCH 478 Online Instructional Design (3)**

Explores the design of online or hybrid courses to incorporate active learning approaches and create community in the online environment.

**RTCH 485 Digital Management in Radiology (2)**

A student-centered, faculty-facilitated course that is a continuation of RTCH 385. Class discussion, small-group work, and presentation of student projects/paper. New technology and its impact on the radiology department.

**RTCH 497 Advanced Clinical Experience (0)**

Advanced clinical experience in selected areas of professional practice.

**RTCH 499 Radiation Technology Independent Study (0.5-2)**

Student submits a project or paper on a topic of current interest in an area related to radiation technology. Regular meetings provide the student with guidance and evaluation. Elected on the basis of need or interest. The .5 unit of credit designed to offer directed experience in the prevention of AIDS and other communicable diseases in the clinical setting.

**RTCH 567 Leadership Theory and Practice (3)**

A Web-based course that focuses on the leadership aspect of communication. Examines leadership from a theoretical standpoint while relating, assessing, and applying leadership in present-day professional interactions.

## **RADIATION TECHNOLOGY—IMAGING INFORMATICS**

**RTII 354 Introduction to Informatics (3)**

Provides students with a challenging introduction to and basic overview of computer fundamentals. Offers In-depth insight into the components that comprise a picture-archiving and communication system (PACS), including but not limited to basic terminology, computed radiography, digital radiography, hospital information systems, radiology information systems, DICOM, and HL-7. Online instruction utilizing Blackboard exposes students to topics via reading, PowerPoint, videos, and other interactive resources. Challenges students to demonstrate critical problem-solving skills required to create and design basic models of a PACS system, as well as to troubleshoot issues related to such systems.

**RTII 356 Information Technology in Radiology (3)**

Introduces the basic principles behind developing and maintaining a network within a radiology health care enterprise. Topics include, but are not limited to:

basic terminology, network components, network design and implementation, storage and archive assessment, hard- and software implementation databases, IT standards, and IT replacement schedules. Online instruction utilizing Blackboard exposes students to topics via reading, PowerPoint, videos, and other interactive resources. Challenges the student to create and design basic models of a network. Requires the student to demonstrate the critical problem-solving skills required to troubleshoot issues in a network.

### RTII 358 PACS Planning and Implementation (3)

Studies the steps needed to successfully procure a picture-archiving and communications system (PACS) in a radiology department of any size. Focuses on organizational readiness, proposal requests, vendor selection, contracts, and cost strategies. Online instruction utilizing Blackboard, group discussions, and various online learning mediums challenge students to demonstrate not only critical- thinking skills in the planning environment, but also team-building and project management abilities. Includes two major projects.

### RTII 359 Digital Radiography and PACS for the Imaging Specialist (2)

Provides a basic understanding of the principles that affect the technologist in a digital imaging environment, as well as an overview of a picture archival and communication system (PACS). Fosters interest in cutting-edge technologies in radiation science. Presented predominantly in an online environment. Topics include but are not limited to: basic principles in digital radiography, image acquisition, acquisition errors, fundamentals of digital exposure, image evaluation, quality assurance, computer basics, imaging standards, information systems, the EHR, WebPACS, teleradiology, PACS storage, HIPAA concerns in PACS, Moore's Law, and future trends within PACS.

Prerequisite: Licensed medical radiographer, ARRT certified.

### RTII 364 Administrative Issues in Informatics (3)

Focuses on issues in informatics faced by a picture-archiving and communications system (PACS) administrator. Facilitates understanding of the architecture of a PACS and the details of running the business aspects of such a system. Topics include, but are not limited to; project management, operations management, relationships in health care, quality-improvement procedures, emergency protocols, and compliance with federal regulations.

### RTII 368 Communication and Education in Imaging Informatics (3)

Focuses on the basic communication skills a picture-archiving and communications systems (PACS) administrator should possess. Topics include, but are not limited to: relationships in health care, medical terminology, educational concerns, feedback mechanisms, evaluation processes, effective communication, and quality education and training programs. Online instruction utilizes Blackboard, text, video, PowerPoint, and other interactive online resources.

### RTII 374 Image Management in Informatics (3)

Focuses on basic image-management tasks that a picture-archiving and communications system (PACS) administrator must complete on a daily basis. Topics include but are not limited to: environmental design, human-computer interface evaluation, database retrieval, and problem solving. Online instruction using Blackboard incorporates text, video, PowerPoint, and other interactive resources.

### RTII 378 Systems Management in Informatics (3)

Focuses on basic systems management tasks that a picture-archiving and communications system (PACS) administrator must complete on a daily basis. Topics include but are not limited to: capacity and throughput, disaster recovery and continuity, problem management, data migration, and data security. Online instruction using Blackboard incorporates text, video, PowerPoint, and other interactive resources.

**RTII 384 Advanced Imaging Informatics (3)**

An in-depth study of the advanced imaging informatics skills required of a picture-archiving and communications system (PACS) administrator. Topics include but are not limited to: medical imaging standards, integrated health care, enterprise guidelines, image architecture and design, modality integration, quality control, and environmental hazards. Online instruction using Blackboard incorporates text, video, PowerPoint, and other interactive resources.

## **RADIATION TECHNOLOGY—MEDICAL DOSIMETRY**

**RTMD 301 Treatment Planning I (3)**

Studies in-depth the planning of isodose distributions and dose calculations within different target volumes. Topics covered include IMRT, conformal therapy, and stereotactic radiosurgery.

**RTMD 302 Treatment Planning II (2)**

Develops the student's ability to construct treatment plans using 3D/IMRT planning techniques. Integrates theory with practice. Students required to complete a number of plans that utilize all the major treatment techniques, based on anatomical tumor sites. Lecture includes discussion and plans related to specific tumors, after which students are expected to produce similar plans, compile a notebook of plans, and present plans to the class as a midterm and final examination.

**RTMD 305 Special Topics (2)**

Studies cutting-edge techniques in depth as they apply to therapy—including radiation oncology and the diagnostic modalities that support them. Topics include IMRT, TBI, USGI, IORT, MLC, dynamic wedging, virtual simulation (CT simulation), stereotactic radiosurgery, HDR, proton therapy, MRI, US, and NRM. Students make a weekly presentation from a peer-reviewed journal or discuss a research paper on one of the studied topics. Class paper on a specific area of study due at the end of the quarter.

**RTMD 307 Principles of Brachytherapy (2)**

Includes a two-week rotation at Long Beach Memorial Hospital to observe brachytherapy. Principles of radiation protection as they relate to brachytherapy.

**RTMD 309 Radiation Therapy Core—Concept Review (1)**

Conducted in the seminar/review format. Students research and present information on weekly schedule of core topics and concepts relating to radiation therapy techniques, oncology, radiobiology, and patient care. Students complete assigned readings and answer general review questions.

**RTMD 310 Applied Math for Medical Dosimetry (1)**

A review of the higher mathematics skills required for dosimetric calculations. Course conducted in a tutorial format in which students meet regularly with faculty to review problems from an assigned mathematics workbook.

**RTMD 314 Quality Assurance, with Laboratory (2)**

General overview of quality-assurance management within a radiation oncology department, with specific emphasis on continuous quality assurance (CQI). Examines the theoretical and practical application of quality-assurance techniques as they relate to treatment planning and other dosimetry functions.

**RTMD 355 Physical Principles of Radiation Therapy I (3)**

Nature and description of the structure of matter and energy. Radioactive decay schemes and interaction of photons and gamma radiation. Instrumentation involved in measurement of ionizing radiation, beam quality, and dose. Laboratory.

**RTMD 356 Physical Principles of Radiation Therapy II (3)**

Discusses the following areas: calibration techniques of photon, particulate, and electron beams; percentage depth dose, tissue-air ratios, treatment planning, scatter

functions, field flatness, and symmetry; field shaping, arc therapy, and tissue inhomogeneities; clinical dosimetric considerations. Includes laboratory.

#### RTMD 961 Practicum (9)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 24 hours.

#### RTMD 962 Practicum (8)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 24 hours.

#### RTMD 963 Practicum (8)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 24 hours.

#### RTMD 964 Practicum (9)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 30 hours.

#### RTMD 965 Practicum (10)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 24 hours.

#### RTMD 971 Practicum (10)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 30 hours.

#### RTMD 972 Practicum (9)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 30 hours.

#### RTMD 973 Practicum (9)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 30 hours.

#### RTMD 974 Practicum (9)

Practical application of the theoretical knowledge of dosimetry. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and

physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 30 hours.

#### RTMD 975 Practicum (10)

Practical application of the theoretical knowledge of dosimetry. Includes external beam-treatment planning, monitor-unit calculations, brachytherapy, and quality-assurance procedures as they pertain to dosimetry practice. Students integrated into the dosimetry and physics team, with opportunity to work with various kinds of treatments and treatment beams. Per week: 30 hours.

## **RADIATION TECHNOLOGY—MEDICAL RADIOGRAPHY**

#### RTMR 202 Orientation Laboratory (3)

Clinical orientation to the functions of radiologic technologists. Laboratory sessions conducted at affiliated clinical sites.

#### RTMR 221 Radiologic Patient Care (2)

Addresses patient care issues specific to radiographic procedures. Emphasizes patient care in the ER and OR, as well as contrast procedures. Other topics covered include: radiographic professional organizations, ARRT code of ethics, staying balanced and healthy, critical thinking and problem solving, pharmacology, medical abbreviations, spirituality in health care, dealing with challenging patient situations, immobilization techniques, and overview of patient care topics on the ARRT board examination.

#### RTMR 224 Legal Issues in Medical Radiography (1)

Presents an overview of legal issues in radiologic technology. Topics include: standards of care, patient rights, informed consent, civil liability, legal doctrines, documentation, confidentiality, scope of practice, and ethical theories.

#### RTMR 246 Professional Communications (2)

Provides an understanding of the professional communication skills needed to succeed as an entry-

level radiographer. Addresses radiologic technology accreditation and University-required student learning outcomes in oral, written, and health care team communication.

#### RTMR 253 Medical Radiography Procedures I (2)

Introduces students to various radiographic procedures, which include anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding.

#### RTMR 253L Medical Radiography Procedures Laboratory I (1)

Applies principles of patient positioning in a laboratory setting. Students practice optimum positioning practices on classmates. Anatomy covered includes: chest, upper extremity, lower extremity, bony thorax, and shoulder girdle.

#### RTMR 254 Medical Radiography Procedures II (2)

Applies anatomy and physiology to the radiographic situation. Proper patient positioning, equipment usage, and technical film-quality factors.

Prerequisite: RTMR 253.

#### RTMR 254L Medical Radiography Procedures Laboratory II (1)

Applies principles of patient positioning and radiographic exposure to the laboratory setting. Uses clinical patient simulations and radiographic phantoms to determine optimum techniques.

#### RTMR 255 Medical Radiography Procedures III (2)

Introduces students to various radiographic procedures, which include anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding.

**RTMR 255L Medical Radiography Procedures Laboratory III (1)**

Applies principles of patient positioning and radiographic exposure to the laboratory setting. Uses clinical patient simulation and radiographic phantoms to determine optimal radiographic techniques.

**RTMR 283 Radiologic Physics (3)**

Provides a background for understanding the physics of man-made radiation production. Addresses the interaction of radiation with matter for both radiation protection and the creation of radiographic images. Covers the electrical circuitry of diagnostic x-ray equipment.

**RTMR 284 Radiation Protection and Biology (2)**

Addresses the fundamental concepts of radiation protection and biological effects of radiation on patients and occupationally exposed personnel. Topics include: radiation safety procedures, radiation quantities and units, legal exposure standards, and radiation monitoring.

**RTMR 285 Principles of Radiography I (3)**

Introduces the principles of radiographic theory and technique. Covers the physical factors involved in image exposure and processing, auxiliary equipment used in producing the radiographic exposure, and techniques for obtaining the optimum image under any situation. Weekly laboratory sessions required.

**RTMR 286 Principles of Radiography II (4)**

Provides advanced instruction in the principles of radiographic theory and technique. Examines the role of image-intensified fluoroscopy in radiology. Weekly laboratory sessions required.

**RTMR 287 Principles of Radiography III (3)**

Provides advanced instruction in the use of digital imaging technology in radiology, including: digital imaging equipment, picture archival and communications systems, radiology information systems, hospital information systems, and various other radiology-related applications. Advanced techniques focus on operation, quality assurance, and radiation safety.

**RTMR 301 Introduction to Radiographic Procedures I (1-3)**

Nature and description of radiologic procedures for the nonradiologic technologist. Principles and medical techniques applied to the radiographic setting. Surveys anatomy and instrumentation. Includes observation laboratory.

**RTMR 302 Introduction to Radiographic Procedures II (1-3)**

Nature and description of radiologic procedures for the nonradiologic technologist. Principles and medical techniques applied to the radiographic setting. Surveys anatomy and instrumentation. Includes observation laboratory.

**RTMR 305 Introduction to Computed Tomography I (2)**

Introduces an overview of cross-sectional anatomy. Identifies normal anatomy in two- and three-dimensional planes. Addresses the structural and physiological functions of body systems.

**RTMR 306 Introduction to Computed Tomography II (2)**

Introduces basic principles, physics, imaging parameters, radiological effects, management, and patient protocol of computed tomography (CT).

Prerequisite: RTMR 305.

**RTMR 321 Radiographic Image Evaluation (2)**

Expands upon the fundamental image evaluation knowledge acquired in RTMR 253, 254, and 255. Advances understanding of image evaluation with reference to radiographic anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding.

**RTMR 334 CT and Cross-sectional Anatomy (2)**

Recognition of basic anatomical landmarks as visualized in axially created digital images

**RTMR 342 Professional Development (1)**

Provides an overview of the radiologic specialties, as well as fluoroscopy technology to generate images and treat patients. Examines the state and national

radiography organizations, continuing education, and services available to students and technologists.

Reviews the values and code of ethics of the radiography profession as it relates to employment. Students develop a professional development plan and resume to be used for their career development.

#### RTMR 345 Radiologic Pathology (2)

Reviews the pathologic processes most commonly viewed by radiographers using radiologic imaging methods.

#### RTMR 363 Comprehensive Review I (1)

Reviews major content areas emphasized on certification examinations. Student evaluation and performance analysis. Time provided to make class presentations, organize study materials, and take simulated registry examinations.

#### RTMR 365 Comprehensive Review II (1)

Continues review of major content areas emphasized on certification examinations. Student evaluation and performance analysis. Time provided to make class presentations, organize study materials, and take simulated registry examinations.

#### RTMR 371 Medical Radiography Affiliation I (5)

The first of six affiliation courses that total eighteen months of clinical experience. Students gain hands-on experience in basic patient care, radiographic procedures and positioning, radiation protection, radiographic exposure and techniques, critical thinking and problem solving, and patient and health care team communication. The combined six-part affiliation sequence fulfills state requirements for clinical hours in medical radiography.

#### RTMR 372 Medical Radiography Affiliation II (7)

Continues RTMR 371.

#### RTMR 373 Medical Radiography Affiliation III (12)

Continues RTMR 371 and 372.

#### RTMR 374 Medical Radiography Affiliation IV (10)

Continues RTMR 371, 372, and 373.

#### RTMR 375 Medical Radiography Affiliation V (10)

Continues RTMR 371, 372, 373, and 374.

#### RTMR 376 Mammography Prep Course (2)

The basics of mammography. Foundational information in the following areas: equipment, patient education and assessment, anatomy, and physiology and pathology of the breast. Techniques and technical factors in mammography, positioning and image evaluation, and quality control. For individuals working toward California state licensure in mammography.

#### RTMR 377 Mammography Laboratory (1)

Clinical experience required prior to sitting for the ARRT (M) examination. Students work with an affiliate to complete competencies specific to mammography.

Prerequisite: Must show proof of California State licensure in Mammography prior to acceptance.

#### RTMR 379 Special Project (1-3)

Project to be submitted in the form of a paper or a visual aid representing a topic of current interest in an area related to radiation sciences. Regular meetings provide guidance to the student.

#### RTMR 381 Topics in Medical Radiography I (1-3)

Surveys selected topics in medical radiography. Procedure summaries, projects, literature reviews. May be taken concurrently with RTMR 371-375 Radiography Affiliation I, II, III, IV, V for credit toward the baccalaureate degree.

#### RTMR 382 Topics in Medical Radiography II (1-3)

Surveys selected topics in medical radiography. Procedure summaries, projects, literature reviews. May be taken concurrently with RTMR 371-375 Radiography Affiliation I, II, III, IV, V for credit toward the baccalaureate degree.

**RTMR 383 Topics in Medical Radiography  
III (1-3)**

Surveys selected topics in medical radiography. Procedure summaries, projects, literature reviews. May be taken concurrently with RTMR 371-375 Radiography Affiliation I, II, III, IV, V for credit toward the baccalaureate degree.

**RTMR 384 Topics in Medical Radiography  
IV (1-3)**

Surveys selected topics in medical radiography. Procedure summaries, projects, literature reviews. May be taken concurrently with RTMR 371-375 Radiography Affiliation I, II, III, IV, V for credit toward the baccalaureate degree.

**RTMR 385 Topics in Medical Radiography  
V (1-3)**

Surveys selected topics in medical radiography. Procedure summaries, projects, literature reviews. May be taken concurrently with RTMR 371-375 Radiography Affiliation I, II, III, IV, V for credit toward the baccalaureate degree.

**RTMR 386 Medical Radiography Affiliation  
VI (10)**

Continues RTMR 371, 372, 373, 374, and 375.

**RTMR 401 Advanced Clinical Procedures I (1-3)**

Credit for clinical experience in an affiliated imaging department covering a wide range of radiographic procedures. Periodic evaluations by the clinical supervisor.

**RTMR 402 Advanced Clinical Procedures II (1-3)**

Credit for clinical experience in an affiliated imaging department covering a wide variety of radiographic procedures. Periodic evaluations by the clinical supervisor.

**RTMR 403 Advanced Clinical Procedures  
III (1-3)**

Credit for clinical experience in an affiliated imaging department covering a wide variety of radiographic procedures. Periodic evaluations by the clinical supervisor.

**RTMR 404 Advanced Clinical Procedures  
IV (1-3)**

Credit for clinical experience in an affiliated imaging department covering a wide variety of radiographic procedures. Periodic evaluations by the clinical supervisor.

**RTMR 454 Quality Management in Radiation  
Sciences (2)**

In-depth look at continuous quality management of all aspects in a radiology department, from equipment to personnel.

**RADIATION  
TECHNOLOGY—MEDICAL  
SONOGRAPHY**

**RTMS 339 Echocardiography I (4)**

Focuses on normal anatomy, scan techniques, cardiac measurement, and new dynamics. Case study presentations.

**RTMS 344 Introduction to Medical  
Sonography (5)**

Introduction to sonography—including ob-gyn, abdomen, vascular, neurosonography, cardiac, and pediatric. Covers terminology and scan techniques for all areas.

**RTMS 345 Ob-Gyn Sonography (5)**

Ob-Gyn scan techniques, fetal anatomy and pathologies, gynecological anatomy and pathologies. Student case presentations and case studies.

**RTMS 346 Vascular Technology/Doppler/Scan  
Techniques (5)**

Covers vascular technology, Doppler, abdomen, and small parts. Continues case studies and case presentations.

**RTMS 347 Echocardiography II (4)**

Echocardiography, adult and pediatric. Further focuses on anatomy, pathology, hemodynamics, and Doppler. Includes case studies and presentations.

**RTMS 348 Abdomen/Neurosonography (5)**

Sonography of the abdomen and neonatal neurosonography specialities and scan techniques. Visualizes sonography of the abdomen, cross-section scan techniques, and pathologies on ultrasound. Includes neonatal neurosonography; anatomy and pathologies also included.

**RTMS 358 Introduction to Ultrasound Physics and Instrumentation (1)**

Reviews algebraic and metric systems and physics principles as they relate to ultrasound.

**RTMS 379 Ultrasound Physics and Instrumentation I (2)**

Studies the basic physical principles and instrumentation of ultrasound production and imaging. Selected case study presentations, as assigned.

**RTMS 381 Topics in Medical Sonography I (1)**

Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

**RTMS 382 Topics in Medical Sonography II (1)**

Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

**RTMS 383 Topics in Medical Sonography III (1)**

Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

**RTMS 384 Topics in Medical Sonography IV (1)**

Includes board-review sessions; mock boards; and additional lectures in writing a CV, interviewing for a new position, and completing all paperwork associated with taking the national boards.

**RTMS 385 Topics in Medical Sonography V (1-3)**

Selected projects that may be taken concurrently with RTMS 971-978 Medical Sonography for credit toward the B.S. degree.

**RTMS 386 Topics in Medical Sonography VI (1-3)**

Selected projects that may be taken concurrently with RTMS 971-978 Medical Sonography for credit toward the B.S. degree.

**RTMS 387 Ultrasound Physics and Instrumentation II (1)**

Study and review of the basic physical principles and instrumentation of ultrasound, with additional emphasis on Doppler and artifacts.

Prerequisite: RTMS 379.

**RTMS 401 Advanced Clinical Procedures I (1-3)**

Credit for full-time, postcertification clinical practice in a medical sonography service. Periodic evaluations by the clinical supervisor.

**RTMS 402 Advanced Clinical Procedures II (1-3)**

Credit for full-time, postcertification clinical practice in a medical sonography service. Periodic evaluations by the clinical supervisor.

**RTMS 403 Advanced Clinical Procedures III (1-3)**

Credit for full-time, postcertification clinical practice in a medical sonography service. Periodic evaluations by the clinical supervisor.

**RTMS 404 Advanced Clinical Procedures IV (1-3)**

Credit for full-time, postcertification clinical practice in a medical sonography service. Periodic evaluations by the clinical supervisor.

**RTMS 961 Vascular Ultrasound Clinical Affiliation (1)**

Clinical experience in vascular ultrasound (416 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 962 Vascular Ultrasound Clinical Affiliation (10)**

Clinical experience in vascular ultrasound (416 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 963 Vascular Ultrasound Clinical****Affiliation (10)**

Clinical experience in vascular ultrasound (416 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 964 Vascular Ultrasound Clinical****Affiliation (10)**

Clinical experience in vascular ultrasound (300 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 965 Cardiac Ultrasound Clinical****Affiliation (12)**

Clinical experience in cardiac ultrasound (384 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 966 Cardiac Ultrasound Clinical****Affiliation (11)**

Clinical experience in cardiac ultrasound (352 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 967 Cardiac Ultrasound Clinical****Affiliation (11)**

Clinical experience in cardiac ultrasound (352 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 968 Cardiac Ultrasound Clinical****Affiliation (12)**

Clinical experience in cardiac ultrasound (440 clock hours per quarter) covering a wide variety of technical procedures.

**RTMS 971 Medical Sonography Clinical****Affiliation (11)**

A twelve-week, 384-hour clinical experience in medical sonography, consisting of four days/week rotations covering a wide variety of technical procedures.

**RTMS 972 Medical Sonography Clinical****Affiliation (11)**

Clinical experience in medical sonography (384 clock hours) covering a wide variety of technical procedures.  
Prerequisite: RTMS 971.

**RTMS 973 Medical Sonography Clinical****Affiliation (11)**

Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures  
Prerequisite: RTMS 972.

**RTMS 974 Medical Sonography Clinical****Affiliation (11)**

Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.  
Prerequisite: RTMS 973.

**RTMS 975 Medical Sonography Clinical****Affiliation (12)**

Clinical experience in medical sonography (384 clock hours) covering a wide variety of technical procedures.  
Prerequisite: RTMS 974.

**RTMS 976 Medical Sonography Clinical****Affiliation (11)**

Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.  
Prerequisite: RTMS 975.

**RTMS 977 Medical Sonography Clinical****Affiliation (11)**

Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.  
Prerequisite: RTMS 976.

**RTMS 978 Medical Sonography Clinical****Affiliation (11)**

Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.  
Prerequisite: RTMS 977.

## **RADIATION TECHNOLOGY—NUCLEAR MEDICINE**

### **RTNM 351 Principles of Nuclear Medicine I (3)**

Radioactivity and its application in medicine. Atomic and nuclear structure, nuclear reactions, sources of radiation, modes of radioactive decay, dosage calculations, radiation hazards, biological effects, instrumentation, and basic measurements. Laboratory.

### **RTNM 352 Principles of Nuclear Medicine II (3)**

Radioactivity and its application in medicine. Atomic and nuclear structure, nuclear reactions, sources of radiation, modes of radioactive decay, dosage calculations, radiation hazards, biological effects, instrumentation, and basic measurements. Laboratory.

### **RTNM 353 Nuclear Medicine Procedures I (2)**

Clinical applications of the principles discussed in RTNM 351, 352. Transmission and prevention of AIDS and other communicable diseases, with specific application to nuclear medicine. Laboratory.

### **RTNM 354 Nuclear Medicine Procedures II (2)**

Clinical applications of the principles discussed in RTNM 351, 352. Transmission and prevention of AIDS and other communicable diseases, with specific application to nuclear medicine. Laboratory.

### **RTNM 356 Positron Emission Tomography (2)**

Student learns the fundamental physics, instrumentation, and radionuclide requirements of positron emission tomography (PET).

### **RTNM 381 Topics in Nuclear Medicine I (1-3)**

Surveys selected topics in nuclear medicine. Procedure summaries, projects, literature reviews. May be taken concurrently with RTNM 971-974 for credit toward the baccalaureate degree.

### **RTNM 382 Topics in Nuclear Medicine II (1-3)**

Surveys selected topics in nuclear medicine. Procedure summaries, projects, literature reviews. May be taken concurrently with RTNM 971-974 for credit toward the baccalaureate degree.

### **RTNM 383 Topics in Nuclear Medicine III (1-3)**

Surveys selected topics in nuclear medicine. Procedure summaries, projects, literature reviews. May be taken concurrently with RTNM 971-974 for credit toward the baccalaureate degree.

### **RTNM 384 Topics in Nuclear Medicine IV (1-3)**

Surveys selected topics in nuclear medicine. Procedure summaries, projects, literature reviews. May be taken concurrently with RTNM 971-974 for credit toward the baccalaureate degree.

### **RTNM 401 Advanced Clinical Procedures I (3)**

Credit for full-time, postcertification clinical practice in a nuclear medicine service. Periodic evaluations by the clinical supervisor.

### **RTNM 402 Advanced Clinical Procedures II (3)**

Credit for full-time, postcertification clinical practice in a nuclear medicine service. Periodic evaluations by the clinical supervisor.

### **RTNM 403 Advanced Clinical Procedures III (3)**

Credit for full-time, postcertification clinical practice in a nuclear medicine service. Periodic evaluations by the clinical supervisor.

### **RTNM 404 Advanced Clinical Procedures IV (3)**

Credit for full-time, postcertification clinical practice in a nuclear medicine service. Periodic evaluations by the clinical supervisor.

### **RTNM 971 Nuclear Medicine Affiliation I (11)**

Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

### **RTNM 972 Nuclear Medicine Affiliation II (11)**

Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

### **RTNM 973 Nuclear Medicine Affiliation III (11)**

Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

**RTNM 974 Nuclear Medicine Affiliation IV (11)**

Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

**RADIATION  
TECHNOLOGY—RADIOLOGIST  
ASSISTANT****RTRA 371 Clinical Internship (2)**

A twelve-week, one day/week rotation totaling 96 hours of clinical experience. A mentored clinical experience during which students complete a wide variety of competencies that prepare them to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 372 Clinical Internship (5)**

An eleven-week rotation totaling 168 hours of clinical experience. A mentored clinical experience during which students complete a wide variety of competencies that prepare them to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 373 Clinical Internship (7)**

An eleven-week, three days/week rotation totaling 264 hours. During the mentored clinical experience students will complete a wide variety of competencies and will be able to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 384 Radiobiology and Health Physics (3)**

Reviews the effects of ionizing and nonionizing radiation and fundamental concepts of radiation protection. Promotes the conscientious operation of radiologic and fluoroscopic devices. Provides a complement to guided practice in operating the fluoroscopic device during clinical mentoring.

Procedures and techniques to optimize image quality while reducing radiation exposure to patients, operator, and ancillary personnel.

**RTRA 424 Medical-Legal Issues in Radiology (1)**

Introduction to the legal system as it pertains to radiation sciences. Concepts such as malpractice, litigation, informed consent, assault, and battery.

**RTRA 425 Fluoroscopy and Radiation  
Protection (1)**

Focuses on the quality assurance and management aspects of fluoroscopy. Includes the following topics: fluoroscopic radiation exposure and protection techniques, technical management, operation of fluoroscopic equipment, and quality control.

**RTRA 426 Radiology Reporting (1)**

Student develops and organizes an imaging report for procedures performed under the supervision of a radiologist. Topics include learning to report, style guidelines, and the American College of Radiology guidelines for communication.

**RTRA 431 Pharmacology I (2)**

Surveys pharmacological agents currently used in medicine, including their kinetics, dynamics, and therapeutics. Places special emphasis on pharmaceuticals commonly used by and given to radiology patients, including contrast media, antineoplastic agents, and radioactive isotopes.

**RTRA 432 Pharmacology II (2)**

Surveys pharmacological agents currently used in medicine, including their kinetics, dynamics, and therapeutics. Places special emphasis on pharmaceuticals commonly used by and given to radiology patients, including contrast media, antineoplastic agents, and radioactive isotopes.

**RTRA 444 Pathophysiology (2)**

Covers the structures and function of human biology. Assists with developing skills of interpreting laboratory data and increasing understanding of the pathophysiology behind patient care.

**RTRA 446 Clinical Management and Education (2)**

Focuses on analyzing and interpreting physiological data to assist in patient assessment and management. Utilizes critical thinking, action plans, and protocols. Includes relationship-centered patient care, effective communication, and patient education. Introduces clinical pathways, multidisciplinary clinical practice, and a focus on quality and coordination of care.

**RTRA 451 Patient Assessment I (2)**

Assists with skills in interviewing, physical examination, and interpreting laboratory data. Increases understanding of the pathophysiology behind patient care. Emphasizes analysis and interpretation of physiological data to assist in patient assessment and management.

**RTRA 452 Patient Assessment II (2)**

Assists with developing skills in interviewing, physical examination, and interpreting laboratory data. Increases understanding of the pathophysiology behind patient care. Emphasizes analysis and interpretation of physiological data to assist in patient assessment and management.

**RTRA 471 Clinical Internship I (2)**

A twelve-week, one day/week rotation for a total of 96 hours of mentored clinical experience. Focuses on a wide variety of competencies that enable students to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 472 Clinical Internship II (5)**

An eleven-week, two-day/week rotation totaling 176 hours of mentored clinical experience. Focuses on a wide variety of competencies that enable students to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 473 Clinical Internship III (6)**

An eleven-week, three days/week rotation totaling 264 hours. A mentored clinical experience during which students complete a wide variety of competencies that prepare them to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 474 Clinical Internship (7)**

Clinical internship (minimum of 264 clock hours). A mentored clinical experience, students during which students complete a wide variety of competencies that prepare them to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

**RTRA 476 Topics for the Radiologist Assistant (2)**

Surveys selected topics in the radiologist assistant scope of practice for credit toward the master's degree in radiologist assistant. Topics may include procedures, projects, or literature reviews.

**RTRA 491 Cross-sectional Anatomy I (1)**

Identifies normal and abnormal anatomy in two-dimensional as well as three-dimensional planes. Relates cross-sectional view of anatomy and pathology to radiology procedures.

**RTRA 492 Cross-sectional Anatomy II (1)**

Identifies normal and abnormal anatomy in two-dimensional as well as three-dimensional planes. Relates cross-sectional view of anatomy and pathology to radiology procedures.

**RTRA 521 Radiology Procedures and Image Evaluation I (3)**

Provides a framework for various imaging procedures and the role of the radiologist assistant in the radiology department. Provides the framework for systematic observation of static, digital, X-sectional, and dynamic diagnostic images for the purpose of evaluating the presence of abnormalities, anomalies, and pathological conditions.

### RTRA 522 Radiology Procedures and Image Evaluation II (3)

Provides a framework for various imaging procedures and the role of the radiologist assistant in the radiology department. Provides the framework for systematic observation of static, digital, X-sectional, and dynamic diagnostic images for the purpose of evaluating the presence of abnormalities, anomalies, and pathological conditions.

### RTRA 523 Radiology Procedures and Image Evaluation III (3)

Provides a framework for various imaging procedures and the role of the radiologist assistant in the radiology department. Provides the framework for systematic observation of static, digital, X-sectional, and dynamic diagnostic images for the purpose of evaluating the presence of abnormalities, anomalies, and pathological conditions.

### RTRA 524 Radiology Procedures and Image Evaluation IV (3)

Provides a framework for various imaging procedures and the role of the radiologist assistant in the radiology department. Provides the framework for systematic observation of static, digital, X-sectional, and dynamic diagnostic images for the purpose of evaluating the presence of abnormalities, anomalies, and pathological conditions.

### RTRA 571 Clinical Internship IV (6)

A thirteen-week, three days/week rotation totaling 312 hours of mentored clinical experience. Focuses on a wide variety of competencies that enable students to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

### RTRA 572 Clinical Internship V (6)

An eleven-week, three days/week rotation totaling 264 hours of mentored clinical experience. Focuses on a wide variety of competencies that enable students to generate a report stating initial observations of

diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

### RTRA 573 Clinical Internship VI (6)

An eleven-week, three days/week rotation totaling 264 hours of mentored clinical experience. Focuses on a wide variety of competencies that enable students to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

### RTRA 574 Clinical Internship VII (6)

An eleven-week, three days/week rotation totaling 264 hours of mentored clinical experience. Focuses on a wide variety of competencies that enable students to generate a report stating initial observations of diagnostic images on neonatal, pediatric, adult, and geriatric populations. Students utilize clinical contracts and a clinical portfolio.

### RTRA 588 Comprehensive Review (1)

Review of the major content areas covered in the radiologist assistant program. Student evaluation and performance analysis accomplished.

### RTRA 591 Radiologist Assistant Research Project I (1)

Student completes a faculty-facilitated research project related to radiation sciences. Radiation sciences faculty must approve all projects.

### RTRA 592 Radiologist Assistant Research Project II (2)

Student completes a faculty-facilitated research project related to radiation sciences. Radiation sciences faculty must approve all projects.

### RTRA 593 Radiologist Assistant Research Project III (2)

Student completes a faculty-facilitated research project related to radiation sciences. Radiation sciences faculty must approve all projects.

**RTRA 614 Professional Portfolio (1)**

Student develops a portfolio that demonstrates progression toward the student learning outcomes established by Loma Linda University—including wholeness, Christ-centered values, commitment to discovery and lifelong learning, effective communication, embracing and serving a diverse world, and collaboration.

## **RADIATION TECHNOLOGY—RADIATION SCIENCES**

**RTRS 584 Management of Imaging Informatics (3)**

Provides knowledge and understanding of the practical operational and managerial issues essential to the radiology information system (RIS) and the picture archiving and communication system (PACS) as they relate to the electronic health record system (EHRS). Covers basic RIS and PACS architecture concepts, needs assessment and procurement strategies, vendor selection and contract negotiation, workflow assessment and design, implementation and education, and quality assurance (QA) strategies to optimize patient care practices in a filmless environment.

**RTRS 595 Research and Statistics Concepts and Methods: Intermediate (3)**

In-depth study of research designs, including completely randomized designs and randomized block designs; and the statistical tests—such as ANOVA (one-way, repeated measures, factorial)—used to analyze the data. Introduces multiple linear regression and correlation, as well as model-building techniques. Interprets multivariate analysis computer output and hands-on statistical computer experience. Introduces nonparametric statistical tests and their appropriate use. Measures and analyzes data for validity and reliability studies. Evaluates research literature that uses multivariate analysis for data analysis.

**RTRS 614 Professional Portfolio (1)**

Completion of a professional portfolio that contains evidence of the personal growth and learning that occurs while the student is progressing through the

program. Reflection on the seven core values of Loma Linda University, leadership assessment results, and final papers or projects from student's course work. Student's reflections on the growth, insights, and application of knowledge gained while in the program.

**RTRS 615 Advances in Technology: Educational and Managerial Issues (3)**

Student evaluates how the rapidly advancing technology in radiation sciences impacts the educational, managerial, and administrative realms. Student develops a project incorporating advancing technology to his/her specialty. Student evaluates how the rapidly advancing technology in radiation sciences impacts the educational, managerial, and administrative realms. Student develops a project incorporating advancing technology to his/her specialty.

**RTRS 621 Capstone Project I (3)**

The first of a two-course sequence, Capstone I and Capstone II. Emphasizes selection of a viable research topic, refinement of a research question, and development of a literature review that will become a paper of publishable quality in the Capstone II course.

**RTRS 622 Capstone Project II (3)**

The second of a two-course sequence, Capstone I and Capstone II. Emphasizes selection of a viable research topic, refinement of a research question, and development of a literature review that will become a paper of publishable quality.

## **RADIATION TECHNOLOGY—SPECIAL IMAGING**

### **RTSI 307 Introduction to Computed Tomography Completion Course (2)**

Provides an overview of patient care in CT imaging, general aspects of patient care, pharmacology and drug administration, and radiation safety as a final requirement of the CT certificate. Examines some areas of radiology management. Prepares students for the additional areas required in the National Registry for the specialty area of CT. Prerequisite: Completion of the LLU Medical Radiography Program.

Prerequisite: RTMR 305, RTMR 306.

### **RTSI 361 MRI Physics I (2)**

Two-part course dealing with basic principles, physics, imaging parameters, biological effects, management, and patient protocol of magnetic resonance imaging (MRI).

### **RTSI 362 MRI Physics II (2)**

Basic principles, physics, imaging parameters, biological effects, management, and patient protocol of magnetic resonance imaging (MRI).

Prerequisite: RTSI 361.

### **RTSI 364 CT Patient Care and Procedures (2)**

Overview of patient care in CT imaging. General aspects of patient care, pharmacology and drug administration, radiation safety. Examines some areas of radiology management. Prepares students for the additional areas required in the national registry for the specialty areas of CT.

### **RTSI 365 MRI Patient Care and Procedures (2)**

Includes patient care, safety, pharmacology, quality control, and procedures involved with magnetic resonance imaging (MRI) for MRI technologists.

### **RTSI 367 Cross-sectional Radiographic Anatomy (2)**

Overview of gross anatomy. Identifies normal anatomy in two-dimensional as well as three-

dimensional planes. Relation of the structural as well as the physiological functions of the different body systems.

### **RTSI 369 CT Physics (2)**

Basic principles, physics, imaging parameters, radiological effects, management, and patient protocol of computed tomography (CT).

### **RTSI 381 Topics in Special Imaging I (1-3)**

Surveys selected topics in special imaging. Procedure summaries, projects, literature reviews. May be taken concurrently with RTSI 971-973 for credit toward the baccalaureate degree.

### **RTSI 382 Topics in Special Imaging II (1-3)**

Surveys selected topics in special imaging. Procedure summaries, projects, literature reviews. May be taken concurrently with RTSI 971-973 for credit toward the baccalaureate degree.

### **RTSI 383 Topics in Special Imaging III (1-3)**

Surveys selected topics in special imaging. Procedure summaries, projects, literature reviews. May be taken concurrently with RTSI 971-973 for credit toward the baccalaureate degree.

### **RTSI 389 Special Project (1)**

Student submits project in the form of a paper or a visual aid representing a topic of current interest in an area related to radiation sciences. Regular meetings provide guidance to the student.

### **RTSI 391 CVI Internship I (3)**

Advanced clinical training for qualified CRT, ARRT-certified individuals with current CPR and fluoroscopy permit. Three quarters (nine months) of clinical time in the areas of cardiovascular/general angiography and interventional radiography. Full-time (40 hours/week), clinical-learning experience.

### **RTSI 401 Advanced Clinical Procedures I (3)**

Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

**RTSI 402 Advanced Clinical Procedures II (3)**

Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

**RTSI 403 Advanced Clinical Procedures III (3)**

Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

**RTSI 404 Advanced Clinical Procedures IV (3)**

Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

**RTSI 971 Special Imaging (CT/MRI) Affiliation I (10)**

A ten-week, four days/week clinical rotation totaling 320 hours of clinical experience in CT (computerized tomography) and MRI (magnetic resonance imaging) covering a wide variety of technical procedures.

**RTSI 972 Special Imaging (CT/MRI) Affiliation II (10)**

An eleven-week, four days/week clinical rotation totaling 320 hours of clinical experience in CT (computerized tomography) and MRI (magnetic resonance imaging) covering a wide variety of technical procedures.

**RTSI 973 Special Imaging (CT/MRI) Affiliation III (10)**

A ten-week, four days/week rotation totaling 320 hours of clinical experience in CT (computerized tomography) and MRI (magnetic resonance imaging) covering a wide variety of technical procedures.

**RTSI 992 CVI Internship II (12)**

Advanced clinical training for qualified CRT, ARRT-certified individuals with current CPR and fluoroscopy permit. Three quarters (nine months) of clinical time in the areas of cardiovascular/general angiography and interventional radiography. Full-time (40 hours/week), clinical-learning experience.

**RTSI 993 CVI Internship III (12)**

Advanced clinical training for qualified CRT, ARRT-certified individuals, with current CPR and fluoroscopy permit. Three quarters (nine months) of clinical time in the areas of cardiovascular/general angiography and interventional radiography. Full-time (40 hours/week), clinical-learning experience.

## **RADIATION TECHNOLOGY—RADIATION THERAPY**

**RTTH 332 Radiation Biology (1)**

The effects of radiation on living systems.

**RTTH 342 Patient-Care Practices in Radiation Therapy (2)**

Aspects of radiation therapy patient care. Emphasizes equipment, treatment, and psychological support of the patient. Transmission and prevention of AIDS and other communicable diseases, with specific application to radiation therapy.

**RTTH 344 Radiation Therapy Procedures (2)**

Study and/or practical applications of patient support and immobilization devices. Principles of choosing patient-treatment modalities. Methods of tumor localization. Purposes and utilization of beam direction and modification equipment.

**RTTH 345 Quality Assurance in Radiation Therapy (1)**

General aspects of continuous quality improvement (CQI) and specific aspects of quality management as they relate to the Department of Radiation Therapy. Examines the comprehensive nature of a quality-management program, and quantification of the radiation therapist's role on the CQI team.

**RTTH 348 Radiation Therapy Review (1)**

Comprehensively reviews radiation physics, protection, and dosimetry. Applies radioactive materials. Radiobiology. Technical aspects of radiation oncology.

**RTTH 353 Psycho-Oncology (2)**

Examines potential psychological effects of malignant disease on the patient and family. The patient's emotional responses to the initial diagnosis, and methods of coping and adapting to the disease and its treatment. Role of the radiation therapist as a member of the patient's emotional-support team.

**RTTH 355 Physical Principles of Radiation Therapy I (3)**

Nature and description of the structure of matter and energy. Radioactive decay schemes and interaction of photons and gamma radiation. Instrumentation involved in measurement of ionizing radiation, beam quality, and dose. Laboratory.

**RTTH 356 Physical Principles of Radiation Therapy II (3)**

Discusses the following areas: calibration techniques of photon, particulate, and electron beams; percentage depth dose, tissue-air ratios, treatment planning, scatter functions, field flatness, and symmetry; field shaping, arc therapy, and tissue inhomogeneities; and clinical dosimetric considerations. Includes laboratory.

Prerequisite: RTTH 364, RTTH 365.

**RTTH 357 Applied Dosimetry (2)**

Brachytherapy sources, isotope calibration, protection, and implantation techniques. Teletherapy equipment and protection. Quality assurance for external and brachytherapy procedures. Laboratory.

**RTTH 358 Advanced Dosimetry (3)**

Develops student's ability to construct treatment plans using the 3-D planning system. Integrates theory with practice. Student completes a number of plans that utilize all major treatment techniques

Prerequisite: RTTH 357; or equivalent.

**RTTH 364 Radiation Oncology I (2)**

A three-term course covering pathology, etiology, epidemiology, histopathology, metastasis, staging, and treatment of major types of malignant neoplasms. Includes technique/simulation laboratory.

**RTTH 365 Radiation Oncology II (2)**

A three-term course covering pathology, etiology, epidemiology, histopathology, metastasis staging, and treatment of major types of malignant neoplasms.

Prerequisite: RTTH 364.

**RTTH 366 Radiation Oncology III (2)**

The third in a three-quarter course covering pathology, etiology, epidemiology, histopathology, metastasis, staging, and treatment of major types of malignant neoplasms.

**RTTH 381 Topics in Radiation Therapy I (1-3)**

Surveys selected topics in radiation therapy.

Procedure summaries, projects, literature reviews. May be taken concurrently with RTTH 971-974 for credit toward the baccalaureate degree.

**RTTH 382 Topics in Radiation Therapy II (1-3)**

Surveys selected topics in radiation therapy.

Procedure summaries, projects, literature reviews. May be taken concurrently with RTTH 971-974 for credit toward the baccalaureate degree.

**RTTH 383 Topics in Radiation Therapy III (1-3)**

Surveys selected topics in radiation therapy.

Procedure summaries, projects, literature reviews. May be taken concurrently with RTTH 971-974 for credit toward the baccalaureate degree.

**RTTH 384 Topics in Radiation Therapy IV (1-3)**

Surveys selected topics in radiation therapy.

Procedure summaries, projects, literature reviews. May be taken concurrently with RTTH 971-974 for credit toward the baccalaureate degree.

**RTTH 401 Advanced Clinical Procedures I (3)**

Credit for full-time, postcertification clinical practice in a radiation therapy service. Periodic evaluations by the clinical supervisor.

**RTTH 402 Advanced Clinical Procedures II (3)**

Credit for full-time, postcertification clinical practice in a radiation therapy service. Periodic evaluations by the clinical supervisor.

**RTTH 403 Advanced Clinical Procedures III (3)**

Credit for full-time, postcertification clinical practice in a radiation therapy service. Periodic evaluations by the clinical supervisor.

**RTTH 404 Advanced Clinical Procedures IV (3)**

Credit for full-time, postcertification clinical practice in a radiation therapy service. Periodic evaluations by the clinical supervisor.

**RTTH 971 Radiation Therapy Affiliation I (7)**

The first of a three-course sequence totaling twelve months of clinical experience covering a wide variety of technical procedures. Clock hours: 252.

**RTTH 972 Radiation Therapy Affiliation II (7)**

Continues RTTH 971. Clock hours: 231.

**RTTH 973 Radiation Therapy Affiliation III (7)**

Continues RTTH 971, 972. Clock hours: 231.

**RTTH 974 Radiation Therapy Affiliation IV (10)**

Continues RTTH 971-973. Clock hours: 330.

**RTTH 975 Radiation Therapy Affiliation V (10)**

Continues RTTH 971-974. Clock hours: 330.

Prerequisite: RTTH 971, RTTH 972, RTTH 973, RTTH 974.

**PHARMACY PRACTICE—DRUG INFORMATION****RXDI 664 Drug Information and Literature Evaluation (3)**

Introduces drug information resources. Trains students to retrieve and critically evaluate literature related to providing pharmaceutical care to patients. Introduces multiple forms of drug literature, including primary, secondary, tertiary, and Internet resources. Trains students to document drug information requests and report adverse drug reactions. Discusses issues related to herbal medicine and alternative therapeutic options. Using knowledge obtained through classroom course assignments, students examine published information to answer common drug information questions.

**PHARMACY PRACTICE—EXPERIENTIAL EDUCATION****RXEE 562 Pharmacist Guided Self-Care 1 (3)**

Familiarizes the student with nonprescription health care products. Emphasizes patient assessment, indicated medical conditions, pharmacology, product selection, self-administration techniques, and patient counseling/follow-up. Lecture/discussion simulates patient encounters.

Prerequisite: P1, Winter Quarter standing.

**RXEE 563 Pharmacist Guided Self-Care 2 (3)**

Familiarizes the student with nonprescription health care products. Emphasizes patient assessment, indicated medical conditions, pharmacology, product selection, self-administration techniques, and patient counseling/follow-up. Lecture/discussion simulates patient encounters.

Prerequisite: RXEE 562; successful completion of RXEE 562; and P1, Spring Quarter standing.

**RXEE 591 Introduction to Community Pharmacy Practice I (2)**

Part of a two-course sequence for practical exposure to community pharmacy practice. Student learns through practicum and reflection the basic skills required in community pharmacy practice

**RXEE 592 Introduction to Community Pharmacy Practice II (2)**

Part of a two-course sequence for practical exposure to community pharmacy practice. Student learns basic skills required in community pharmacy practice through practicum and reflection.

**RXEE 690 Introduction to Hospital Pharmacy Practice (2)**

Exposes students to the various clinical, administrative, and distributive roles and responsibilities of a hospital pharmacist.

Prerequisite: P2 standing.

**RXEE 790 Introduction to Clinical Pharmacy Practice (2)**

Exposes students to a variety of clinical pharmacy services—including ambulatory care, medicine, and a number of specialty practice areas.

Prerequisite: P3 standing.

**RXEE 806 Advanced Clinical Community Practice (6)**

Supervised clinical pharmacy-practice experience that provides advanced pharmaceutical care skills and opportunities in the area of community practice.

**RXEE 807 Academia and Research (6)**

Supervised education that provides additional experiences in the combined areas of academia and research.

**RXEE 808 Clinical Outcomes and Pharmacy Practice Research (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care and research skills in the area of clinical outcomes and pharmacy practice.

**RXEE 809 Clinical Simulation (6)**

Supervised education that provides additional experiences in the area of clinical simulation of pharmacy practice and pharmacotherapy.

**RXEE 810 Research/Psychiatry (6)**

Supervised education and experiences emphasizing the development of research and pharmaceutical care skills in the area of psychiatry.

**RXEE 811 Anticoagulation (6)**

Supervised clinical pharmacy-practice experience that provides pharmaceutical care skills and opportunities in the area of anticoagulation.

**RXEE 812 Medication Therapy Management (6)**

Supervised clinical pharmacy-practice experience that provides pharmaceutical care skills and opportunities in the area of medication therapy management.

**RXEE 813 Mission Service (6)**

Supervised clinical pharmacy-practice experience that provides pharmaceutical care skills and opportunities in the area of organization, preparation, and implementation of pharmacy services under the auspices of mission service.

**RXEE 814 Medication Safety (6)**

Supervised clinical pharmacy-practice experience that provides pharmaceutical care skills and opportunities in the area of medication safety.

**RXEE 856 Medicine (6)**

Supervised clinical pharmacy experience emphasizing the development of pharmaceutical care skills in an adult, acute care, inpatient setting.

**RXEE 857 Hospital Practice (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care and medication-distribution skills in an inpatient setting.

**RXEE 858 Ambulatory Care (6)**

Supervised clinical pharmacy experience emphasizing the development of pharmaceutical care skills in ambulatory patient care setting.

**RXEE 859 Clinical Community (6)**

Supervised clinical pharmacy experience emphasizing the development of pharmaceutical care skills in a community pharmacy (chain or independent) environment.

**RXEE 860 Dermatology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of dermatology.

**RXEE 861 Gastroenterology/Hepatology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty areas of gastroenterology and hepatology.

**RXEE 862 Health Policy (6)**

Preceptor-supervised education that provides additional experience in the area of health policy.

**RXEE 863 Investigational Drugs (6)**

Preceptor-supervised education that provides additional experience in the area of investigational drugs.

**RXEE 864 Ophthalmology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of ophthalmology.

**RXEE 865 State/National Pharmacy Associations (6)**

Preceptor-supervised education that provides additional experience in the area of state/national pharmacy association administration.

**RXEE 868 Drug Information (6)**

Supervised education that provides additional experience in the area of drug information.

**RXEE 869 Academia (6)**

Supervised education that provides additional experience in the area of academia.

**RXEE 870 Administration/Management (6)**

Supervised education that provides additional experience in the area of administration and/or management in a health-care system or other inpatient environment.

**RXEE 871 Cardiology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of cardiology.

**RXEE 872 Research (6)**

Preceptor-supervised education that provides additional experience in the area of research.

**RXEE 873 Long Term Care (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of long-term care.

**RXEE 874 Infectious Disease (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of infectious disease.

**RXEE 875 Neurology (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of neurology.

**RXEE 876 Nuclear Pharmacy (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of nuclear pharmacy.

**RXEE 877 Nutrition (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of nutrition.

**RXEE 878 Oncology (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of oncology.

**RXEE 879 Obstetrics/Gynecology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of obstetrics and gynecology.

**RXEE 880 Pharmacokinetics (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of pharmacokinetics.

**RXEE 881 Pharmaceutical Industry (6)**

Preceptor-supervised education that provides additional experience in the area of pharmaceutical industry.

**RXEE 882 Pain Management (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of pain management.

**RXEE 883 Managed Care (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of managed care.

**RXEE 884 Pediatric Transplant (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of pediatric transplant.

**RXEE 885 Pediatrics/Neonatology (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty areas of pediatrics and neonatology.

**RXEE 886 Home Health Care (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of home health care.

**RXEE 887 Geriatrics (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of geriatrics.

**RXEE 888 Compounding (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of compounding.

**RXEE 889 Specialty Independent (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of specialty independent practice.

**RXEE 890 Psychiatry (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of psychiatry.

**RXEE 891 Emergency Medicine and Trauma (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of emergency medicine and trauma.

**RXEE 892 Pharmacoeconomics and Outcomes Research (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of pharmacoeconomics and outcomes research.

**RXEE 893 Pharmacy Systems/Technology (6)**

Preceptor-supervised education that provides additional experience in the areas of pharmacy systems and technology.

**RXEE 894 Transplant (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of transplant.

**RXEE 895 Critical Care (6)**

Supervised pharmacy experience emphasizing the development of pharmaceutical care skills in the specialty area of critical care.

**RXEE 896 Poison Control and Toxicology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of poison control and toxicology.

**RXEE 897 Public Health Service (6)**

Preceptor-supervised education that provides additional experience in the area of public health service.

**RXEE 898 Nephrology (6)**

Preceptor-supervised pharmacy-practice experience that emphasizes the development of pharmaceutical care skills in the specialty area of nephrology.

## PHARMACY PRACTICE—PHARMACEUTICAL CARE

### RXPC 561 Pharmaceutical Care I (4)

The first in a sequence of three courses that uses early practice experiences to expose students to career opportunities and issues currently shaping the profession. Introduces foundational concepts and attitudes—balanced with real-world observation—necessary to understand the practice of pharmaceutical care, the essence of being a professional, and the challenges of applying these ideals. Designed to instill a sense of professionalism, promote positive practice philosophies, develop relationships with practitioners, evaluate potential career paths, and foster appreciation for the lifelong-learning nature of pharmacy. Substantial organized, early practice experiences reinforce knowledge and skills taught in didactic course work and encourage reflection. Oral and written communication practice through presentations and class discussions. Students required to learn the top 200 drugs by brand and generic names, therapeutic and drug classifications, and manufacturer.

### RXPC 571 Pharmacist Guided Self-Care I (3)

Familiarizes the student with nonprescription health care products. Emphasizes patient assessment, indicated medical conditions, pharmacology, product selection, self-administration techniques, and patient counseling/follow-up. Lecture/discussion to simulate patient encounters.

### RXPC 572 Pharmacist Guided Self-Care II (3)

Continues RXPC 571.

### RXPC 760 Clinical Pharmacokinetics (2)

Focuses on initiating and adjusting individualized drug dosages for selected medications based on patient demographics, organ function, concomitant medications, disease states, and measured drug-plasma levels. Addresses altered drug disposition in special patient populations, i.e., pediatrics, geriatrics, and the obese. Challenges students to critically apply mathematical modeling and clinical pharmacotherapy knowledge at higher levels of sophistication. Students

apply knowledge acquired in classroom to longitudinal case study while following patients in the pharmaceutical care laboratory.

Prerequisite: P3 standing.

### RXPC 761 Pharmaceutical Care Laboratory I (4)

The first of three quarters of laboratory course work that familiarizes students with and educates them about major issues in contemporary pharmacy practice. Teaches the important roles of the pharmacist in drug-therapy management—including evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management. Stresses the application of appropriate communication and computer skills in conjunction with these activities. Emphasizes the role of the pharmacist as a health educator. Student gains experience in other practical situations—such as drug-administration techniques, devices, and compounding techniques.

### RXPC 762 Pharmaceutical Care Laboratory II (3)

The second of three quarters of laboratory course work that familiarizes students with and educates them about major issues in contemporary pharmacy practice. Teaches the important roles of the pharmacist in drug-therapy management—including evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management. Stresses the application of appropriate communication and computer skills in conjunction with these activities. Emphasizes the role of the pharmacist as a health educator. Student gains experience in other practical situations—such as drug-administration techniques, devices, and compounding techniques.

### RXPC 763 Pharmaceutical Care Laboratory III (4)

The third of three quarters of laboratory course work that familiarizes students with and educates them about major issues in contemporary pharmacy practice. Teaches the important roles of the pharmacist in drug-therapy management—including evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management. Stresses application of appropriate communication and computer skills in conjunction with these activities.

Student gains experience in other practical situations—such as drug-administration techniques, devices, and compounding techniques.

Prerequisite: P3, Spring Quarter standing.

## PHARMACEUTICAL SCIENCES

### RXPS 511 Pharmaceutics I (3)

The first in a series of three courses that presents the physicochemical and biological factors affecting the stability, kinetics, bioavailability, and bioequivalence of drugs in dosage forms. Applies this knowledge to dosage form design, formulation, and drug-delivery systems. Focuses on the theory, technology, formulation, evaluation, and dispensing of solid, semisolid, and liquid dosage forms. Laboratory sessions involve students in the preparation and evaluation of dosage forms.

### RXPS 512 Pharmaceutics II (4)

Surveys conventional dosage forms—including oral, topical, and parenteral medications— with emphasis on formulation, preparation, and effectiveness. Continues RXPS 511.

### RXPS 513 Pharmaceutics III (3)

Studies the mathematical, physicochemical, and biological principles concerned with the formulation, preparation, and effectiveness of pharmaceutical dosage forms. Continues RXPS 512.

Prerequisite: RXPS 512.

### RXPS 515 Pharmaceutics Laboratory I (0.5)

Laboratory designed for the student to apply pharmaceutical principles and to develop proficiency when compounding selected formulations and employing aseptic techniques.

Prerequisite: RXPS 511. Corequisite: RXPS 512.

### RXPS 516 Pharmaceutics Laboratory II (0.5)

Continues RXPS 515.

### RXPS 524 Physiology I (3)

The first in a sequence of three courses. Covers the nervous, endocrine, and urinary systems. Focuses on physiological processes required for maintenance of

whole-body homeostasis. Presentation of anatomical relationships and structures serves to support the physiological topics discussed. Emphasizes targets for pharmaceutical intervention and the relationship between biochemical processes and drug metabolism and action.

### RXPS 525 Physiology II (3)

The second in a sequence of three courses. Covers the gastrointestinal, cardiovascular, and respiratory systems. Focuses on the physiological processes required for maintenance of whole-body homeostasis. Presentation of anatomical relationships and structures serves to support the physiological topics discussed. Emphasizes targets for pharmaceutical intervention and the relationship between biochemical processes and drug metabolism and action.

### RXPS 526 Physiology III (3)

The third in a sequence of three courses. Introduces pathophysiological processes involved in the development and progression of important diseases. Discusses diabetes, metabolic syndrome, cardiovascular disease, HIV infection/AIDS, and cancer. Reviews basic science concepts from a variety of courses completed in previous quarters. Lectures supported with handouts of current scientific literature. Practical training on glucose monitoring and blood pressure screening.

### RXPS 581 Biochemistry I (3)

The first in a two-part series that addresses the structure-function relationships of major biomolecules; enzymes in biochemistry; human energy metabolism; and major pathways for human protein, carbohydrate, and lipid metabolism. Discusses important organic functional groups, nomenclature and physical properties, characteristic reactions, stereochemistry, and acid-base properties that are important considerations for drug action. Emphasizes principles of biochemistry as they relate to pH and buffers; hemostasis; enzyme functions; regulation of intermediary metabolism; chemical signaling; and interconversions in the living system, including the role of vitamins, hormones, and enzyme inhibitors. Discusses biotechnological advances, when appropriate.

**RXPS 582 Biochemistry II (3)**

The second in a two-part series that addresses the structure-function relationships of major biomolecules; enzymes in biochemistry; human energy metabolism; and major pathways for human protein, carbohydrate, and lipid metabolism. Discusses important organic functional groups, nomenclature and physical properties, characteristic reactions, stereochemistry, and acid-base properties that are important considerations for drug action. Emphasizes principles of biochemistry as they relate to pH and buffers; hemostasis; enzyme functions; regulation of intermediary metabolism; chemical signaling; and interconversions in the living system, including the role of vitamins, hormones, and enzyme inhibitors. Discusses biotechnological advances, when appropriate.

**RXPS 610 Pharmacokinetics (4)**

Teaches the basic principles of absorption, distribution, metabolism, and elimination of drugs from the body. Focuses on physical, physiological, and biochemical factors that impact these processes. Includes clinical pharmacokinetics principles and practical examples in the recitation periods.

Prerequisite: Successful completion of all P1-level courses and P2; Autumn Quarter standing.

**RXPS 651 Principles of Medicinal Chemistry I (3)**

The first in a three-course sequence that focuses on the chemistry of drug entities. Effects of a drug's chemistry on its various properties, such as pharmacology, toxicology, absorption, distribution, metabolism, excretion, mechanism of action, drug-drug interactions, dosage form formulation(s), stability, cost, and use.

**RXPS 652 Principles of Medicinal Chemistry II (4)**

The second in a three-course sequence that focuses on the chemistry of drug entities. Effects of a drug's chemistry on its various properties, such as pharmacology, toxicology, absorption, distribution, metabolism, excretion, mechanism of action, drug-drug interactions, dosage form formulation(s), stability, cost, and use.

Prerequisite: RXPS 651.

**RXPS 653 Principles of Medicinal Chemistry III (3)**

The third in a three-course sequence that focuses on the chemistry of drug entities. Effects of a drug's chemistry on its various properties, such as pharmacology, toxicology, absorption, distribution, metabolism, excretion, mechanism of action, drug-drug interactions, dosage form formulation(s), stability, cost, and use.

Prerequisite: RXPS 652.

**RXPS 710 Dietary Supplements (3)**

Introduces students to the use of dietary manipulations—including herbals and other supplements—in patient health. Includes legal, biochemical, and formulation issues; benefits and risks of specific agents; and interactions with pharmaceutical treatment.

**RXPS 717 Introduction to Traditional Chinese Medicine (3)**

Introduces traditional Chinese medicine—a term used to describe a predominantly preventive system of health care that goes beyond specific medical practices to an integration of wellness with all other aspects of life. Familiarizes the student with this alternative world view, which may in many ways serve as a model for current, counseling-intensive pharmacy practice.

Prerequisite: P3 standing.

**RXPS 718 Clinical Toxicology (3)**

Discusses potential toxicity as an intrinsic feature of pharmacy practice. Emphasizes understanding of basic principles of toxicology that can be applied to any toxic emergency that may arise. Focuses on possible toxic effects/consequences, of which the pharmacist should be aware, of drugs and other products sold in pharmacies. Discusses treatment of toxicity, which may require antidotes that the pharmacist will be required to provide.

**RXPS 720 Novel Anticancer Drug Targets (1)**

Provides insight into newly developed anticancer drugs and novel developments in cancer therapeutics.

**RXPS 730 Current Topics in Medicinal Chemistry and Drug Design (1)**

Focuses on discovery and design of new drugs for new therapeutic targets, and on development of new approaches for treatment of diseases.

**RXPS 784 Special Topics in Pharmaceutical Sciences (1-4)**

Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

**PHARMACY CONJOINT****RXRX 501 School of Pharmacy Forum (0)**

Offered each quarter throughout the four-year program. Weekly meetings to provide opportunity for presentations and discussions on current topics affecting pharmacy, health care, and students' career paths. Serves as a forum for students to network and be informed of activities and developments within the School of Pharmacy and Loma Linda University. Exposes students to leaders within the profession, reputable practitioners from various settings, top researchers, and other renowned individuals who discuss important issues, career opportunities, latest research results, and the practice of pharmacy.

**RXRX 506 Introduction to Pharmacy Leadership (1)**

Offers academic credit for activities related to leadership development associated with the California Pharmacy Student Leadership Program. Strengthens leadership behavior. Students invited to take part in this program must register for this course and complete it as a condition of their participation. May be repeated once for a maximum of 2 units.

Prerequisite: Permission of the Office of Student Affairs; PY-1 Spring Quarter professional year standing.

**RXRX 507 Professional Development (0)**

Emphasizes the vital role of pharmacy's professional organizations by providing a vehicle within the School of Pharmacy's formal curriculum for student participation. Develops students' leadership abilities

and cultivates their input on issues affecting the profession. Offered each quarter throughout the four-year program

Prerequisite: P1 standing.

**RXRX 601 School of Pharmacy Forum (0)**

Weekly meetings provide opportunity for presentations and discussions on topics currently affecting pharmacy, health care, and students' career paths. Serves as a forum for students to network and be informed of activities and developments within the School of Pharmacy and Loma Linda University. Exposes students to leaders within the profession, reputable practitioners from various settings, top researchers, and other renowned individuals who will discuss important issues, career opportunities, latest research results, and the practice of pharmacy. Offered each quarter throughout the four-year program.

Prerequisite: P2; AQ standing.

**RXRX 604 Professional Development (0)**

Emphasizes the vital role of pharmacy's professional organizations by providing a vehicle within the School of Pharmacy's formal curriculum for student participation. Develops students' leadership abilities and cultivates their input on issues affecting the profession. Offered each quarter throughout the four-year program.

Prerequisite: P2 standing.

**RXRX 701 School of Pharmacy Forum (0)**

Required weekly meetings provide opportunity for presentations and discussions on current topics affecting pharmacy, health care, and students' career paths. Serves as a forum for students to network and be informed of activities and developments within the School of Pharmacy and Loma Linda University. Exposes students to leaders within the profession, reputable practitioners from various settings, top researchers, and other renowned individuals who will discuss important issues, career opportunities, latest research results, and the practice of pharmacy. Repeated through the third professional year. Offered each quarter throughout the four-year program.

**RXXR 704 Professional Development (0)**

Emphasizes the vital role of pharmacy's professional organizations by providing a vehicle within the School of Pharmacy's formal curriculum for student participation. Augments the development of students' leadership abilities and cultivates their input on issues affecting the profession. Permits project leaders and committee chairs a set time to meet and to provide an opportunity for all classes to network with each other. Repeated through the third professional year.

**RXXR 711 Formulary Management, Part I (1)**

The first of a two-quarter elective course that introduces students to concepts in formulary management. A lecture series that includes the following topics: pharmacoeconomics, drug information, clinical biostatistics, and therapeutics.

**RXXR 712 Formulary Management, Part II (2)**

Second quarter of a two-quarter elective course that introduces students to applications in formulary management. Independent study prepares student to complete four projects and two presentations. Assessment based on specific guidelines and evaluation tools determined by faculty.

**RXXR 798 Independent Study with Faculty (1-4)**

Individual student research or project directly mentored by a faculty member. Must include a half-page description of the research or project and associated budget (if any), and must specify the means of assessment of the student's achievement of the research or project requirements. Requires approval of the respective department chair and the student's faculty advisor. May be repeated to a total of 4 units toward the 9-unit elective requirement.

Prerequisite: P2 standing and approval of the project by the respective department chair and the student's faculty advisor.

**RXXR 890 Introduction to Advanced Pharmacy Practice Experiences (3)**

Prepares fourth-year pharmacy students for the advanced pharmacy practice experiences that comprise the fourth year of the curriculum. Includes instruction

relevant to clinical competence, site procedures, and professionalism. Assesses students on their knowledge base and critical-thinking abilities.

Prerequisite: P4 year students only.

**RXXR 899 Reconnections (3)**

Provides fourth-year pharmacy students with a formal board-review experience, as well as other didactic content that will assist them in their transition into the professional workforce. Gives students the opportunity to provide formal feedback to the program regarding their experience with the curriculum and other components that comprise the Doctor of Pharmacy Program.

Prerequisite: P4 year students only.

**PHARMACY—SOCIAL AND ADMINISTRATIVE SCIENCES****RXSA 545 Public Health and Lifestyles (3)**

Introduces the first-year pharmacy student to fundamental principles of public health and public health practice, as well as to how pharmacy practice interfaces with public health delivery in a variety of settings. Student identifies and evaluates public health education and health promotion programs, as well as identifies where the pharmacist plays a significant role in ensuring the conditions under which all peoples can be healthy. Introduces the student to the fundamentals of public health principles and practice, while examining how the pharmacist is an integral player to public health-systems delivery and practice.

**RXSA 547 Pharmacy Law (3)**

Reviews basic principles of pharmacy law as they relate to the practice under federal, state, and local regulations. Reviews special problems involving the control of narcotics, poisons, and other controlled substances. Discusses laws relative to business activities and professional ethics as related to the law.

**RXSA 640 Epidemiology and Biostatistics (3)**

Introduces epidemiology, basic statistical concepts, analytical methods, and medical literature-evaluation

techniques. Exposes students to biostatistical concepts through clinical application of statistics, using SPSS7 or other currently available statistical packages.

Prerequisite: Successful completion of all P1-level courses; P2; Autumn Quarter standing.

### RXSA 646 Principles of Management (3)

Introduces pharmacy students to the five core managerial sciences, i.e., human resource management, operations management, marketing, accounting, and finance. Particularly emphasizes human resource management and operations management skills. Lectures incorporate real-life management cases for discussion, followed by lecture on the principles of management topics.

### RXSA 743 Health Systems, Reimbursement, and Pharmacoeconomics (3)

Presents fundamental concepts of health outcomes research and pharmacoeconomic analysis, and provides a basic framework to optimize health care resource allocation. Discusses principles of measuring and analyzing costs and outcomes and techniques used to evaluate them across drug treatments. Includes various interactive group assignments to illustrate the methodologies discussed in lecture. Reviews current practice guidelines for pharmacoeconomic evaluation and describes "real world" contexts in which pharmacoeconomic research is conducted. Reviews the structure of the American health system and the role that pharmacists play in it. Presents and evaluates basic concepts of drug reimbursement and clinical pharmacy reimbursement for different pharmacy practice settings.

### RXSA 748 Advanced Topics in Pharmacy Law (3)

An elective course that examines specific pharmacy law topics in depth, using legal case studies and probing class discussions. Explores pharmacists' liability issues, the drug-approval process, pharmacists' moral/ethical obligations, antitrust, drug importation, and scope of practice.

### RXSA 750 Wall Street Journal (1)

Students read selected Wall Street Journal health-related articles and discuss the events that have resulted

in news coverage each week in the areas of pharmaceutical/biotechnology, providers/insurance, research, policy, and medical products.

### RXSA 751 Social-Behavioral Aspects of Pharmacy Practice (3)

Focuses on models and theories of behavior change, with particular emphasis on primary models of behavior change relative to public health, health education, preventive health, health promotion, and pharmacological practice. Combining pharmacological and public health practice, student gains a broad understanding of the various health-behavior models and theories that can be applied to assessing a patient's level of behavior change and meeting his/her needs. Students use knowledge to meet the individual needs of the patient.

### RXSA 757 Clinical Research and Methodology (CRM) (2)

Builds on the principles of biostatistics and drug information to develop the skills necessary for a practitioner to design and develop a clinical research study worthy of scholarly publication and presentation. Highly recommended for students who wish to pursue a career in managed care, pharmacy practice in an academic setting, or as a clinical coordinator in hospital settings. Offered Spring Quarter of PY3.

Prerequisite: Completion of RXDI 664 and RXSA 640 with a grade of B- or better.

## PHARMACY PRACTICE—THERAPEUTICS

### RXTH 570 IPDM I: Principles of Pharmacology (2)

Part of a twelve-course sequence. Focuses on pathophysiology and management of disease states, pharmacology of the drug classes indicated, and the clinical pharmacokinetics that govern drug administration. Develops an understanding of the basic pharmacologic concepts of therapeutics, receptor theory, drug metabolism, and drug interactions. Covers tools to effectively assess therapy, including interpretation of laboratory values and construction of SOAP notes.

**RXTH 670 IPDM I: Principles of Pharmacology (2)**

Part of a twelve-course sequence taught over two years. Focuses on pathophysiology and management of disease states, pharmacology of the drug classes indicated, and the clinical pharmacokinetics that govern drug administration. Develops an understanding of the basic pharmacologic concepts of therapeutics, receptor theory, drug metabolism, and drug interactions. Covers tools to effectively assess therapy, including interpretation of laboratory values and construction of SOAP notes.

Prerequisite: Successful completion of all P1-level courses and P2; Autumn Quarter standing.

**RXTH 671 IPDM II: Fluids and Electrolytes (2.5)**

Part of a twelve-course sequence. Covers the pathophysiology, management, and drug therapy of conditions related to electrolyte and fluid disturbances; as well as dietary requirements and sources of electrolytes. Addresses pathophysiology, management, and drug therapy of anemias. Enables students to manage electrolyte and fluid disorders and anemias, establish and employ rational treatment, and provide parameters to monitor progress of the regimens.

Prerequisite: Successful completion of all P1-level courses and P2; Autumn Quarter standing.

**RXTH 674 IPDM VI: Renal and Respiratory Diseases (3.5)**

Part of a twelve-course sequence. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical trial evidence as related to renal and respiratory diseases. Enables students to integrate their knowledge of these disciplines to manage renal and respiratory diseases by establishing and employing rational treatment and providing parameters to monitor progress of the regimens.

**RXTH 683 IPDM IV: Endocrine (3.5)**

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students

integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

Prerequisite: completion of all P1 and Autumn Quarter P2 courses.

**RXTH 684 IPDM III: Cardiovascular I (3.5)**

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of cardiovascular agents; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with common cardiovascular disorders. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes anatomy, physiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to cardiology. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

Prerequisite: P2, Spring Quarter standing.

**RXTH 685 IPDM V: Cardiovascular II (3.5)**

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

### RXTH 755 Advanced Topics in Cardiology: An Evidence-Based Approach (4)

Focuses on current and/or controversial topics in the area of cardiology and cardiovascular pharmacotherapy. More detailed focus on the evidence behind some cardiovascular guidelines.

### RXTH 756 Internal Medicine Clinical Research (2)

Exposure to and participation in clinical research in internal medicine clinical pharmacy practice.

### RXTH 757 Advanced Cardiovascular Life Support (3)

Focuses on the development of skills necessary for the management of patients with acute cardiovascular emergencies.

### RXTH 770 IPDM VII: Infectious Diseases I (3.5)

Part of an eleven-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of anti-infectives; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with neurological diseases. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes anatomy, physiology, pharmacology, pharmacokinetics, pharmacotherapy and clinical trial evidence as they relate to anti-infectives. Enables students to integrate their knowledge of the disciplines in the context of formulating individualized pharmacotherapeutic plans.

Prerequisite: P3, Autumn Quarter standing.

### RXTH 771 IPDM X: Neurology (3.5)

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to

integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

### RXTH 772 IPDM IX: Infectious Diseases II (4.5)

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

### RXTH 773 IPDM VIII: Psychiatry (4.5)

Part of an eleven-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of psychiatric disease and addictions; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with these conditions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish the course outcomes. Presents pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy and clinical trial evidence as they relate to the drugs used for these miscellaneous conditions. Enables students to integrate their knowledge of the disciplines in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

Prerequisite: P3, Autumn Quarter standing.

### RXTH 774 IPDM XII: Miscellaneous Conditions and GI Disorders (3.5)

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics and pharmacodynamics of agents used in the treatment of gastrointestinal disorders and various other conditions—including but not limited to arthritis, gout, glaucoma, dermal conditions, incontinence, SLE, MS,

and BPH; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with these conditions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish the course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to the drugs used for the conditions indicated. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

Prerequisite: P3 Spring Quarter standing.

#### RXTH 775 IPDM XI: Oncology/Transplant (2.5)

Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of oncology agents and agents used in the treatment of transplant recipients; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with these conditions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to the drugs used to treat the conditions indicated. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

Prerequisite: P3 Spring Quarter standing.

#### RXTH 784 Special Topics in Pharmacy Practice (1-4)

Lecture and discussion on a current topic in pharmacy practice. May be repeated for a maximum of 6 units.

#### RXTH 785 Advanced Topics in Diabetes (3)

Focuses on strategies and applications for implementing a diabetes education and management service in an ambulatory care setting. Covers advanced diabetes topics.

#### RXTH 788 Advanced Clinical Pharmacy (3)

Focuses on advanced clinical pharmacy topics and application of clinical knowledge and skills to address medical cases and questions.

#### RXTH 789 Advances in Community Pharmacy Practice (3)

Introduces students to a variety of topics encountered in community pharmacy practice—including handling of devices, management issues, and third-party processing. Develops an advanced level of knowledge and skills.

## SCHOOL OF DENTISTRY—CONJOINT

#### SDCJ 744 Clinical Training in Advanced Restorative Dentistry (8)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist international dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 758A Clinical Experience in Biomaterials Research (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 758B Clinical Experience in Biomaterials Research (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 758C Clinical Experience in Biomaterials Research (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 759A Clinical Experience (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 759B Clinical Experience (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who

reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 759C Clinical Experience (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 761A Clinical Experience in Oral Pathology and Radiology (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

### SDCJ 761B Clinical Experience in Oral Pathology and Radiology (0)

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School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 761C Clinical Experience in Oral Pathology and Radiology (0)

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#### SDCJ 762A Clinical Experience in Dental Anesthesiology (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 762B Clinical Experience in Dental Anesthesiology (0)

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#### SDCJ 762C Clinical Experience in Dental Anesthesiology (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 763A Clinical Experience in Endodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

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#### SDCJ 763C Clinical Experience in Endodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission

support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 764A Clinical Experience in Implant Dentistry (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 764B Clinical Experience in Implant Dentistry (0)

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#### SDCJ 764C Clinical Experience in Implant Dentistry (0)

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program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 765A Clinical Experience in Pediatric Dentistry (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 765B Clinical Experience in Pediatric Dentistry (0)

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#### SDCJ 765C Clinical Experience in Pediatric Dentistry (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University

School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 766A Clinical Experience in Periodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

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#### SDCJ 766C Clinical Experience in Periodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 767A Clinical Experience in Prosthodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

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#### SDCJ 767C Clinical Experience in Prosthodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 768A Clinical Experience in Oral and Maxillofacial Surgery (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission

support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 768B Clinical Experience in Oral and Maxillofacial Surgery (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 768C Clinical Experience in Oral and Maxillofacial Surgery (10.8)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 769A Clinical Experience in Orthodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the

program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 769B Clinical Experience in Orthodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 769C Clinical Experience in Orthodontics (0)

A six-month, full-time certificate program that is predominately clinical in nature. Provides mission support among Seventh-day Adventist foreign dentists, and provides training for other foreign dentists who reside outside the United States and will return to their own dental clinics/countries after completion of the program. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Program generates no academic credit and cannot apply toward any other program in the School of Dentistry.

#### SDCJ 799 Directed Study (160-480)

### SCHOOL OF DENTISTRY—CLINICAL

#### SDCL 696 Directed Study (1-4)

A directed study (DS) course that can be used in any graduate program either to further study of a particular subject or subjects, or to remediate academic deficiencies without having to repeat an entire course. Program director or his/her designee develops the specific course content and assignments.

**SDCL 711 Clinic Orientation I (1)**

Introduces direct patient care in the main clinic. Discusses clinic policies and infection control. Reviews use of the clinic computing system. Discusses basic patient-management techniques, treatment planning, and practice management issues.

**SDCL 712 Clinic Orientation II (2)**

Builds on SDCL 712 Clinic Orientation I and continues instruction related to the clinic computing system. Includes intraoral photography, financial planning for patients, quality assurance and improvement, long-term assessment of care outcomes, and professional relationships.

**SDCL 713 Clinic Orientation III (1)**

The third course in a sequence of clinic orientation courses, which completes the bridge for students transitioning from preclinical to clinical experience.

**SDCL 801 Clinical Patient Care (2)**

Focuses on the delivery of patient care consistent with the highest standards, which bridges all clinical disciplines and provides a structured setting in which faculty interact to formulate a diagnosis, develop treatment plans, deliver treatment, and maintain patient health. Integrates social, ethical, and humanitarian components through instruction and group seminars, and during the delivery of patient care. Emphasizes the comprehensive patient care system, which focuses on patient care, education, environment, and assessment.

**SDCL 802 Clinical Patient Care (2)**

Continues SDCL 801.

**SDCL 803 Clinical Patient Care (2)**

Continues SDCL 801, 802.

**SDCL 804 Clinical Patient Care (2)**

Continues SDCL 801, 802, 803.

**SDCL 805 Clinical Patient Care (2)**

Continues SDCL 801, 802, 803, 804.

**SDCL 806 Clinical Patient Care (2)**

Continues SDCL 801, 802, 803, 804, 805.

**SDCL 807 Clinical Patient Care (2)**

Continues SDCL 805, 806.

**SDCL 808 Clinical Patient Care (2)**

Continues SDCL 805, 806, 807.

**SDCL 896 Clinical Directed Study (1-4)**

A directed study (DS) course that can be used in any graduate program either for advanced clinical activity in selected areas, or to remediate clinical deficiencies without having to repeat an entire course. Program director or his/her designee determines the nature and scope of the clinical activity.

**SDCL 899 Clinic—Continuing Registration for Extended Professional (4-8)**

Continues registration that allows an extended professional to satisfy clinic requirements for degree completion.

**SOCIOLOGY****SOCI 585 Sociology of Communities (4)**

Examines classical and contemporary theories of community. Provides a theoretical foundation for applied social science professional programs that require an understanding of the community in contemporary society.

**SOCIAL WORK****SOWK 414 Interviewing and Counseling (4)**

Provides students with orientation to the procedures, methods, and problems associated with a clinical interview. Focuses on developing basic interviewing skills used in the collection of personal data, including the use of various verbal and nonverbal forms of expression, active listening, and appreciation of client diversity. Gives attention to the student's development of self-awareness and continuous integration of professional values and ethical conduct in practice.

**SOWK 477 Universal Psychiatric Care (1, 2)**

Provides an opportunity to participate in an international institute featuring world leaders in psychiatric care. Topics include: world diagnostic

guidelines, psychotropic medications and issues in treating ethnic populations, spirituality and psychiatry, transpersonal psychiatry in theory and practice, multidisciplinary teams in the practice of mental health services, and problems of mental health in immigrant populations. Students registering for 1 unit participate in ten hours of lecture, including a pre- and postsession. Those taking 2 units also develop a major paper on one of the institute topics.

#### SOWK 494 Conflict Resolution and Dispute Mediation (2)

Provides cross-disciplinary knowledge and skills needed in conflict resolution and dispute mediation. Course content meets the state of California requirements for mediators and other facilitators. Individuals completing the course are eligible to complete supervised mediation practice with the Riverside County Department of Community Action and receive a mediation certificate from the state of California.

#### SOWK 511 Human Behavior and Cross-cultural Environment I (3)

First of a three-part sequence that provides the basis for understanding human development and life transitions throughout the lifespan within an ecological perspective. Orients the student to the generalistic, social work approach to understanding human behavior in a cross-cultural context. Focuses on normal behavior from birth through adolescence.

Prerequisite: Program prerequisites in human growth and development, human biology concepts, and cross-cultural issues.

#### SOWK 512 Human Behavior and Cross-cultural Environment II (3)

Second course in a three-part sequence. Explores the dynamic of human behavior from young adulthood to senescence, as affected by and expressed in a cross-cultural context. Provides a foundation of knowledge on which to build social work-practice skills.

Prerequisite: Program prerequisites in human growth and development, human biology concepts, and cross-cultural issues.

#### SOWK 515 Social Policy I (3)

Orientation to the beliefs, values, and historical foundations of the social work profession. Emphasizes examination of societal, professional, and cross-cultural perspectives and contradictions as these have influenced the development of contemporary social policies and services.

#### SOWK 517 Foundation Practice I: Individuals (3)

Introduces student to the application of a generalist practice perspective with micro- systems. Student learns how to conduct a biopsychosocial-spiritual assessment, and is introduced to a full range of beginning intervention strategies for working with individuals. Emphasizes the special problems experienced by populations at risk, women, and minorities; the unique skills necessary for goal-setting and successful interventions; and the cultural values that influence the development and resolution of psychosocial problems.

Prerequisite: or Concurrent: Social work practicum.

#### SOWK 518 Foundation Practice II: Groups (3)

Second course in the practice sequence. Introduces the student to group work methods. Emphasizes differentiation among the types of individuals, situations, and presenting problems best served by group interviews.

Prerequisite: Program prerequisite in interviewing and counseling.

#### SOWK 519 Foundation Practice III: Organizations and Communities (3)

Third course in the practice sequence. Incorporates generic concepts of the generalists' approach in organizational and community settings. Provides knowledge and understanding concerning group formation and empowerment. Assists the student in understanding him-/herself as a member of, and an active participant in, community organizations and institutions.

#### SOWK 520 Foundation Practice IV: Families (3)

Fourth course in the practice sequence. Introduces family interventions. Examines views and issues regarding contemporary family structure and function,

and focuses on concepts and techniques used to promote change in family functioning. Course meets state requirement for content in family violence.

Prerequisite: Program prerequisite in interviewing and counseling.

#### SOWK 547 Research Methods I (3)

Reviews the quantitative and qualitative methodological techniques used in designing and analyzing social work research and practice. Emphasizes preparing students for practice evaluation.

#### SOWK 549 Research Methods II (3)

Provides students with a didactic laboratory exploration of computer-based statistical analysis. Includes review of statistical techniques such as correlation, chi-square, analysis of variance, and multiple regression. Emphasizes using and interpreting statistics most common to research designs employed in social work research and practice evaluation.

Prerequisite: Introduction to computing, and introductory statistics.

#### SOWK 578 Field Orientation (1)

Provides students with the policies and procedures for completing the program's practicum requirements. Begins the process of examining social work values and ethics as students are introduced to the NASW code of ethics and fundamental principles of professional behavior prior to beginning their field practicum.

Prerequisite: Program prerequisite in interviewing and counseling.

#### SOWK 595 Professional Development (2)

Tutorial course work aimed at ameliorating difficulties associated with meeting the professional performance competencies of the M.S.W. degree program (see M.S.W. Student Handbook). Students enrolled in the course as a result of a corrective action plan developed with the Department of Social Work's Academic Standards Committee.

#### SOWK 599 Directed Study (1-4)

Limited to matriculating master's degree students in social work who wish to pursue independent investigations in social work practice or policy under the direction of a department faculty member.

#### SOWK 613 Human Behavior in a Cross-cultural Environment III (4)

Third course in a three-part sequence. Provides a shift from the previous normative developmental perspective to an analysis of behavioral health challenges. Focuses on the review and application of the DSM-IV-TR and Mental Status Examination to enhance person-in-the-environment assessment. Scope of practice perspectives regarding multidisciplinary team treatment in the use of psychopharmacology. Enhances awareness of sociocultural needs and issues of populations at risk. Facilitates increased application and respect for social work values, ethics, and policies.

#### SOWK 615 Social Policy II (3)

Examines the structure and processes of social programs, and reviews methodologies for the analysis and development of social policies as applied to social welfare programs. Addresses the professional values and ethics of social change through political and social actions.

#### SOWK 648 Co-occurring Diagnosis: Substance Abuse with Mental Illness (2)

Builds on the practice experiences and foundation courses of the first year by increasing competency in the assessment, diagnosis, and treatment of individuals experiencing mental, emotional, and/or behavioral disturbances with co-occurring chemical dependency. Student learns to utilize behavioral health-treatment strategies and substance abuse-counseling techniques from within a biopsychosocial-spiritual paradigm.

#### SOWK 649 Social Work and Health Care (2)

Considers the physiological, psychological, and social components of various illnesses/conditions encountered in health care settings. Themes include: the effect of these components on social functioning or rehabilitative and habilitative processes; the common psychological reactions of people to medical treatment; the medical

team's respective roles and value orientation, and the impact of these on the patient and his/her family; and issues of loss and death. Gives special attention to interventions specific to health care settings versus those of traditional agencies, and to methods appropriate to interdisciplinary practice.

#### SOWK 650 Children and Adolescents in Trauma (2)

Provides students with a comprehensive understanding of assessing, intervening with, and treating children and adolescents experiencing trauma. Examines traumatic events associated with sexual abuse, life-threatening conditions, and severe familial disruption. Examines the processes of assessing and diagnosing the source and severity of commonly associated behaviors, conduct, and mood disorders examined. Explores applicable intervention and treatment strategies.

#### SOWK 651 Health Care Interventions with High-Risk Families and Communities (2)

Special health care needs of high-risk populations (including the poor, ethnic and racial minorities, recent immigrants, and children in high-risk environments). Primary causes of poor health among these groups, and development of realistic goals and strategies for responding to health care systems. Reviews social work's role in the development of interdisciplinary community health care systems services.

#### SOWK 653 Interventions with Special-Needs Children (2)

Focuses on practice with children and families in relationship to environmental stability. Examines how the physical and mental health of children are directly associated with family and environmental permanency. Emphasizes development of parental and social support capacities, as well as the requisite professional knowledge and skills to help children deal with identity issues and concerns of joining a new family. Addresses the impacts of race, ethnicity, gender, economic deprivation, physical illness, and disability.

#### SOWK 654A Therapeutic Interventions with Older Adults I (3)

Provides an intensive examination of clinical issues related to social work practice with older adults and their families. Students gain increased understanding of the developmental tasks of later life; and the needs, strengths, and diversity of empowered and active older adults. Prepares students to examine and implement evidenced-based interventions at the clinical level with an understanding of how organizational and community-level factors can influence interventions and outcomes. Gives attention to issues related to culturally-competent practice and the interplay of race, ethnicity, and culture.

#### SOWK 654B Therapeutic Interventions with Older Adults II (3)

Provides students with knowledge and skills related to working with frail and vulnerable older adults. Reviews mental disorders as they are uniquely characterized in late adulthood, emphasizing assessment. Addresses loss and institutionalization, adjustment problems related to illness, cultural variations related to illness, advanced directives, alcohol and substance abuse, sleep disorders, and barriers to quality care.

#### SOWK 656 Religion and Spirituality in Direct Practice (2)

Acquaints students with predominant theories regarding religion and spirituality from the "person-in-the-situation" perspective. Includes psychodynamic, philosophical, and sociocultural theoretical orientations. Examines the implications of these theories in terms of their impact on professional practice.

#### SOWK 658 Children's Psychotherapy (2)

Considers treatment techniques appropriate for young children with a wide range of diagnoses and behavior problems. Emphasizes the integration of theory and practice of psychotherapy with the ecological perspective of social work practice. Discusses diagnosis, phases of treatment, and special communication issues. Research, ethical, and value issues addressed.

**SOWK 659 Interventions with Persons with Severe Mental Illness (2)**

Provides students with an understanding of theories and techniques of direct interventions useful in helping those with major mental disorders to cope with their illnesses and aspects of their life situations. Topics include dangerous behavior, acute psychotic episodes, definitions of long-term chronic disability, enhancing social skills and social support systems, case management, and the interaction of medication and social functioning.

**SOWK 660 Advanced Theory and Practice with Ethnically Diverse Clients (3)**

Explores theories and concepts of ethnicity, with particular focus on their usefulness for understanding ethnic diversity in psychosocial functioning. Examines norms, values, and adaptive coping styles; generational and gender issues in the formation of ethnic identity; the impact of social, political, and economic deprivation on development; attitudes toward health and mental health; degrees of acculturation; styles in the use of help; and other patterns. Students explore their own ethnicity-related styles and identities, as well as the potential "fit" between worker and client values and beliefs. Students learn how to apply ethnicity concepts in case situations, including the exploration of ethnic factors in the assessment of functioning and in the development of the therapeutic relationship. Gives particular attention to practice with people of color and recent immigrants. Critically examines prevailing models of social work practice in terms of their sensitivity to issues of ethnic diversity.

**SOWK 661 Time-Limited Services and Interventions (3)**

Examines the rationales and assumptions of brief treatment, presenting the techniques and strategies of time-limited services, as compared with extended models of treatment. Examines the nature and characteristics of crisis versus traumatic events for their long-term effects on psychosocial functioning. Examines continuum as it guides assessment, treatment modalities and settings, and interdisciplinary interactions.

Prerequisite: Pass qualifying examination; or permission of Academic Standards Committee.

**SOWK 663 Advanced Social Work Practice with Individuals (3)**

Focuses on enhancing student's knowledge and skills in advanced clinical social work with individuals. Integrates assessing and diagnosing for the purpose of planning short- and long-term treatment goals. Emphasizing evidence-based approaches, student learns advanced biopsychosocial-spiritual treatment interventions. Gives attention to imparting a strengths perspective of advanced practice that addresses the challenge of integrating the recovery process within practice environments that are oriented to the application of psychodynamic formulation. Addresses self-regulation to maintain an ethical scope of practice in treatment and consideration of the client's cultural values.

Prerequisite: Pass qualifying examination; or permission of Academic Standards Committee.

**SOWK 665 Advanced Social Work Practice with Groups (3)**

Deepens knowledge of group processes and treatment. Through lecture, discussion, use of case material, and experiential learning in the classroom, group is examined for its therapeutic impact on individual members. Emphasizes assessment and interventional skills in relation to the development of the group and to the ego functioning of individuals in therapeutic groups.

Prerequisite: Pass qualifying examination; or permission of Academic Standards Committee.

**SOWK 667 Advanced Integrative Practice (3)**

Provides students in the clinical concentration an opportunity to deepen their knowledge and integration of advanced theories and treatment modalities.

Emphasizes developing students' skill in selecting practice methods appropriate for working with client populations presenting complex, multidimensional considerations for diagnosis and treatment. Special attention given to furthering students' appreciation for practice evaluation and interdisciplinary interactions as guided by an "autonomy in collegiality" perspective. Underscores the responsibilities of clinical social workers to anticipate and respond to social, political, and other environmental factors changing the nature and availability of services.

Prerequisite: Pass qualifying examination; or permission of the Academic Standards Committee.

**SOWK 671 Foundation Practice V: Social Work Administration (3)**

Provides macropractice knowledge, skills, and perspectives of administrative practices with which to develop, support, and maintain effective service delivery. Topics include role identification and development, situational leadership, strategic planning, levels and types of decision making, management of organizational behavior, use of information systems, budgeting, documentation and reporting, resource development and utilization, and community networking.

**SOWK 672 Theories of Organizations and Systems (3)**

Explores the complexities of large organizations and bureaucratic systems. Examines formal and informal structures, communication patterns, and philosophical approaches as these affect the effectiveness and efficiency of services delivery, worker motivation, and resource procurement and allocation. Accomplishes the objectives of the course through the application of diverse organizational and diffusion theories and perspectives as a means to increase students' understanding of their practicum experiences in the policy, planning, and administration concentration.

Prerequisite: Pass qualifying review; or permission of Academic Standards Committee.

**SOWK 673 Program Planning and Evaluation (3)**

Introduces students to the range of issues, knowledge, and skills required in designing, planning, implementing, monitoring, and evaluating programs. Students build on knowledge obtained in other concentration courses. Integrates the course focus through the development of a comprehensive program proposal for the students' practicum agency or other identified community group.

Prerequisite: Pass qualifying examination; or permission of the Academic Standards Committee.

**SOWK 675 Supervision (3)**

Examines the supervisory process in relation to clinical, administrative, educational, and supportive functions. Emphasizes supervisory knowledge, skills, and techniques necessary for the development of staff capable of functioning creatively and independently.

**SOWK 676A Human Resources Planning and Development (3)**

Examines the complexities of human-resources management in large organizations and/or with diverse employee populations. Strengthens students' knowledge and professional decision making relative to the implementation of federal, state, and local policies (i.e., affirmative action, nondiscrimination, sexual harassment, etc.). Permission of instructor required for students not in the policy/administration concentration.

Prerequisite: Pass qualifying examination; or permission of the Academic Standards Committee.

**SOWK 676B Human Resources Planning and Development Seminar (3)**

Selective course, taken to supplement SOWK 676A, deepens students' exposure to leading-edge discussions on the legal and ethical aspects of human-resources management and contemporary issues affecting morale and productivity in today's work environments (e.g., familial dysfunction of employees, single-parent families, care-provider roles of employees, and co-worker violence). Learning supported through guest speakers and panel discussions. Permission of instructor required for registration by students not in the policy, planning, and administration concentration.

### SOWK 677 Advanced Integrative Seminar in Psychotherapy (2)

Provides an opportunity to integrate advanced courses with individuals (SOWK 663) and groups (SOWK 665) by furthering the application of in-depth psychodynamic analysis of mentally ill individuals. Identifies specific themes of intrapsychic dilemmas and treatment interventions. Students enhance their analytic writing and verbal skills via presentations based on the bio-psycho-social-spiritual perspective of psychopathologies to be encountered as a clinical social worker. Expands the body of knowledge of social work students who are interested in cultivating expertise in clinical social work via advanced training institutes and/or a doctoral program.

Prerequisite: SOWK 663, SOWK 665.

### SOWK 678 Integrative Generalist Practice and Seminar (2)

Required of students with advanced standing. Students complete 200 hours of practicum and 20 hours of practicum seminar. Designed to provide a bridge quarter to integrate the B.S.W. degree experience with the second year of the M.S.W. degree program. Emphasizes reviewing the knowledge, values, and skills of generalist social work practice; and defines the additional competencies required for advanced practice. Assists instructor and students in identifying and addressing individualized needs for further development, including application of professional ethics and judgment, use of self as a therapeutic tool, and self-awareness. At the culmination of this course, students also formulate conceptual and experiential learning objectives for their second year of study.

### SOWK 679 Universal Psychiatric Care (1, 2)

Provides an opportunity to participate in an international institute featuring world leaders in psychiatric care. Topics include: world diagnostic guidelines, psychotropic medications and issues in treating ethnic populations, spirituality and psychiatry, transpersonal psychiatry in theory and practice, multidisciplinary teams in the practice of mental health services, and problems of mental health in immigrant populations. Students registering for 1 unit participate

in ten hours of lecture including a pre- and postsession. Those taking 2 units also develop a major paper on one of the institute topics.

### SOWK 680 Children and Families Policies and Services (2)

Provides students with an understanding of the major social policy issues affecting the current organization and delivery of human services for children and families. Analyzes current debates about the tensions between social policy and the doctrine of family privacy, with attention to the legal basis of state interventions and judicial decisions affecting family relationships, including parent to parent and child to parent.

### SOWK 681 Health and Mental Health Policy and Services (2)

Provides a conceptual understanding of the development and organization of the health and mental health systems within institutional and community-based settings as they stem from national and local policy perspectives. Considers major issues dealing with the economics of health, health planning, and health legislation. Reviews health and mental health programs based on selected cross-national comparisons.

### SOWK 682 Legal and Ethical Aspects in Health and Mental Health Services (3)

Focuses on those instances when legal mandates or concerns interact with and affect the practice of social work. Overviews the sources of legal authority, the judicial system, and the legal standards applicable to particular proceedings. Examines the legal implications of the social worker/client relationship. Emphasizes consent to treatment. Examines the statutes and judicial decisions that govern the confidentiality implicit in a social worker/client relationship. Examines the statutes and judicial decisions that permit or place an obligation on social workers to breach client confidentiality. Explores course content in the context of common and high-risk situations.

### SOWK 683 Advanced Policy Analysis (3)

Deepens students' understanding of both the conceptual and analytical requirements of policy

analysis through the integration of behavioral, political, economic, and sociometric frameworks for understanding human conditions. Students gain experience in structuring and defining policy problems, establishing criteria for policy choices, mapping alternative strategies, and applying appropriate analytical and research methods to policy questions. Use of cost-benefit analysis, cost-effectiveness analysis, and decision analysis as means toward developing formal augmentation toward sustained change.

Prerequisite: Pass qualifying examination; or permission of Academic Standards Committee.

#### SOWK 684 Advanced Policy Projects (2, 3)

Enhances understanding of the interconnections between politics, policy making, and policy analysis through first-hand participation in a political action campaign. Choices for projects may focus on local initiatives or those coordinated annually through the California chapter of NASW.

#### SOWK 685 Understanding Global Cultures (2)

Explores the social, cultural, political, and economic factors impacting public policies and the delivery of services in Third World, developing, industrial, and postindustrial societies. Explores models for conceptualizing the differences and commonalities of infrastructure development in these various settings to enhance students' appreciation for creating and implementing policies and programs sensitive to the unique characteristics of the host environment.

#### SOWK 695A Advanced Research Methods (2)

The first course in a three-quarter sequence that supports the student who chooses to advance his/her knowledge through examination and application of a broad spectrum of quantitative and qualitative research methods used in professional practice settings. Didactic and laboratory experiences draw on the student's advanced practice. Develops student's capacity to differentiate and apply the most appropriate and widely used research designs and methods of practice evaluation and renewal. Gives continuous attention to current federal and state requirements for assessing

intervention effectiveness. Emphasizes self-evaluation and evaluation of practice effectiveness with individuals and families.

#### SOWK 695B Advanced Research Methods (2)

The second course in a three-quarter sequence that supports the student who chooses to advance his/her knowledge through examination and application of a broad spectrum of quantitative and qualitative research methods used in professional practice settings. Didactic and laboratory experiences draw on the student's advanced practice. Develops the student's capacity to differentiate and apply the most appropriate and widely used research designs and methods of practice evaluation and renewal. Gives continuous attention to current federal and state requirements for assessing intervention effectiveness. Emphasizes practice evaluation groups as well as the design and implementation of quality assurance studies for monitoring work with specific populations.

#### SOWK 695C Advanced Research Methods (2)

The third course in a three-quarter sequence that supports the student who chooses to advance his/her knowledge through examination and application of a broad spectrum of quantitative and qualitative research methods used in professional practice settings. Didactic and laboratory experiences draw on the student's advanced practice. Develops the student's capacity to differentiate and apply the most appropriate and widely used research designs and methods of practice evaluation and renewal. Gives continuous attention to current federal and state requirements for assessing intervention effectiveness. Emphasizes evaluation at the program, organizational, and community levels.

#### SOWK 697 Applied Research (2)

Supports students choosing to complete the thesis option. Provides research matriculation in the collection and analysis of data for the thesis. Students required to register for two quarters, or a total of 4 units.

Prerequisite: SOWK 547, SOWK 549.

#### SOWK 698 Thesis (2)

The culminating work of the student's independent research, under the direction of the research advisor.

Registration during the quarter in which student defends research and submits the final document to the department and School of Science and Technology.

**SOWK 701 Professional Colloquium: Spousal or Partner Abuse (1)**

Provides subject content in spousal or partner abuse, as required by the state of California for licensure as a licensed clinical social worker (LCSW).

**SOWK 702 Professional Colloquium: HIV/AIDS (1)**

Provides subject content in HIV/AIDS, as required by the state of California for licensure as a licensed clinical social worker (LCSW).

**SOWK 703 Professional Colloquium: Substance Abuse (1)**

Provides subject content in substance abuse, as required by the state of California for licensure as a licensed clinical social worker (LCSW).

**SOWK 757A Professional Foundation Practicum and Seminar (3)**

Provides student with experiential learning opportunities in foundation social work practice through practicums arranged by the program's director of field education. Student completes 160 practicum hours concurrent with 20 hours of practicum seminar for each of three consecutive quarters. A block practicum option is available to qualified students.

Prerequisite or concurrent: SOWK 578.

**SOWK 757B Professional Foundation Practicum and Seminar (3)**

Provides student with experiential learning opportunities in foundation social work practice through practicums arranged by the program's director of field education. Student completes 160 practicum hours concurrent with 20 hours of practicum seminar for each of three consecutive quarters. A block practicum option is available to qualified students.

Prerequisite: SOWK 578.

**SOWK 757C Professional Foundation Practicum and Seminar (3)**

Provides student with experiential learning opportunities in foundation social work practice through practicums arranged by the program's director of field education. Student completes 160 practicum hours concurrent with 20 hours of practicum seminar for each of three consecutive quarters. A block practicum option is available to qualified students.

Prerequisite: SOWK 578.

**SOWK 787A Advanced Professional Practicum and Seminar (4)**

Provides student with advanced social work experience in his/her selected concentration. Advanced practicums arranged by the program's director of field education. Student required to complete 200 practicum hours concurrent with 20 hours of practicum seminar for each of three consecutive quarters.

Prerequisite: SOWK 578, SOWK 757A, SOWK 757B, SOWK 757C; or SOWK 678.

**SOWK 787B Advanced Professional Practicum and Seminar (4)**

Provides student with advanced social work experience in his/her selected concentration. Advanced practicums arranged by the program's director of field education. Student required to complete 200 practicum hours concurrent with 20 hours of practicum seminar for each of three consecutive quarters.

Prerequisite: SOWK 578, SOWK 757A, SOWK 757B, SOWK 757C; or SOWK 678.

**SOWK 787C Advanced Professional Practicum and Seminar (4)**

Provides student with advanced social work experience in his/her selected concentration. Advanced practicums arranged by the program's director of field education. Student required to complete 200 practicum hours concurrent with 20 hours of practicum seminar for each of three consecutive quarters.

Prerequisite: SOWK 578, SOWK 757A, SOWK 757B, SOWK 757C; or SOWK 678.

## SOCIAL POLICY

### SPOL 554 Environment, Resources, and Development Policy (3)

Provides an advanced interdisciplinary analysis of the sustainability framework in both urban and rural contexts of the developing and developed world. Policy issues of focus selected from: geoinformation science for development, biotechnology and genetic resources, poverty reduction and trade competitiveness, human health and disease, global environmental governance, natural hazards and disaster mitigation, and natural resource management issues such as agroforestry, drylands goods and services, mountain development, integrated water-resource management, and sustainable tourism. Seminar discussions enhanced with case studies, computer-simulation games, laboratory exercises, and student presentations.

### SPOL 588 Special Topics in Social Policy and Social Research (1-5)

Reviews current knowledge and/or research methodologies in specified areas of social policy and social research.

### SPOL 599 Independent Study (1-8)

Limited to Ph.D. degree students who wish to pursue independent investigations in social policy and/or social research under the direction of a department faculty member.

### SPOL 613 Social Science Concepts I (4)

Part one of a two-part sequence. Reviews key theories, writers, conceptual frameworks, and seminal ideas from social science at-large (economics, sociology, psychology, geography, political science, social work) that have laid the foundation for contemporary social policy analysis and social research—particularly applied social science. Students expected to read a wide selection of material under faculty guidance; and extract concepts, tools, methods, and applications useful to social policy analysis or practice. Multiple faculty and guests lead in the discussion and reading, as well as critique writing.

### SPOL 614 Social Science Concepts II (4)

Part two of a two-part sequence. Reviews key theories, writers, conceptual frameworks, and seminal ideas from social science at-large (economics, sociology, psychology, geography, political science, social work) that have laid the foundation for contemporary social policy analysis and social research—particularly applied social science. Students expected to read a wide selection of material under faculty guidance; and to extract concepts, tools, methods, and applications useful to social policy analysis or practice. Multiple faculty and guests lead in the discussion and reading, as well as in critique writing.

Prerequisite: SPOL 613.

### SPOL 615 Economic Theory and Social Policy (4)

Presents the basic ideas and concepts of macroeconomic theory and applies them to understanding current and recent developments in social policy. Students learn to evaluate macroeconomic conditions—such as unemployment, inflation, growth wages, and income distribution—and gain understanding of how such conditions impact the provision of health and human services.

### SPOL 624 Nature/Society Thought and Social Policy (4)

Explores fundamental integrative theories and ideas that explore nature/society interactions and change—including key contributions from systems science, economics, sociology, demography, political science; as well as political, social, and cultural ecology. Focuses on learning how to assess the complex interactions between natural and built environments, technology, institutions, social groups and individuals, and value/ethical systems that shape the context for social policy analysis and decision making in a rapidly changing world. Emphasizes integrative habits of thought and practice that promote sustainable development both at the community and national/international levels from a Christian perspective. Considers a wide range of issues, such as population growth, food production, natural resources management, globalization and technology, energy policy, and socioeconomic restructuring and sustainable development planning.

**SPOL 654 Research Methods I (4)**

Advanced quantitative research methods.

Emphasizes experimental and quasi-experimental designs, and examines specific methodologies used in conducting research in the area of social policy and social research. Topics include measurement issues, research design, sampling, and statistical interpretation. Addresses survey research, time-series designs, and more advanced techniques.

**SPOL 655 Research Methods II (4)**

Advanced course in qualitative and mixed research methods. Emphasizes selected qualitative and mixed research methodologies specific to social policy and clinical and health services research. Topics covered include theoretical bases for conducting qualitative research; research design; data gathering, including interviewing, observation, archival and historical research, and data analysis and writing. Introduces various methods for integrating qualitative and quantitative methodologies.

**SPOL 656 Organizational Theory and Policy (4)**

Explores the complexities of large organizations; how organizations are born, evolve, and survive. Examines bureaucratic systems, formal and informal structures, communication patterns, and philosophical approaches that influence effectiveness and efficiency of services delivery. Implications of these on the development and implementation of social policies explored.

**SPOL 658 Methods of Policy Analysis and Research (4)**

Examines approaches to policy analysis and assesses the strengths and limitations of various methods. Explores a range of theoretical frameworks and analytical methods used for understanding and analyzing contemporary policy challenges. Addresses ethical issues and the role of values in shaping analysis. Incorporates the empirical methods used to support policy analysis and structure policy research.

**SPOL 664 Applied Research for Social Policy (2)**

Provides students with a series of formal exercises simulating primary applied social research strategies used in the development of social policy. Explores the

contributions of social research to social policy through studies of public records and data bases; clinical contexts; social experimentation; program planning, development, and evaluation; and action research.

**SPOL 665 Information Technologies and Decision Science (4)**

Surveys key concepts and tools from information science; operations research; systems science; dynamic modeling; and visualization theory within the social, behavioral, and natural sciences. Focuses on knowledge management in the public and private sector, i.e., design and application of decision-support tools; database creation and management; and communications tools for health, social welfare, public administration, sustainable development, and human services management. Includes computer laboratory experience both in class and on-line.

**SPOL 671 Applied/Structured Research I (2-4)**

Provides students the opportunity to advance knowledge and skills in a specialized area of study. Part of a year-long sequence that culminates in an applied research product at the end of SPOL 673. Research mentor develops with the student a plan for the year, with objectives for each quarter. Research plan approved by the Program Committee. Evaluation based on accomplishment of quarterly objective(s).

**SPOL 672 Applied/Structured Research II (2-4)**

Provides students the opportunity to advance knowledge and skills in a specialized area of study. Part of a year-long sequence that culminates in an applied research product at the end of SPOL 673. Research mentor develops with the student a plan for the year, with objectives for each quarter. Research plan approved by the Program Committee. Evaluation based on accomplishment of quarterly objectives.

**SPOL 673 Applied/Structured Research III (2-4)**

Provides students the opportunity to advance knowledge and skills in a specialized area of study. Part of a year-long sequence that culminates in an applied research product at the end of SPOL 673. Research mentor develops with the student a plan for the year,

with objectives for each quarter. Research plan approved by the Program Committee. Evaluation based on accomplishment of quarterly objectives.

#### SPOL 681 Dissertation Proposal I (2)

Development of the dissertation proposal. Research advisor develops with the student mutually agreed-upon objectives. Evaluation based on accomplishment of these objectives.

#### SPOL 682 Dissertation Proposal II (2)

Development of the dissertation proposal. Research advisor develops with the student mutually agreed-upon objectives. Evaluation based on accomplishment of these objectives.

Prerequisite: SPOL 681.

#### SPOL 683 Dissertation Proposal III (2)

Development of the dissertation proposal. Research advisor develops with the student mutually agreed-upon objectives. Evaluation based on accomplishment of these objectives. In addition, student must successfully defend a dissertation proposal according to program and Faculty of Graduate Studies guidelines.

Prerequisite: SPOL 681, SPOL 682.

#### SPOL 697 Research (4, 8)

Credit for dissertation research. Total of 20 units required. May be repeated for credit.

#### SPOL 699 Dissertation (4-12)

Should be taken during the last quarter of registration prior to completion and defense.

## STATISTICS

#### STAT 414 Introduction to Biostatistics I (3)

Introduces the student to statistical methods of summarizing, analyzing, presenting, and interpreting data, with emphasis on health-related data. Topics include normal and binomial distributions, probability, central limit theorem, confidence intervals; as well as hypothesis testing using t-tests, ANOVA, correlation, linear regression, and chi-square. Includes a brief introduction to multivariate analysis. Provides considerable practice in reading and interpreting

statistical summaries in peer-reviewed literature. Emphasizes the practical application of biostatistics. Includes extensive laboratory exercises using SPSS.

Prerequisite: Competency in introductory level mathematics.

#### STAT 415 Computer Applications in Biostatistics (1)

Student uses the personal computer to apply appropriate statistical methods in the summary and analysis of public health-related data, including descriptives as well as hypothesis testing using t-tests, correlation, linear regression, chi-square, and ANOVA. Uses the statistical application SPSS.

Prerequisite or concurrent: STAT 414); or equivalent.

#### STAT 416 Introduction to Biostatistics II (4)

Continues STAT 414, including a more in-depth examination of hypothesis testing, power, and sample size. One-way analysis of variance. Introduces nonparametric analysis. Additional experience in evaluating bioresearch literature.

Prerequisite: STAT 414, STAT 415.

#### STAT 417 Biomedical Data Management I (4)

Software designed for data collection, entry, and management. Develops skills in the use of relational databases and spreadsheets.

#### STAT 418 Biomedical Data Management II (4)

Student designs questionnaires and data-abstraction forms. Data collection, entry, and verification. Data cleaning.

#### STAT 419 Biomedical Data Management III (4)

Deployment and maintenance of client/server databases in a research/health care setting.

#### STAT 421 Data Presentation (3)

Student summarizes and presents biomedical research data. Explores several application software packages for graphing, summarizing, and presenting data explored.

**STAT 439 Fundamentals of Microcomputer Usage (1)**

Fundamental principles of microcomputer use. Introduces DOS and Windows commands and features. Lectures and in-class demonstrations emphasizing how to create, organize, manage, and protect files on hard disks. Laboratory homework required. Not applicable toward a graduate degree in the School of Public Health.

**STAT 441 Word Processing Fundamentals (1)**

Word processing principles and practice featuring current version of Microsoft Word. Laboratory homework required. Not applicable toward a graduate degree in the School of Public Health.

Prerequisite: STAT 439.

**STAT 443 Database Fundamentals (1)**

Database principles and practice featuring current version of FoxPRO. Laboratory homework required.

Prerequisite: College algebra.

**STAT 448 Analytical Applications of SAS (0, 3)**

Features of SAS computer package for analysis of statistical data. Decisions regarding choice of statistical procedures and interpretation of computer output to answer specific research questions.

Prerequisite or concurrent: STAT 414, STAT 415; or a passing score on the computer competency examination and a previous/concurrent statistical course.

**STAT 449 Analytical Applications of SPSS (3)**

Familiarizes student with features of the SPSS computer package for analysis of statistical data. Includes decisions regarding choice of statistical procedures and interpretation of computer output to answer specific research questions.

Prerequisite or concurrent: STAT 414, STAT 415; or passing score on the computer competency examination.

**STAT 464 Survey and Advanced Research Methods (4)**

Principles and procedures of surveys as applied to the health sciences. Topics covered include: survey and research designs, questionnaire construction, validity

techniques, sampling methods, sample size determination, minimum effects hypotheses, nonresponse problems, data collection, coding, processing, evaluation, and presentation of results. Hands-on experience presented as a combination of lecture and laboratory activities.

Prerequisite: STAT 414, STAT 415.

**STAT 468 Data Analysis (4)**

Concepts and applications of the most common data-analysis methods: correlation and regression, contingency tables, t-tests, analysis of variance, nonparametric methods, and multivariate analyses. Selection of appropriate method of analysis and reporting results. Emphasis placed on individual analysis of real-data sets. Lecture-demonstrations and laboratory work. Data analysis assignments to be completed in SPSS. Cross-listed as STAT 568.

Prerequisite: STAT 414, STAT 415; STAT 448 or STAT 449.

**STAT 498 Senior Project (5)**

Under faculty direction, student participates in on-the-job experience in data collection, management, and presentation. Requires written summary and oral presentation.

**STAT 499 Directed Study/Special Project (1-4)**

Individual arrangements for undergraduate, upper division students to study under the guidance of a program faculty member. May include readings, literature review, or other special projects. Minimum of thirty hours required for each unit of credit. Maximum of 4 units applicable to any undergraduate degree program.

**STAT 505 Statistics in Health Administration (3)**

Introduces the student to statistical methods of summarizing, analyzing, presenting, and interpreting data, with emphasis on health care and finance-related data. Topics include the normal and binomial distributions, probability, central limit theorem, confidence intervals; as well as hypothesis testing using ANOVA, t-tests, correlation, linear regression, and chi-square. Introduces multivariate analysis. Practice in reading and interpreting statistical summaries in peer-

reviewed literature. Emphasizes the practical application of biostatistics, using Excel as the primary application for analysis.

Prerequisite: Competency in introductory level mathematics.

#### STAT 509 General Statistics (0, 4)

Introduces statistical methods of summarizing, analyzing, presenting, and interpreting data, with emphasis on health-related data. Topics include normal and binomial distributions, probability, central limit theorem, confidence intervals; as well as hypothesis testing using t-tests, ANOVA, correlation, linear regression, and chi square. Introduces multivariate analysis. Practice in reading and interpreting statistical summaries in peer-reviewed literature. Emphasizes the practical application of biostatistics. Includes extensive laboratory exercises using SPSS.

Prerequisite: Competency in introductory level mathematics.

#### STAT 514 Intermediate Statistics for Health-Science Data (3)

Selected topics in multiple regression, logistic regression, ANOVA, ANCOVA, and nonparametric tests. Emphasizes understanding, selection, and application of statistical procedures and interpretation of computer output.

Prerequisite: STAT 549

#### STAT 515 Grant- and Contract-Proposal Writing (3)

A module-based course that presents an overview of the basic principles and practice of successful grantsmanship both from a research and programmatic perspective. Provides a comprehensive understanding of the different processes, structures, factors, and essential skills required when developing competitive proposals that are funded. Describes the various key elements involved in proposal preparation, such as identifying potential funding resources (government and private/foundations), formulating objectives, determining appropriate project/research design and evaluation methods, building budgets and sustainability plans, and understanding the grant review process.

#### STAT 521 Biostatistics I (4)

Fundamental procedures of collecting, tabulating, and presenting data. Measures of central tendency and variation, normal distribution, sampling, t-test, confidence intervals, chi-square, correlation, and regression. Emphasis on statistical inference.

Prerequisite or concurrent: STAT 548 or STAT 549; or consent of instructor.

#### STAT 522 Biostatistics II (4)

Simple and multiple regression, analysis of the residual, and model building. Multiple and partial correlation. Analysis of variance (fixed-effects model S) with multiple comparisons, including orthogonal contrasts, factorial designs, and analysis of covariance. Power analysis and sample size determination for these models.

Prerequisite: STAT 521.

#### STAT 523 Biostatistics III (4)

Applies the general linear model to a number of analysis-of-variance, regression, and multivariate procedures, including repeated measures, longitudinal data analysis, and mixed models. Power analysis and sample size determination of these models.

Prerequisite: STAT 522.

#### STAT 525 Applied Multivariate Analysis (3)

Multivariate normal distribution, discriminant analysis, principal components analysis, factor analysis, and canonical correlation. Emphasizes application of these analyses and interpretation of results.

Prerequisite: STAT 522.

#### STAT 528 Applied Statistics for Clinicians (3)

Introduces advanced statistical methods of data analysis. Topics include multiple linear regression, ANCOVA, factorial ANOVA, logistic regression, survival analysis, meta-analysis, and selected nonparametric tests. Emphasizes the practical application of biostatistics.

Prerequisite: STAT 509.

**STAT 530 Special Topics in Biostatistics (1-4)**

Lecture and discussion on a current topic in biostatistics. May be repeated for a maximum of 4 units applicable to degree program.

Prerequisite or concurrent: STAT 509 or STAT 521.

**STAT 531 Parametric and Non-parametric Bivariate Statistics (4)**

Focuses on concepts behind the appropriate use of parametric and nonparametric statistical methods. Includes laboratory.

Prerequisite: Intermediate graduate level statistics course or consent of instructor.

**STAT 532 Applied Bivariate Statistical Analysis (4)**

Brings together other biostatistics classes in a unified, applied, nontheoretical approach. Focuses on using the Statistical Package for the Social Sciences (SPSS) in the analysis of a dataset on the concepts presented in STAT 531.

Prerequisite: STAT 531; or consent of instructor.

**STAT 533 Applied Multivariable Statistical Analysis (4)**

Explains the different methods of performing multivariable analyses and other advanced statistical methods, and indicates reasons for choosing one method over another. Requires student to write a paper based on an applied research article that is medical in nature and that was published in a scientific, peer-reviewed journal within the past five years (copy of article to be submitted with paper), and to present a 20-30-minute PowerPoint presentation of the article.

Prerequisite: STAT 532; or consent of instructor.

**STAT 534 Quantitative Data Presentation (1)**

Quantitative data summaries and presentation. Uses selected software programs for graphing, summarizing, and presenting data.

**STAT 535 Introduction to Modern Nonparametric Statistics (3)**

Application and theory of nonparametric methods for analysis of nominal and ordinal data and distribution-free tests, including: rank tests for matched and

independent samples, chi-square and goodness-of-fit tests, McNemar's test, rank correlation, k-sample tests, randomizations tests, and Komogorov-Smirnov statistics using traditional approaches as well as modern approaches (permutation and re-sampling techniques).

Prerequisite: STAT 509 or STAT 521.

**STAT 538 Probability and Statistical Theory I (3)**

Statistical regularity, probability spaces. Fundamental theorems in discrete probability. Bayes' Theorem.

Random variables, densities, and distribution functions.

Prerequisite: STAT 521.

**STAT 539 Probability and Statistical Theory II (3)**

Continuous distributions. Transformations of random variables. Central-limit theorem. Distributions of sample statistics. Statistical inference, estimation, hypothesis testing, chi-square tests. Correlation.

Prerequisite: STAT 521, STAT 538.

**STAT 545 Survival Analysis (3)**

Statistical methods for analysis of survival data. Censoring mechanisms. Concepts of failure rates and different classes of life distributions under parametric and nonparametric settings. Statistical properties of competing survival functions estimators. Kaplan-Meier estimator, piecewise exponential estimator, and other equivalent estimators. Cox proportional hazard model and associated statistical inferences.

Prerequisite: STAT 522.

**STAT 548 Analytical Applications of SAS (0, 2)**

Features of SAS computer package for analysis of statistical data. Includes decisions regarding choice of statistical procedures and interpretation of computer output to answer specific research questions.

Prerequisite or concurrent: STAT 509 or STAT 521; or passing score on the computer-competency examination.

**STAT 549 Analytical Applications of SPSS (2)**

Features of SPSS computer package for analysis of statistical data. Includes decisions regarding choice of statistical procedures and interpretation of computer output to answer specific research questions.

Prerequisite or concurrent: STAT 509 or STAT 521.

**STAT 554 Applied Bayesian Data Analysis (2)**

Bayesian statistical analysis, with focus on applications. Compares Bayesian and frequentist methods. Bayesian model specification; choice of priors; and computational methods using appropriate software, such as WinBUGS—a free software—as a tool for Bayesian data analysis and SAS.

Prerequisite: STAT 539; or equivalent.

**STAT 555 Time Series and More Longitudinal Data Analysis (2)**

Analyses of time series models. Covers stationary and nonstationary models—including ARMA and ARIMA, auto-covariance and auto-correlation functions. Statistical tests for white noise. Introduces forecasting, including: use of regression in forecasting, removal and estimation of trend and seasonality, exponential smoothing, and stochastic time series models.

Prerequisite: STAT 522; or equivalent.

**STAT 556 Categorical Data Analysis (2)**

Topics include basic goodness-of-fit measures, such as Pearson's chi-square statistics, Mantel and Haenszel test, contingency tables, log-linear analysis of multidimensional contingency tables, and logistic regression. Techniques for analysis of count data, such as Poisson regression; and analysis of matched case-control studies and clustered categorical data.

Prerequisite or concurrent: STAT 522; or equivalent.

**STAT 557 Research Data Management (3)**

Basic data and file manipulation using database-management systems for health research. Uses several applications, with emphasis on Microsoft Access. Topics include: importing, exporting, merging, and linking files for a variety of applications; creating, updating, and querying databases; and basic programming,

application development, and data entry. General computer skills expected, but no prior computer programming experience necessary.

Prerequisite: STAT 509 or STAT 521, STAT 548 or STAT 549; general computer skills expected, but no prior computer programming experience necessary. For 3 units: STAT 509 or STAT 521, STAT 548 or STAT 549.

**STAT 558 Advanced Statistical Packages (3)**

Computer applications to advanced statistical procedures using SAS, SPSS, and other statistical software. Advanced techniques facilitating statistical analysis useful to biostatisticians, epidemiologists, health planners, and others transferring data files between software packages, combining and matching files, modifying data, and creating graphical presentations of data.

Prerequisite: STAT 548 or STAT 549, STAT 521, STAT 522. Prerequisite: STAT 548 or STAT 549, STAT 521, STAT 522.

**STAT 564 Survey and Advanced Research Methods (3)**

Principles and procedures of surveys as applied to the health sciences. Topics covered include: survey and research designs, questionnaire construction, validity techniques, sampling methods, sample size determination, minimum effects hypotheses, nonresponse problems, data collection, coding, processing, evaluation, and presentation of results. Presents hands-on experience as a combination of lecture and laboratory activities.

Prerequisite or concurrent: STAT 509 or STAT 521

**STAT 568 Data Analysis (3)**

Concepts and applications of the most common data analysis methods: correlation and regression, contingency tables, t-tests, analysis-of-variance, nonparametric methods, and multivariate analyses. Student selects appropriate method of analysis and reporting results. Emphasizes individual analysis of real-data sets. Lecture-demonstrations and laboratory work. All data analysis assignments to be completed in SPSS.

Prerequisite: STAT 509 or STAT 521, STAT 548 or STAT 549.

**STAT 569 Advanced Data Analysis (3)**

Brings together other biostatistics courses in a unified, applied approach. Specifically provides practical experience with real-world biostatistical data, using a wide variety of statistical procedures—including general linear models, generalized linear models, and nonparametric alternatives. Includes guidelines for choosing statistical procedures, model building, validation, and written presentation of results.

Prerequisite: STAT 522.

**STAT 594 Statistical Consulting (1-4)**

Advanced students participate in statistical consultation with senior staff members. Statement of the problem, design of the experiment, definition of response variables, appropriate analysis of data, statistical inferences, and interpretation of data.

Prerequisite: EPDM 509, STAT 521; or consent of instructor.

**STAT 605 Seminar in Biostatistics (1)**

Presents and discusses area of interest. Individual research and report.

**STAT 625 Special Topics in Biostatistics (1-3)**

Lecture and discussion on a current topic in biostatistics. May be repeated for a maximum of 6 units applicable to degree program. Recommended for doctoral students.

Prerequisite: STAT 521.

**STAT 692 Research Consultation (1-8)**

Individual consultation on project design and data collection, analysis, evaluation, and interpretation.

**STAT 694A Research I (1)**

Independent research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

**STAT 694B Research II (1)**

Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

**STAT 694C Research III (1)**

Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

**STAT 694D Research IV (1)**

Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

**STAT 695 Thesis (2-8)**

Student prepares report of individual guided experimental research study in biostatistics, under direct faculty supervision. Limited to graduate students whose thesis projects have been approved by their research committee.

**STAT 696 Directed Study/Special Project (1-4)**

Individual arrangements for advanced students to study under the guidance of a program faculty member. May include readings, literature reviews, or other special projects. Minimum of thirty hours required for each unit of credit. Maximum of 4 units applicable to any master's degree program.

Prerequisite: Consent of instructor responsible for supervision and of program advisor.

**STAT 798 Field Practicum (1-4)**

Provides opportunities for students to integrate the biostatistics skills they have learned with public health practice in a community setting. Students seeking the M.P.H. degree in biostatistics typically register for at least two, 1-unit courses in STAT 798, for a minimum of 240 hours of practical experience in public health.

## **SCIENCE AND TECHNOLOGY—CONJOINT**

**STCJ 303 Cultural Learning (4)**

Students develop skills in learning a culture by applying principles from two modes of inquiry: ethnography and ethnology. Practice gathering cultural information and data through ethnographic interviews, as well as through research in the human relations area files. Focuses on developing knowledge of a particular culture in which the student has an interest.

**STCJ 501 Critical Thinking (4)**

Develops in postbaccalaureate students critical-thinking skills, including: evaluating ideas, using dialogical learning for deep reliable knowledge, thinking inductively and deductively, accurately conceptualizing for better decision making and behavioral choices, applying critical thinking to academic success and life-long learning.

**STCJ 502 Classroom Teaching Strategies (3)**

Addresses pedagogical issues including, but not limited to: developing a healthy learning environment in the classroom, developing effective teaching strategies, fostering effective learning strategies in students, preparing syllabi, lecturing, managing classroom discussion, evaluating students' performance.

**STCJ 514 Editing, Style, and Grammar for Academic Writing and Publication (2)**

Focuses on mastery of the editing stage of academic manuscript preparation. Applicable to all academic works, including publishable research results, term papers, dissertations, theses, and proposals. Covers the self-editing option, editing techniques, grammar, punctuation, and style. Addresses APA and other styles.

**STCJ 515 Researching and Writing Graduate Level Papers (2-4)**

Provides skills for critical writing, including organization, development of idea, and presentation of conclusion. Develops skills applicable to the preparation of term papers in the students' disciplines.

**STCJ 615 Writing for Thesis/Dissertation (2-4)**

Develops skills necessary for researching and writing theses and dissertations. Includes researching literature in electronic and library sources; and collecting, filtering, paraphrasing, and organizing data from literature. Develops editing skills that may be applied to any prose writing involved in producing a thesis or dissertation—including proposals, abstracts, introductions, reviews of literature, write-ups of data analyses, and conclusions.

**STCJ 905 Preparation for Comprehensive Examinations (0)**

Provides degree-seeking graduate students registration on a continuing basis in order to maintain active status in the School of Science and Technology while preparing for comprehensive examinations. Students work with their primary advisor to outline a plan to review their progress during the term.

**SURGERY****SURG 599 Surgery Directed Study (1.5-18)****SURG 701 Surgery Clerkship (1.5-15)**

Third-year clerkship that includes six weeks of general surgery, three weeks of subspecialties, and one week of evaluation/tests.

**SURG 821 Surgery Subinternship (1.5-18)**

A subinternship in surgery in which the student performs in the intern's role as part of a team in the clinical care of surgical patients. Subinterns expected to take responsibility for the daily care of individual patients, to practice procedural skills, and to assist and participate in the surgical procedures at a level appropriate to their training. Subinterns participate in overnight in-house calls, and respond to in-house emergencies and requests for routine consultations and for evaluation of patients in the emergency department. Duty hours and hours of responsibility for night call will not exceed the guidelines set for the junior house staff by the respective institutions where rotations occur and by the guidelines set forth for medical students on surgery.

**SURG 822 Surgery ICU (1.5-6)**

Includes four-week service on a surgical intensive care unit.

Prerequisite: SURG 701.

**SURG 891 Surgery Elective (1.5-18)**

May include pediatric surgery, vascular surgery, trauma surgery, general surgery, cardiothoracic surgery, plastic surgery, neurosurgery, otolaryngology, surgical intensive care, and urology.

## UROLOGY

UROL 891 Urology Elective (1.5-18)

## WRITING

WRIT 117 Writing I (2)

Basic writing techniques essential for academic success, developed in three major areas: understanding of concepts within writing; understanding and following the overall writing process; and building specific grammar skills on a conceptual framework of language structure. Course develops specific skills: building vocabulary; spelling; understanding the special and peculiar words, idioms, and expressions of American culture; building sentences; structuring paragraphs; organizing content; creating logical arguments; and clarifying thoughts (writing what the student means to express). Emphasizes correct use of punctuation, capitalization, and the general mechanics of writing.

WRIT 177 Writing II (2)

Academic and research writing, formatting, and fluency with styles.

WRIT 317 Writing II (2)

Advanced writing. Combines creative and affective procedures (visualization skills, music, the visual arts) in a proactive, lateral-thinking process to enrich traditional academic/logical/cognitive learning approaches and to develop highly conceptual, high-level critical-thinking/cognitive skills essential for successful academic writing. Skills include: preplanning techniques; organizing, prioritizing, and structuring ideas; revising and editing; using a consistent personal style; citing sources with correct footnote and bibliographic content and format; applying metalingual understanding to grammar, English-language concepts, and English metaphors. Applies these skills to quality writing of expository compositions, assignments, projects, clinical reports, observation reports, and case studies.

WRIT 319 Writing for Health

Professionals— Short Course (1)

A truncated version of WRIT 317 that includes the basics of genre structure, language structure, prewriting techniques, and self-editing techniques. Emphasizes development of logic through argument and causal factors for purposes of writing clear reports, literature reviews, and research essays. Incorporates basic strategies for reducing writer's block.

WRIT 324 Writing for Health Care

Professionals (2)

Students learn to write term papers and publishable articles from research in the health care literature.

WRIT 417 Writing III: Research Writing (2)

Advanced technical writing. Provides advanced skills for technical/scientific writing of research assignments, major projects, clinical reports, observation reports, case studies, etc. Highly conceptual writing combines technical skills with creative/critical-thinking skills. Combines traditional cognitive learning with enriching affective learning styles and methods. Specific skills include: prewriting techniques; organizing, prioritizing, and structuring of ideas; revising and editing; correct annotation style (e.g., APA, MLA, etc.); and applying metalingual understanding to grammar and English-language concepts.

WRIT 425 Critical Thinking and Writing (1)

Assists and guides students through the writing process of drafting an orderly, coherent, and acceptable final modality position paper, thesis statement, dissertation abstract, and/or dissertation proposal. A straightforward, intensive, accelerated teaching and learning approach to scholarly writing. Approaches writing as a critical, creative-thinking process. Taught in sections, according to students' needs as they learn by working on their own projects.

WRIT 451 Writing for Publication I (2)

Focuses on producing writing that leads to publication. Emphasizes individual writing processes, revision strategies, and polishing drafts prior to sending out for publication. Open to faculty and others by permission of instructor.

**WRIT 452 Writing for Publication II (2)**

Focuses on producing writing that leads to publication. Emphasizes individual writing processes, revision strategies, and polishing drafts prior to sending out for publication. Open to faculty and others by permission of instructor.

Prerequisite: WRIT 451.

**WRIT 453 Writing for Publication III (2)**

Focuses on producing writing that leads to publication. Emphasizes individual writing processes, revision strategies, and polishing drafts prior to sending out for publication. Open to faculty and others by permission of instructor.

Prerequisite: WRIT 452.

**WRIT 486 Graduate's Guide to Resumes, CVs, and Cover Letters (0.5)**

Takes an in-depth look at the anatomy of a resume and CV, and explains how they differ. Discusses what

makes a good cover letter, and how cover letters can undermine even the best resume or CV. Discusses the latest on computerized resume scanning, including a hands-on, roundtable tutorial to create, edit, or revitalize one's personal resume, CV, or cover letter.

**WRIT 499 Directed Study (1-4)**

Provides graduate students the opportunity to pursue advanced study under the guidance and tutelage of a faculty member in an area related to their graduate study and relevant to their writing skills and needs. Students design an individualized program in professional writing. The developed study program may include attending specified classes, library research, relevant literature review, or interviews and discussions with resource persons who have the expertise in the desired specialty area.

# V

## THE FACULTY

# The Faculty

## KEY TO CODES

In the alphabetical listing below, the two-letter code following the department name indicates the school or faculty in which the faculty member holds academic appointment. The two-letter symbols are:

AH	School of Allied Health Professions
SD	School of Dentistry
SM	School of Medicine
SN	School of Nursing
SP	School of Pharmacy
PH	School of Public Health
SR	School of Religion
ST	School of Science and Technology
GS	formerly Graduate School, now Faculty of Graduate Studies
FGS	Faculty of Graduate Studies
SE	formerly Loma Linda University School of Education, now La Sierra University School of Education

## THE FACULTY

AAEN, GREGORY S. Assistant Professor, Department of Pediatrics SM

M.D. Loma Linda University SM 2003

ABBEY, DAVID E. Professor, Department of Preventive Medicine SM and Department of Epidemiology and Biostatistics PH

Ph.D. University of California, Los Angeles 1972

ABBOY, RAMADAS. Assistant Clinical Professor, Department of Medicine SM

M.B.B.S. Stanley Medical College, India 1967

ABD-ALLAH, SHAMEL A. Associate Professor, Department of Pediatrics SM; Assistant Professor, Department of Emergency Medicine SM

M.D. Loyola Stritch Medical School, Chicago, Illinois 1989

ABDEL-SALAM, NOHA. Clinical Instructor, Department of Pediatric Dentistry SD

D.D.S. Loma Linda University SD 2008  
B.D.S. Cairo University 2000

ABDEL-SAYED, SHELLEY F. Assistant Professor, Department of Anesthesiology SM

M.D. Loma Linda University SM 2004

ABDIPOUR, AMIR. Assistant Professor, Department of Medicine SM

M.D. Shahid Beheshti University of Medical Science 1996

ABEDI, HAMID R. Assistant Professor, Department of Endodontics SD

B.D.S. Royal London Hospital, England, UK 1991

ABOGADO, ELVA J. Clinical Instructor, School of Nursing SN

M.H.A. California State University, San Bernardino 2000

ABOU-ZAMZAM, AHMED MOHAMMED, JR. Associate Professor, Department of Cardiovascular and Thoracic Surgery SM

M.D. Yale University School of Medicine 1992

ACACIO, BRIAN D. Assistant Clinical Professor, Department of Gynecology and Obstetrics SM

M.D. George Washington University 1993

- ACHILEFU, SAMUEL. Adjunct Professor, Department of Radiology SM and Department of Pharmaceutical Sciences SP  
Ph.D. University of Nancy, France 1991  
M.Sc. University of Ibadan, Nigeria 1986
- ADAMICH, THOMAS S. Assistant Professor, Department of Periodontics SD  
D.D.S. Case Western Reserve University, Cleveland, Ohio 1983
- ADAMS, JANE E. Assistant Professor, Department of Health Administration PH  
M.H.A. University of La Verne, Los Angeles 1991
- ADAMS, TRACY R. Assistant Professor, Department of Dental Hygiene, SD  
B.S. Loma Linda University SD 2005
- ADELMAN, TRAVIS B. Instructor, Department of Family Medicine SM  
M.P.A. Loma Linda University AH 2007
- AFFELDT, JOHN C. Associate Professor, Department of Ophthalmology SM  
M.D. University of Southern California Keck School of Medicine 1977
- AFIFI, GHADA YOUSSEF. Assistant Clinical Professor, Department of Plastic and Reconstructive Surgery SM  
M.D. Albany Medical College, New York 1990
- AFSARI, ALAN M. Assistant Professor, Department of Medicine SM  
M.D. American University of the Caribbean, Netherlands Antilles 2000
- AFTAB, WAQAS. Assistant Professor, Department of Medicine SM  
M.B.B.S. King Edward Medical College, Lahore, Pakistan 1999
- AGARWAL, MADHU R. Associate Professor, Department of Ophthalmology SM; Assistant Professor, Department of Neurosurgery SM  
M.D. University of California, Los Angeles 1999
- AGHAKHANI, ARASH. Assistant Professor, Department of Dental Anesthesiology SD  
M.S. University of Maryland 1996  
D.D.S. University of the Pacific 1994
- AGPAOA, GRACE T. Instructor, Department of Clinical Laboratory Science AH  
B.S. University of California, Riverside 1991
- AHMAD, BORHAAN S. Assistant Professor, Department of Pediatrics SM  
M.D. Kabul University, Afghanistan 1981
- AHMAD, IMDAD. Assistant Professor, Department of Medicine SM  
M.B.B.S. University of the Punjabi, India 1969
- AIYAR, SHOBHA S. Assistant Professor, Department of Medicine SM  
M.B.B.S. Mahatma Gandhi Memorial Medical College, India 1989
- AJA, GODWIN N. Assistant Professor, Department of Global Health PH  
Dr.P.H. Loma Linda University PH 2008
- AJUMOBI, ADEWALE B. Assistant Professor, Department of Medicine SM  
M.B.B.S. University of Ilorin, Nigeria
- AKA, PAUL KOJI. Assistant Clinical Professor, Department of Cardiovascular and Thoracic Surgery SM  
M.D. Loma Linda University SM 1986
- AKAMINE-DAVIDSON, SANDRA M. Clinical Instructor, Department of Ophthalmology SM  
O.D. Southern California College of Optometry 1989
- AKIN, MARIE-ROSE MINHTAM LEVAN. Adjunct Assistant Professor, Department of Pathology and Human Anatomy SM  
M.D. Indiana University 1981

- AL AQEEL, ADNAN. Assistant Professor, Department of  
Cardiopulmonary Sciences AH  
M.H.I.S. King Saud bin Abdulaziz College, Saudi  
Arabia 2005
- ALATTAS, ABDULKADER. Assistant Professor,  
Department of Radiation Technology AH  
Ph.D. Texas Woman's University 2006
- AL FAGIH, MOHAMMED RASHID. Adjunct Clinical  
Professor, Department of Cardiopulmonary Sciences  
AH  
M.B.Ch.B. Baghdad Medical College, Iraq 1971
- AL-ARDAH, ALADDIN JAMAL. Assistant Professor,  
Department of Restorative Dentistry SD  
B.D.S. Jordan University of Science and Technology,  
Jordan 1999
- ALBANO, FELIX A. Assistant Clinical Professor,  
Department of Physician Assistant Sciences, AH  
M.D. University of Santo Tomas, Philippines 1966
- ALBERT, JULIE C. Associate Professor, Department of  
Psychiatry SM  
D.S.W. University of Southern California 1978
- ALBERTSON STEWART R. Assistant Clinical Professor,  
Department of Health Policy and Management PH  
J.D. Loyola University New Orleans Law School 2002
- ALBRECHT, EDWARD G. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1980
- ALEXANDER, WIL. Emeritus Professor, School of  
Religion SR; Professor, Department of Family Medicine  
SM  
Ph.D. Michigan State University 1962
- ALIPOON, ALAN. Instructor, Department of  
Cardiopulmonary Sciences AH  
B.S. California State University, San Bernardino 2000
- ALIPOON, LAURA LYNN. Professor, Department of  
Radiation Technology AH  
Ed.D. La Sierra University 2001
- ALLARD, MARTIN W. Professor, Department of  
Anesthesiology SM  
M.B.Ch.B. University of Capetown, South Africa 1971
- ALLEN, CHAD N. Instructor, Department of Oral and  
Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 2010
- AL-MUTARI, YOUSEF S. Adjunct Instructor, Department  
of Cardiopulmonary Sciences AH  
B.S. Indiana University 2003
- ALONSO-NEAL, ESTHER. Assistant Professor, School of  
Nursing SN  
M.S.N. California State University, San Bernardino  
2006
- ALSOWAYEGH, KHALID S. Assistant Professor,  
Department of Cardiopulmonary Sciences AH  
M.S. Georgia State University 2007
- ALTUWAIJIRI, ALI SULAIMAN. Professor, Department  
of Cardiopulmonary Sciences AH  
Ph.D. Tulane University, New Orleans, Louisiana  
1981
- ALVAREZ, LOUIS R. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. Autonomous University of Guadalajara, Mexico  
1986
- ALVAREZ, RICARDO. Assistant Clinical Professor,  
Department of Restorative Dentistry SD  
D.D.S. Universidad Autonoma Baja California 1989
- ALVES, DANIEL. Assistant Clinical Professor,  
Department of Environmental and Occupational Health  
PH  
M.P.H. Loma Linda University PH 2004  
M.D. Loma Linda University SM 1996
- AMAAR, YOUSEF G. Associate Research Professor,  
Department of General and Trauma Surgery SM  
Ph.D. Simon Fraser University, British Columbia,  
Canada 1997

- AMINIKHARRAZI, TAHER. Assistant Clinical Professor,  
Department of Restorative Dentistry SD  
D.M.D. Boston University 2001
- ANDERSEN, BRADLEY T. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 2003
- ANDERSON, DENNIS K. Assistant Clinical Professor,  
Department of Plastic and Reconstructive Surgery SM  
M.D. Loma Linda University SM 1966
- ANDERSON, DONALD LEE. Associate Professor,  
Department of Psychiatry SM  
M.D. Loma Linda University SM 1971
- ANDERSON, DONALD LYNN. Associate Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1973
- ANDERSON, DUANE R. Assistant Professor, Department  
of Orthopaedic Surgery SM  
M.D. University of Minnesota 1979
- ANDERSON, JEANNIE. Clinical Instructor, Department  
of Radiation Technology AH  
M.S. University of California, Riverside 2005
- ANDERSON, NANCY J. Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1976
- ANDERSON, PAMELA E. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1982
- ANDERSON, ROGER M. Adjunct Assistant Professor,  
Department of Periodontics SD  
D.D.S. Loma Linda University SD 2005
- ANDERSON, S. ERIC. Associate Professor, Department of  
Health Administration PH  
Ph.D. University of North Texas 1992
- ANDERSON, SHAWN R. Assistant Clinical Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2005
- ANDREASEN, TROY J. Assistant Clinical Professor,  
Department of Surgery SM  
M.D. University of Utah Medical School 1995
- ANDREIKO, CRAIG A. Assistant Professor, Department  
of Orthodontics and Dentofacial Orthopedics SD and  
Orthodontics and Dentofacial Orthopedics Program  
FGS  
D.D.S. Loma Linda University SD 1988
- ANDREWS, D. JEANNE. Associate Professor, Department  
of Pediatrics SM  
M.D. Loma Linda University SM 1950
- ANGELES, DANILYN MAG-AKAT. Associate Professor,  
Department of Basic Sciences SM and School of Nursing  
SN  
Ph.D. Loma Linda University GS 2000
- ANGELOV, NIKOLA. Associate Professor, Department of  
Periodontics SD  
D.D.S. University of St. Cyril and Methodius,  
Slovakia 1993
- ANGELOVA, DRAGANA. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2009  
D.D.S. University of St. Cyril and Methodius,  
Macedonia 1993
- ANHOLM, J. MILFORD. Professor, Department of  
Orthodontics SD  
D.D.S. University of the Pacific 1946
- ANHOLM, JAMES D. Associate Professor, Department of  
Medicine SM  
D.D.S. Loma Linda University SD 1976
- APPEL, JAMES ERIC. Assistant Professor, Department of  
Family Medicine SM  
M.D. Loma Linda University SM 2000
- APPLEGATE, PATRICIA JEAN. Associate Professor,  
Department of Medicine SM  
M.D. University of Southern California 1980

- APPLEGATE, RICHARD LEE II. Professor, Department of Anesthesiology SM and School of Nursing SN  
M.D. Loma Linda University SM 1982
- APPLETON, CAROL J. MUTH. Assistant Professor, Department of Physical Therapy AH  
M.P.H. Loma Linda University PH 1974
- AQEEL, ADNAN AL. Assistant Professor, Department of Cardiopulmonary Sciences, AH  
M.H. I.S. King Saud bin Abdulaziz College, Saudi Arabia 2005
- ARAKAKI, SHIGENOBU. Adjunct Assistant Professor, Department of Allied Health Studies AH  
D.Min. San Francisco Theological Seminary 1974
- ARBABI, ZARSHID. Assistant Professor, Department of Medicine SM  
M.D. Iran University 1990
- ARCHAMBEAU, JOHN O. Professor, Department of Radiation Medicine SM  
M.D. Stanford University School of Medicine 1955
- ARECHIGA, ADAM L. Assistant Professor, Department of Psychology ST  
Psy.D. Loma Linda University ST 2006  
Dr.P.H. Loma Linda University PH 2006
- ARIUE, BARBARA K. Assistant Professor, Department of Pediatrics SM  
M.D. University of Vermont 1993
- ARMIJO, JAVIER ALONSO. Assistant Clinical Professor, Department of Family Medicine SM  
M.D. University of California, Irvine 1991
- ARMSTRONG, DANIEL REID. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1972
- ARMSTRONG, DARLENE A. Assistant Professor, Department of Dental Hygiene SD  
M.A. Azusa Pacific University 2005
- ARNETT, WILLIAM G. Adjunct Assistant Professor, Department of Orthodontics SD  
D.D.S. University of Southern California 1972
- ARNETT, R. LESLIE, JR. Professor, Department of Periodontics SD and Periodontics Program FGS  
M.S.N Loma Linda University GS 1968  
D.D.S. University of Southern California 1959
- ARNETT, MARJORIE R. Assistant Professor, Department of Dental Educational Services SD  
M.S. California State University, Fullerton 1997
- ARNOLD, LORI. Assistant Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Montana School of Pharmacy 2000
- ARORA, NAVNEET S. Assistant Clinical Professor, Department of Periodontics SD  
M.P.H. Loma Linda University PH 2005  
B.D.S. KLES Institute of DS-India 2002
- ASAI, YUJI. Adjunct Assistant Professor, Department of Allied Health Studies AH  
B.S. National Institution for Academics, Japan 2000
- ASGARZADIE, FARBOD. Assistant Professor, Department of Neurosurgery SM  
M.D. University of Chicago 1999
- ASGEIRSSON, ARNI G. Adjunct Assistant Clinical Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1964
- ASHLEY, EDD J. Professor, Department of Physical Therapy AH  
Ed.D. Boston University 1971
- ASHWAL, STEPHEN. Distinguished Professor, Department of Neurology and Department of Pediatrics SM  
M.D. New York University 1970

- ASI, ADLEIT F. Clinical Instructor, Department of Nutrition and Dietetics AH  
M.B.A. University of Phoenix 2008
- ASK, MIHRAN N. Assistant Professor, Department of Medicine SM, Department of Preventive Medicine SM, and Department of Health Promotion and Education PH  
M.D. Loma Linda University SM 1979
- ATIGA, ROLANDO, A. JR. Assistant Clinical Professor, Department of Physician Assistant Sciences AH  
M.D. Ross University, Dominica, West Indies 1999
- ATKIN, ROY D. Assistant Professor, Department of Orthodontics SD  
D.D.S. Marquette University, Milwaukee, Wisconsin 1966
- ATKINS, GORDON J. Adjunct Assistant Professor, Department of Earth and Biological Sciences ST and Biology Program FGS  
Ph.D. McGill University, Montreal, Canada 1987
- AU, HUY D. Assistant Professor, Department of Pediatrics SM  
M.D. Finch University of Medical Sciences/The Chicago Medical School 2005
- AUNE-NELSON BETH. Clinical Instructor, Department of Occupational Therapy AH  
B.S. Loma Linda University AH 1998
- AUSTIN, CRAIG EUGENE. Instructor, Department of Clinical Laboratory Science AH  
B.S. Loma Linda University AH 1983
- AVANTS, TERESA PFIEFLE. Assistant Clinical Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1984
- AVELING, D. LEIGH. Associate Professor, School of Religion SR  
D.Min. Claremont School of Theology 1996
- AVINA, ROBERT L. Assistant Professor, Department of Family Medicine SM  
M.D. University of California, San Diego 1977
- AWRAMIK, STANLEY. Clinical Professor, Department of Earth and Biological Sciences ST  
Ph.D. Harvard University 1973
- AYASS, JAY R. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2005
- AYYOOUB, ZIYAD. Assistant Professor, Department of Physical Medicine and Rehabilitation SM  
M.D. Minsk State Medical Institute, Belarus 1986
- AZER, SHERIF A. Associate Professor, Department of Anesthesiology SM  
M.D. Assiut University Faculty of Medicine, Egypt 1972
- BABA, NADIM. Professor, Department of Restorative Dentistry SD and Prosthodontics Program FGS  
M.S. Boston University 1999  
D.M.D. University of Montreal, Quebec, Canada 1996
- BACHELLER, CATHERINE A. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1979
- BACKSTROM-GONZALES, MELISSA KATHERINE. Clinical Instructor, Department of Communication Sciences and Disorders AH  
M.S. University of Redlands 1987
- BADAUT, JEROME. Assistant Professor, Department of Basic Sciences SM; and Department of Pediatrics SM  
Ph.D. Universite Pierre et Marie Curie, France 1999
- BAE, WON-CHUL. Assistant Professor, Department of Radiology SM  
M.D. Medical College, Busan National University, Republic of Korea 1963
- BAEK, HESUK H. Assistant Professor, Department of Medicine SM  
M.D. Medical College of Georgia 2000

- BAERG, JOANNE E. Assistant Professor, Department of Surgery SM and Department of Pediatrics SM  
M.D. University of British Columbia, Canada 1990
- BAHK, THOMAS. Assistant Professor, Department of Pediatrics SM  
M.D. University of California, Los Angeles 1997
- BAHJRI, KHALED A. Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.P.H. Loma Linda University PH 2001  
M.D. Fatima College of Medicine, Manila, Philippines 1999
- BAILEY, LEONARD L. Distinguished Professor,  
Department of Cardiovascular and Thoracic Surgery SM and Department of Pediatrics SM  
M.D. Loma Linda University SM 1969
- BAKER, GRACE T. Instructor, Department of Clinical Laboratory Science AH  
B.S. University of California, Riverside 1991
- BAKER, SUSAN M. Adjunct Assistant Clinical Professor,  
Department of Physical Therapy AH  
D.P.T.Sc. Loma Linda University AH 1999
- BAKER, WINETTA. Assistant Professor, Department of Counseling and Family Science ST  
M.B.B.S. Loma Linda University 2006
- BAKLAND, LEIF KRISTIAN. Professor, Department of Endodontics SD  
D.D.S. Loma Linda University SD 1963
- BALAGOPALAN, MOHAN. Clinical Instructor,  
Department of Environmental and Occupational Health PH  
M.B.A. Azusa Pacific University 1984
- BALDWIN, DALTON D. Associate Professor, Department of Urology SM  
M.D. Loma Linda University SM 1991
- BALGUMA, FREDDIE B. Associate Clinical Professor,  
Department of Pediatrics SM  
M.D. University of Santo Tomas, Philippines 1962
- BALLI, KEVIN C. Assistant Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1998
- BALOG, ANDREA. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. Loma Linda University SP 2008
- BANDY, KRISTEN R. Instructor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 2005
- BANSAL, DALJEET BHATA. Assistant Professor,  
Department of Medicine SM  
M.D. Delhi University, India 1968
- BANSAL, RAMESH C. Professor, Department of Medicine SM  
M.B.B.S. All India Institute of Medical Sciences, India 1972
- BANTA, JIMMIE E., JR. Associate Professor, Department of Health Policy and Management PH  
Ph.D. University of California, Los Angeles 2004
- BARCEGA, BESH R. Assistant Professor, Department of Emergency Medicine SM and Department of Pediatrics SM  
M.D. Loma Linda University SM 1990
- BARILLA, DORA J. Assistant Professor, Department of Health Policy and Management PH  
M.P.H. Loma Linda University PH 1995
- BARKER, GARY R. Assistant Professor, Department of Urology SM  
M.D. Loma Linda University SM 1980
- BARNES, DONALD T. Assistant Professor, Department of Radiology SM  
M.D. Howard University, Washington D.C. 1971
- BARON, PEDRO W. Professor, Department of General and Trauma Surgery SM  
M.D. University of Antioquia School of Medicine, Columbia 1977

- BARRERA, MARCO. Clinical Instructor, Department of Ophthalmology SM  
M.D. Montemorelos University, Mexico 1995
- BARRETT, DWIGHT. Assistant Professor, Department of Health Policy and Management PH  
M.A. La Sierra University 2002
- BARRIO, JUAN. Assistant Professor, Department of Medicine SM  
M.D. University of California, San Diego 1997
- BARTNIK, BRENDA L. Assistant Professor, Department of Radiology SM  
Ph.D. University of Saskatchewan, Canada 2002
- BARTON, LORAYNE. Adjunct Associate Professor, Department of Health Promotion and Education PH  
M.P.H. Loma Linda University PH 2000  
M.D. University of California, Irvine 1996
- BARTOS SPECHT, REBEKAH. Instructor, Department of Medicine SM  
M.S.N. Azusa Pacific 2001
- BASHKIROV, VLADIMIR. Associate Research Professor, Department of Radiation Medicine SM  
Ph.D. Moscow Institute of Physics and Technology, Russia 1997
- BASICAL-OLIVER, NOVE A. Instructor, Department of Clinical Laboratory Science AH  
B.S. Loma Linda University AH 1986
- BASTA, SAEDA H. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Damascus University Dental School, Syria 1994
- BATESOLE, MARK KENNETH. Assistant Professor, Department of Orthodontics SD  
D.D.S. University of Southern California 1998
- BATES, BRIAN E. Assistant Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1986
- BATES, NERIDA T. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1997
- BATIN, FRANCES P. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1988
- BAUGH, WILSON B., JR. Assistant Clinical Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. University of Southern California 1981
- BAUM, MARTI F. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1979
- BAYDALA, LARYSA O. Assistant Clinical Professor, Department of Dental Educational Services SD  
B.S. Loma Linda University SD 2007
- BAYLINK, DAVID J. Distinguished Professor, Department of Medicine SM; Professor, Department of Dental Educational Services SD  
M.D. Loma Linda University SM 1957
- BAZ, SAMUEL. Assistant Professor, Department of Medicine SM  
M.D. University of Southern California School of Medicine 1997
- BEAL, WILLIAM S. Instructor, Department of Orthopaedic Surgery SM  
D.P.M. California College of Podiatric Medicine 1976
- BEARDSLEY, LISA M. Professor, Department of Health Promotion and Education PH; Adjunct Assistant Professor, School of Religion SR  
Ph.D. University of Hawaii, Manoa 1989
- BECKFORD, ANDREA R. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2005
- BECK, JIMMY B. Assistant Professor, Department of Pediatrics SM  
M.D. University of Washington 2004

- BECKWITH, J. BRUCE. Adjunct Professor, Department of Pathology and Human Anatomy SM, Department of Surgery SM, and Department of Pediatrics SM  
M.D. University of Washington School of Medicine 1958
- BEDASHI, ALLAN M. Assistant Professor, Department of Physician Assistant Sciences AH  
M.S. Western University of Health Sciences, Pomona, California 1997
- BEDDOE, RANDY A. Adjunct Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1984
- BEDFORD, ANNETTE. Assistant Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1990
- BEDROS, ANTRANIK A. Associate Professor, Department of Pediatrics SM  
M.D. University of Damascus, Syria 1970
- BEE, DAVID M. Assistant Professor, Department of Medicine SM  
M.D. University of Southern California 1967
- BEELER, LAUREN M. Clinical Instructor, Department of Physical Therapy AH  
B.S. Indiana University 1979
- BEESON, W. LAWRENCE. Associate Professor, Department of Epidemiology and Biostatistics PH and Epidemiology and Biostatistics Program FGS  
Dr.P.H. Loma Linda University PH 2002
- BEHRENS, B. LYN. Emerita Professor, Department of Pediatrics SM  
M.B.B.S. Sydney University, Australia 1963
- BEKENDAM, PAMELA Y. Assistant Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1994
- BEKENDAM, PETER D. Instructor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 2004
- BELCHER, TERRY K. Clinical Instructor, Department of Clinical Laboratory Science AH  
B.S. University of Washington 1971
- BELEN, NENITA P. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. University of Santo Tomas, Philippines 1967
- BELIN, LYNNA SUE. Adjunct Assistant Professor, Department of Health Administration PH  
Ph.D. Claremont Graduate School 1994
- BELLIARD, JUAN C. Associate Professor, Department of Global Health PH and Department of Environmental and Occupational Health PH  
Ph.D. Loma Linda University GS 1996
- BELLINGER, DENISE L. Associate Research Professor, Department of Pathology and Human Anatomy SM  
Ph.D. Indiana State University 1985
- BENCH, RUEL WATSON. Associate Professor, Department of Orthodontics SD  
D.D.S. University of the Pacific 1953
- BENJAMIN, YONAN K. Clinical Instructor, Department of Environmental and Occupational Health PH  
B.S. Loma Linda University PH 1982
- BENNETT, DELLA C. Assistant Clinical Professor, Department of Plastic and Reconstructive Surgery SM  
M.D. Pennsylvania State College of Medicine 2000
- BENNETT, DONNA L. Assistant Professor, Department of Health Policy and Management PH  
J.D. Massachusetts School of Law 2005
- BENNETT, JACK L. Clinical Instructor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1962
- BERGENDAHL, KELLIE R. Assistant Professor, Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2002

- BERGEY, DARREN L. Instructor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1996
- BERK, LEE S. Associate Professor, Department of Allied Health Studies AH and Department of Physical Therapy AH  
Dr.P.H. Loma Linda University PH 1981
- BERMAN, MARTHA. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. University of Zulia, Venezuela 1985
- BERNAL, GUILLERMO D. Professor, Department of Restorative Dentistry SD  
D.D.S. San Cristobal Hospital, Puerto Rico 1988
- BERNUS, ANNA. Assistant Professor, Department of Pediatrics SM  
M.D. New York Medical College 2001
- BERRIMAN, DIANE J. Assistant Professor, Department of Medicine SM  
M.D. Oral Roberts University School of Medicine, Oklahoma 1988
- BERRY, FREDERICK A. Professor, Department of Restorative Dentistry SD  
D.D.S. University of Pennsylvania 1962
- BETANCOURT, HECTOR M. Professor, Department of Psychology ST  
Ph.D. University of California, Los Angeles 1983
- BETZ, CECILY L. Adjunct Associate Professor, School of Nursing SN  
Ph.D. University of California, Los Angeles 1982
- BHARGAVA, RISHI. Instructor, Department of Emergency Medicine SM  
M.D. Indiana Medical School 2001
- BHASKERRAO, SOFIA. Assistant Professor, Department of Medicine SM  
M.B.B.S. Andhra Medical College, India 1994
- BHAT, VENKATESH G. Associate Professor, Department of Psychiatry SM  
M.B.B.S. University of Mysore, India 1979
- BHATT, DILIP R. Assistant Clinical Professor, Department of Pediatrics SM  
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Pharm.D. Purdue University, Lahore, Pakistan 2006
- BIAGGI, ROBERTO E. Adjunct Assistant Professor, Department of Earth and Biological Sciences, ST  
Ph.D. Loma Linda University GS 2002
- BIAN, JIA-YI. Assistant Professor, Department of Anesthesiology SM  
D.O. Chicago College of Osteopathy 2004
- BIANCHI, CHRISTIAN. Associate Professor, Department of Cardiovascular and Thoracic Surgery SM  
M.D. University of Buenos Aires School of Medicine, Argentina 1993
- BIELITZ, IRENE M. Clinical Instructor, Department of Radiation Technology AH  
B.S.N. University of Phoenix 2008
- BIGELOW-PRICE, SHAYNE MICHELINE. Assistant Professor, School of Nursing SN  
M.S.N. University of Phoenix 1998
- BILLIMORIA, PHIROZE E. Professor, Department of Radiology SM  
M.B.B.S. Grant Medical College, Bombay University, India 1951
- BILLOCK, L. CHRISTINE. Associate Professor, Department of Occupational Therapy AH  
Ph.D. University of Southern California 2005
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BINUS, DANIEL L. Clinical Instructor, Department of Psychiatry SM  
M.D. Loma Linda University SM 2006

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M.P.H. Loma Linda University PH 1983  
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M.D. Loma Linda University SM 1981

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M.B.B.Ch. Ain Shams University, Egypt 1981

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M.B.B.Ch. Ain Shams, Cairo, Egypt 1980

BITTON, LUIS GUSTAVO T. Assistant Clinical Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. University of Rio de Janeiro, Brazil 2001

BIVONA-TELLEZ, CHRISTINA M. Assistant Clinical Professor, School of Nursing SN  
M.P.H. University of North Carolina 1983

BLACHARSKI, PAUL A. Associate Clinical Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1976

BLACKBURN, ALLIE K. Assistant Professor, Department of Radiology SM  
M.D. University of Chicago, Pritzker 2001

BLACKWELDER, J. TIMOTHY. Assistant Clinical Professor, Department of Radiology SM  
M.D. Loma Linda University SM 1973

BLAINE, ANDREW C. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. New York University School of Medicine 1989

BLAKELY, ELEANOR A. Adjunct Research Professor, Department of Radiation Medicine SM  
Ph.D. University of Illinois, Urbana-Champaign 1975

BLAKELY, PATRICIA. Assistant Professor, Department of Medicine SM  
M.D. University of Southern California 1988

BLANCO, RICHARD. Instructor, Department of Health Policy and Management PH  
M.B.A. Universidad de Morelos, Mexico 2004  
B.A. Universidad Latinoamericana de Ciencia y Tecnologia, Costa Rica 2000

BLAND, DAVID K. Associate Professor, Department of Medicine SM  
M.B.B.S. University of South Wales, Australia 1976

BLANKENSHIP, JAMES W. Adjunct Professor, Department of Nutrition PH  
Ph.D. University of Wyoming 1969

BLAYLOCK, ANDRE V. Assistant Clinical Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1980

BLAZEN, IVAN T. Professor, School of Religion SR  
Ph.D. Princeton Theological Seminary 1979

BLISS, JESSE C. Assistant Professor, Department of Environmental and Occupational Health, PH  
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BLOCK, BARRY S. Associate Professor, Department of Gynecology and Obstetrics SM  
M.D. Temple University, Philadelphia, Pennsylvania 1975

- BLOMQUIST, INGRID K. Associate Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1981
- BLOOD, ARLIN B. Associate Professor, Department of  
Pediatrics SM  
Ph.D. Loma Linda University GS 2003
- BOBKO, JOSHUA. Instructor, Department of Emergency  
Medicine SM  
M.D. University of Miami School of Medicine 2006
- BOCACHICA, JOHN H. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. State University of New York, Stony Brook 1976
- BOGLE, GARY CLARK. Associate Clinical Professor,  
Department of Periodontics SD  
M.S. Loma Linda University GS 1973  
D.D.S. Loma Linda University SD 1969
- BOHR, THOMAS W. Associate Professor, Department of  
Neurology SM  
M.D. University of California, San Francisco 1984
- BOKHARI, SYED W. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. King Edward Medical College, Pakistan 1991
- BOLING, EUGENE P. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. University of California, Los Angeles 1976
- BOLLA, LISA DAWN. Instructor, Department of Family  
Medicine SM  
M.S. Loma Linda University GS 2002
- BOLTON, STEPHANIE L. Assistant Professor,  
Department of Psychiatry SM  
M.D. Loma Linda University SM 2003
- BONNET, REINER B. Adjunct Professor, Department of  
Preventive Medicine SM  
M.D. Loma Linda University SM 1981
- BONYANPOOR, SHAHNAZ. Assistant Professor,  
Department of Pediatric Dentistry SD  
D.M.D. Shiraz University, Iran 1977
- BORK, JANE N. Associate Professor, Department of  
Pediatrics SM  
M.D. Loma Linda University SM 1979
- BORUT, DANIELLE L. Assistant Clinical Professor,  
Department of Pediatrics SM  
M.D. University of Southern California 1969
- BOSKOVIC, DANILO. Assistant Professor, Department of  
Basic Sciences SM and Department of Earth and  
Biological Sciences ST  
Ph.D. Queen's University at Canada, Ontario, Canada  
1997
- BOSSERT, ELIZABETH ANNE. Associate Dean, Graduate  
Program, School of Nursing SN  
D.N.S. University of California, San Francisco 1990
- BOTIMER, GARY D. Associate Professor, Department of  
Orthopaedic Surgery SM  
M.D. Loma Linda University 1980
- BOULAND, DANIEL L. Associate Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1982
- BOUNDS, JEFFREY ALLEN. Associate Professor,  
Department of Neurology SM  
M.D. Loma Linda University SM 1972
- BOURNE, KENRICK CARLYLE. Assistant Professor,  
Department of Physician Assistant Sciences AH and  
Physician Assistant Program FGS  
Dr.P.H. Loma Linda University PH 1997
- BOWEN, WILLIAM W. Assistant Clinical Professor,  
Department of Surgery SM  
M.D. Loma Linda University SM 1973
- BOWES, LARRY D. Assistant Professor, Department of  
Ophthalmology SM  
M.D. Loma Linda University SM 1971
- BOYD, KENDAL C. Associate Professor, Department of  
Psychology ST and Clinical Psychology Program FGS  
Ph.D. Fuller Theological Seminary 1999

- BOYKO, MICHAEL PETER. Assistant Professor,  
Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1975  
M.P.H. Loma Linda University PH 1975
- BOYLE, BRENDA J. Assistant Professor, School of  
Nursing SN  
M.S.N. University of Phoenix, San Bernardino 2001
- BRACHO, YASMIN. Clinical Instructor, Department of  
Physician Assistant Sciences AH  
M.P.A. Loma Linda University AH 2002
- BRADLEY, BRUCE D. Assistant Professor, Department of  
Physical Therapy AH  
D.P.T.Sc. Loma Linda University AH 2001
- BRAND, JEFFREY J. Assistant Professor, Department of  
Medicine SM  
M.D. Loma Linda University 1999
- BRAND, LEONARD R. Professor, Department of Earth  
and Biological Sciences ST  
Ph.D. Cornell University 1970
- BRANDON, KAREN R. Clinical Instructor, Department of  
Physical Therapy AH  
D.Sc. Loma Linda University AH 2005
- BRANDSTATER, BERNARD JOHN. Professor,  
Department of Anesthesiology SM  
M.B.B.S. Adelaide University, Australia 1951
- BRANDSTATER, MURRAY E. Professor, Department of  
Physical Medicine and Rehabilitation SM and  
Department of Neurology SM  
Ph.D. University of Minnesota 1972  
M.B.B.S. Melbourne University, Australia 1957
- BRANDSTATER, NATHAN R. Associate Professor,  
Department of Radiation Medicine SM  
M.B.A. La Sierra University 2002  
Ph.D. University of California, Los Angeles 1996
- BRANSON, ROY. Professor, School of Religion SR  
Ph.D. Harvard University 1968
- BRANDT, ALLEN L. Associate Clinical Professor,  
Department of Anesthesiology SM  
M.D. College of Medical Evangelists 1952
- BRANDT, JAMES ALLAN. Assistant Professor,  
Department of Clinical Laboratory Science AH  
M.S. Loma Linda University GS 1982
- BRANTLEY, EILEEN J. Assistant Professor, Department  
of Basic Sciences SM and Department of Pharmaceutical  
Sciences SP  
Ph.D. Meharry Medical College, Nashville, Tennessee  
1999
- BRASLOW, LAWRENCE. Associate Clinical Professor,  
Department of Surgery SM  
M.D. Loma Linda University SM 1940
- BRAETHWAITE, RON K. Instructor, Department of Family  
Medicine SM  
M.D. University of Maryland 2002
- BRATLUND, CHRISTINA V. Assistant Professor,  
Department of Communication Sciences and Disorders  
AH  
M.S. Loma Linda University GS 2001
- BRAUER, STANLEY D. Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 1980
- BREIG, NICHOLAS A. Clinical Instructor, Department of  
Oral and Maxillofacial Surgery SD  
D.D.S. University of California, San Francisco 2008
- BRENES, EUGENIO J. Clinical Instructor, Department of  
Restorative Dentistry SD  
D.D.S. Universidad Internacional de las Americas,  
Costa Rica 2003
- BRIGGS, BURTON A. Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 1966
- BRIGGS, ROGER ALLEN. Adjunct Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1973

- BRINEGAR, CHARLES, HOWARD, JR. Emeritus  
Associate Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1963
- BRISTOL, SHIRLEY T. Associate Professor, Nursing  
Program, FGS  
J.D. University of La Verne, Los Angeles, California  
1990
- BRITT, WILLIAM, G. III. Associate Professor, Department  
of Psychiatry SM  
Ph.D. Rosemead Graduate School of Professional  
Psychology 1981
- BRITTON, DOUGLAS R. Assistant Professor, Department  
of Earth and Biological Sciences ST  
Ph.D. University of Wyoming 1998
- BROCKMANN, DOUGLAS C. Assistant Clinical  
Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1978
- BRODEUR, DAVID C. Assistant Professor, Department of  
Restorative Dentistry SD  
M.P.A. Loma Linda University AH 1972  
D.D.S. Loma Linda University SD 1971
- BROOME, DALE R. Associate Clinical Professor,  
Department of Radiology SM  
M.D. University of Missouri, Kansas City 1987
- BROWN, DOUGLAS. Assistant Professor, Department of  
Orthodontics SD  
M.S. Loma Linda University GS 1991  
D.D.S. University of Southern California 1981
- BROWN, GARY W. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Universidad Autonoma de Guadalajara, Mexico  
1980
- BROWN, JAMES A. Assistant Professor, Department of  
General and Trauma Surgery SM  
M.D. Medical University of South Carolina 1978
- BROWN, JENNIFER. Instructor, School of Nursing SN  
M.S.N. Florida International University 2008
- BROWN, JULIA E. Assistant Professor, Department of  
Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 2006  
B.A. California State University, San Bernardino 2002
- BROWN, KEVIN N. Assistant Professor, Department of  
Dental Educational Services SD  
D.D.S. Loma Linda University SD 2007  
B.S. Southern Adventist University 2000
- BROWN, LANCE A. Associate Professor, Department of  
Emergency Medicine SM and Department of Pediatrics  
SM  
M.D. Harvard University 1994  
M.P.H. Harvard University 1994
- BROWN, WILLIAM C. Assistant Professor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Kentucky 2003  
M.B.A. University of Redlands 1982
- BROWN, WILLIAM E. Assistant Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. College of Medical Evangelists 1952
- BROWN-HARRELL, VICKIE D. Assistant Professor,  
Department of Medicine SM  
M.D. University of Iowa 1992
- BRUCE-LYLE, LESLIE A. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.B.Ch.B. University of Ghana Medical School,  
Ghana 1976
- BRUCKNER, EVERT A. Associate Clinical Professor,  
Department of Medicine SM  
M.D. Stanford University 1958
- BRUNO, RICHARD. Assistant Clinical Professor,  
Department of Health Administration PH  
M.B.A. Woodbury University, Burbank, California  
1972
- BRUNT, JOHN C. Professor, School of Religion SR  
Ph.D. Emory University 1978

- BRUTTOMESSO, SAMUEL D. Assistant Clinical Professor, Department of Pediatrics SM  
M.D. Hahneman Medical College, Philadelphia, Pennsylvania 1970
- BRYAN, PATRICK J. Associate Clinical Professor, Department of Radiology SM  
M.B.Ch.B. University College at Galway, Ireland 1967
- BRYSON, JULIE H. Assistant Professor, Department of Family Medicine SM  
M.D. University of California, Davis 1996
- BUCHHEIM, H. PAUL. Professor, Department of Earth and Biological Sciences ST  
Ph.D. University of Wyoming 1978
- BUCHHOLZ, JOHN N. Professor, Department of Physiology and Pharmacology SM  
Ph.D. Loma Linda University GS 1989
- BUCKERT, LINDA SCUDDER. Instructor, Department of Clinical Laboratory Science AH  
B.S. University of Illinois 1980
- BUCKLES, BEVERLY J. Professor, Department of Social Work and Social Ecology ST  
D.S.W. Adelphi University, New York 1989
- BUCKMAN, MICHELLE. Assistant Professor, School of Nursing SN  
M.S.N. St. Louis University, Missouri 1993
- BULL, BERYL HEATHER. Assistant Professor, Department of Physical Medicine and Rehabilitation SM  
M.D. Loma Linda University SM 1994
- BULL, BRIAN S. Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1961
- BULTRON, GILBERTO. Assistant Professor, Department of Pediatrics SM  
M.D. University of Cincinnati College of Medicine 2002
- BUNNELL, WILLIAM P. Professor, Department of Orthopaedic Surgery SM and Department of Pediatrics SM  
M.D. Temple University, Philadelphia, Pennsylvania 1968
- BURCIU, LOREDANA E. Instructor, Department of Periodontics SD  
B.S. Loma Linda University SD 2009  
B.A. Lucian Blaga University, Romania 2001
- BURGOS, AUREA ESCOBAR. Instructor, Department of Nutrition and Dietetics AH  
B.S. Puerto Rico University, Puerto Rico 1955
- BURK, KELLY A. Clinical Instructor, Department of Radiation Technology AH  
B.S. Loma Linda University AH 2003
- BURKE, KENNETH IBER. Emeritus Professor, Department of Nutrition PH and Department of Nutrition and Dietetics AH  
Ph.D. Florida State University 1973
- BURLEY, TODD D. Clinical Professor, Department of Psychology ST  
Ph.D. University of Tennessee, Knoxville 1972
- BURNHAM, GILBERT M. Adjunct Associate Professor, Department of Global Health PH and Department of Preventive Medicine SM  
Ph.D. University of London, England, UK 1988  
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- BURNS, MARGARET ANNE. Associate Professor, School of Nursing SN  
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M.S. College of St. Francis, New York 1989  
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M.D. Loma Linda University SM 1992
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- BUTLER, DIANNE GREIVE. Assistant Professor, Department of Nutrition PH  
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M.A. New York University 1993
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M.D. Loma Linda University SM 1998
- CABRERA, JOYCE A. Instructor, Department of Occupational Therapy AH  
B.S. Loma Linda University AH 1982
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M.A. Andrews University 2004
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M.D. Universidad Peruana Cayetano Heredia, Peru 1990
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- CAO, JEFFREY D. Professor, Department of Pathology and Human Anatomy SM  
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- CAO, CHRISTINA. Assistant Clinical Professor,  
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Pharm.D. University of Florida 2004
- CAO, KURT D. Assistant Professor, School of Nursing SN  
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Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1983
- CARLSON, JOHN P. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Creighton University, Omaha, Nebraska, 1995
- CARNAHAN, CLARENCE E., JR. Clinical Professor,  
Department of Psychiatry SM  
M.D. Loma Linda University SM 1954
- CARNEY, JOHN P. Assistant Clinical Professor,  
Department of Health Administration PH and  
Department of Epidemiology and Biostatistics PH  
M.B.A. University of Phoenix 1992
- CAROTHERS, DAVID N. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1980
- CARPENTER, MARK J. Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1980
- CARR, MARK F. Professor, School of Religion SR  
Ph.D. University of Virginia 1998
- CARRIGG, KAREN GRIGSBY. Associate Professor, School of Nursing SN  
Ed.D. Loma Linda University SE 1988
- CARSON, MARGIE INDRAJIT. Clinical Instructor,  
Department of Nutrition and Dietetics AH  
B.S. Western Michigan University 1995
- CARTER, CAMEO. Assistant Clinical Professor,  
Department of Pediatrics SM  
M.D. Loma Linda University SM 2003
- CARTER, ETHELRED E. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Universidad Autonoma de Guadalajara, Mexico 1968
- CARTER, NORMAN E. Assistant Clinical Professor,  
Department of Orthodontics SD  
M.S. Loma Linda University FGS 2008  
D.D.S. Loma Linda University SD 2005
- CARTER, RONALD L. Professor, Department of Earth and Biological Sciences ST and School of Religion SR  
Ph.D. Loma Linda University GS 1977
- CARTER, SHARISA K. Assistant Professor, Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2003
- CARUSO, JOSEPH MICHAEL. Professor, Department of Orthodontics SD  
D.D.S. Loma Linda University SD 1973
- CARUSO, MICHAEL A. Assistant Professor, Department of Preventive Medicine SM  
M.D. Loma Linda University SM 2000
- CARVALHO, JULIANA. Assistant Professor, Department of Periodontics SD  
B.D.S. Federal University of Minas Gerais, Brazil 1997
- CASELLINI, RENZO CARLO. Clinical Instructor,  
Department of Restorative Dentistry SD  
M.D.T. Swiss Dental Technology College, St. Gallen, Switzerland 1976

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M.S. Western University of Health Sciences, Pomona, California 2007
- CASIANO, CARLOS A. Associate Professor, Department of Biochemistry and Microbiology SM; Assistant Professor, Department of Medicine SM  
Ph.D. University of California, Davis 1992
- CASSIMY, CLYDE P. Assistant Professor, School of Religion SR  
D.Min. Vanderbilt University, Nashville, Tennessee 1981
- CASTANOTTO, DANIELA. Adjunct Associate Research Professor, Department of Biochemistry and Microbiology SM  
Ph.D. University of Messina, Italy 1987
- CASTELINO-PRABHU, SHOBHA L. Assistant Professor, Department of Pathology and Human Anatomy SM  
M.D. Grant Medical College, India 1991
- CASTELL, SALVADOR. Associate Professor, Department of Pathology and Human Anatomy SM  
Ph.D. University of Glasgow, UK 1994
- CASTILLO, ROMEO C. Adjunct Assistant Professor, Department of Family Medicine SM  
M.D. Lyceum Northwestern University, Philippines 1998
- CASTILLO-YETTER, GLENDA M. Clinical Instructor, School of Nursing SN  
B.S. Loma Linda University SN 1979
- CASTRO, DANIEL. Associate Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1986
- CASTRO, YVAN. Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.S.A. Andrews University 2000
- CATALANO, RICHARD D. Professor, Department of General and Trauma Surgery SM and Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1976
- CATALON, SAMUEL R. Assistant Clinical Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1984
- CAVINDER, JUANA R. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.M.D. Southwestern University, Philippines 1973
- CAZARES, JESUS J. Assistant Professor, Department of Health Promotion and Education PH  
M.P.H. Loma Linda University PH 1985  
M.S. Loma Linda University 1984  
M.D. Universidad Autonoma de Guadalajara, Mexico 1976
- CESTERO, GRETCHEN ELIZABETH. Assistant Professor, Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2002
- CHA, CHUL C. Emeritus Associate Professor, Department of Pediatrics SM  
M.D. Seoul National University, Republic of Korea 1961
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D.D.S. Loma Linda University SD 2002
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M.D. Loma Linda University SM 2007
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Ph.D. Ohio State University 2000
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Department of Restorative Dentistry SD  
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Pharmacotherapy and Outcomes Science SP  
M.S. University of Oklahoma 1977
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Department of Emergency Medicine SM  
M.D. Boston University School of Medicine 2002
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Department of Orthodontics SD  
M.S.D. University of the Pacific 1984  
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Medicine SM  
M.D. Franklin University of Medicine and Science of  
Chicago Medical School 1999
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M.D. Loma Linda University SM 1980
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Pediatrics SM and Department of Medicine SM  
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Department of Epidemiology and Biostatistics PH  
Dr.P.H. Loma Linda University PH 1999
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Ph.D. Pennsylvania State University 1980
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M.D. Chicago Medical School 1999
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Emergency Medicine SM  
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Otolaryngology and Head and Neck Surgery SM and  
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Pediatric Dentistry SD  
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M.D. Northeastern Ohio University 1997
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M.D. Harvard University 1980
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M.D. King Edward Medical College, Lahore, Pakistan 2002
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Ph.D. University of California, Berkeley 1993
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M.P.H. Loma Linda University PH 1978
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Ph.D. University of Minnesota 1992  
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Ph.D. University of Texas at Dallas 1986
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M.D. Baylor College of Medicine, Houston, Texas 2005
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D.D.S. University of Milan, Italy 1989  
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M.D. Loma Linda University SM 1991
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M.D. Loma Linda University SM 1977
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Ed.D. La Sierra University 1996
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M.D. Loma Linda University SM 1982
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B.S. Loma Linda University AH 2005
- CHIONG, JUN R. Associate Professor, Department of Medicine SM and Department of Pharmacotherapy and Outcomes Science SP  
M.D. Cebu Institute of Medicine, Philippines 1994
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D.O. Western University of Health Sciences College of Osteopathic Medicine 2002
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M.D. Carole Davilla Medical School 1983
- CHITSAZAN, MORTEZA. Assistant Professor, Department of Medicine SM  
D.O. Western University, Pomona, California 1991
- CHO, EUN-HWI, ELIZABETH. Assistant Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1993
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M.S. University of British Columbia 2004
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M.D. Loma Linda University SM 2006
- CHOE, JOYCE E. Assistant Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1998
- CHOI, DONGRAK. Associate Professor, Department of Radiation Medicine SM  
Ph.D. Yonsei University, Seoul, South Korea 1992
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D.D.S. Loma Linda University SD 2010
- CHOI, VIVIEN, L. Clinical Instructor, Department of Nutrition and Dietetics AH  
M.S. Kansas State University 1984
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M.B.B.S. Yangyon, Mayanmar, Burma 1988
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M.D. Loma Linda University SM 1960

- CHOO, EVELYN BEE IMM. Associate Professor,  
Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1992
- CHOUDHARY, SUNEETA. Assistant Professor,  
Department of Family Medicine SM  
M.B.B.S. RG Kar Medical College Kolkata University,  
Kolkata, India 2001
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Health Studies AH  
M.B.A. Claremont Graduate School 1995
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of General and Trauma Surgery SM  
M.D. University of California, Davis 1994
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Orthopaedic Surgery SM  
B.S. Texas A&M University, School of Veterinary  
Medicine 1985
- CHRISPENS, JERE E. Assistant Clinical Professor,  
Department of Health Information Management AH  
M.A. University of California, Los Angeles 1966
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Department of Oral Diagnosis Radiology and Pathology  
SD  
D.D.S. Loma Linda University SD 1983
- CHRISTISON, CARON SHIZUE. Assistant Clinical  
Professor, Department of Psychiatry SM  
M.D. University of California, San Diego 1982
- CHRISTISON, GEORGE W. Clinical Professor,  
Department of Psychiatry SM  
M.D. University of California, San Diego 1982  
M.Div. Andrews University 1970
- CHU, BRIAN S. Assistant Clinical Professor, Department  
of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of California, San Francisco 2005
- CHU, DEREK C. Assistant Professor, Department of  
Endodontics SD  
D.D.S. Loma Linda University SD 2004
- CHU, GRACE E.H. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2007
- CHU, JENNY F. Assistant Professor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of the Pacific 1995
- CHU, LARINA H. Assistant Professor, Department of  
Physician Assistant Sciences AH  
M.P.A. Loma Linda University AH 2005
- CHUA, KENG L. Assistant Professor, Department of  
Periodontics SD  
D.D.S. University of Melbourne, Australia 1998
- CHUA, SAMNUEL C. Assistant Professor, Department of  
Emergency Medicine SM  
M.D. University of Southern California 1990
- CHUAN, SANDY S. Assistant Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. University of California, Los Angeles 2003
- CHUI, JAMES. Assistant Clinical Professor, Department  
of Plastic and Reconstructive Surgery SM  
M.D. Hahnemann University, Philadelphia,  
Pennsylvania 1993
- CHUN, MELISSA S. Assistant Professor, Department of  
Oral Diagnosis, Radiology, and Pathology SD  
D.D.S. Loma Linda University SD 2002
- CHUN, TEDMUND T. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1981
- CHUNG, DANIEL J. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2005  
B.A. Andrews University 1994
- CHUNG, DEBORAH MICHELLE. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1986

- CHUNG, KWANG-SU S. Adjunct Assistant Professor,  
Department of Restorative Dentistry SD  
M.A. Loma Linda University GS 1981  
D.D.S. Loma Linda University SD 1976
- CHUNG, PAUL Y. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1991
- CHUNG, SEUNG-HWAN. Clinical Instructor,  
Department of Restorative Dentistry SD  
M.S. Chonnam National University, South Korea 2000
- CHUNG, SUNG-MIN. Assistant Clinical Professor,  
Department of Restorative Dentistry SD  
Ph.D. Kyung-Hee University, Korea 1995  
M.S.D. Kyung-Hee University, Korea 1992  
D.M.D. Kyung-Hee University 1986
- CHURCH, CHRISTOPHER A. Associate Professor,  
Department of Surgery SM  
M.D. Loma Linda University SM 1996
- CHURG, WARREN, B. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Johns Hopkins University SM 1975
- CIOVICA, IRENE. Assistant Professor, Department of  
Psychiatry SM  
M.D. Loma Linda University 2003
- CIPTA, ANNE T. Associate Professor, Department of  
Physical Medicine and Rehabilitation SM and  
Department of Anesthesiology SM  
M.D. University of Airlangga, Indonesia 1982
- CLAFFEY, NOEL M. Professor, Department of  
Periodontics SD  
B.D.S. National University of Ireland, Ireland 1974
- CLARK, ALEXANDRA M. Assistant Professor,  
Department of Pediatrics SM  
M.D. Albany Medical College 1999
- CLARK, HELEN E. Clinical Instructor, Department of  
Clinical Laboratory Science AH  
B.A. University of California, Los Angeles 1974
- CLARK, MIKE L. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2004
- CLARK, ROBIN D. Associate Professor, Department of  
Pediatrics SM  
M.D. University of Arizona 1978
- CLARKE, IAN CAMERON. Research Professor,  
Department of Orthopaedic Surgery SM  
Ph.D. University of Strathclyde, Scotland 1972
- CLAUSEN, BENJAMIN LEROY. Adjunct Associate  
Professor, Department of Earth and Biological Sciences  
ST and Earth Science Program FGS  
Ph.D. University of Colorado, Boulder 1987
- CLEEK, N. EUGENE. Assistant Professor, Department of  
General and Trauma Surgery SM  
M.D. Autonomous University of Guadalajara, Mexico  
1975
- CLEGG, WILLIAM R. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1961
- CLEM, KATHLEEN J. Associate Professor, Department of  
Emergency Medicine SM and Department of Pediatrics  
SM  
M.D. Loma Linda University SM 1989
- CLEMENTS, MARK J. Assistant Professor, Department of  
Radiation Technology AH  
M.A. University of Colorado, Boulder 1970
- CLINE, DENIS J. Assistant Clinical Professor, Department  
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M.D. Loma Linda University SM 1992
- CLINTON, ROBERT A. Assistant Professor, Department  
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M.D. University of Wisconsin School of Medicine  
1982
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M.D. Meharry Medical College, Nashville, Tennessee 1977
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B.S. Loma Linda University SD 2005
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M.D. Ohio State University 2004
- COEN, MICHAEL J. Adjunct Associate Professor, Department of Orthopaedic Surgery SM  
M.D. University of Nebraska Medical Center 1990
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M.D. Loma Linda University SM 1953
- COHEN, JOSEPH I. Assistant Clinical Professor, Department of Pathology and Human Anatomy SM  
M.D. Medical College of Wisconsin 1986
- COJOCARU, TRAIAN T. Associate Professor, Department of Neurosurgery SM  
M.D. Facultatea de Medicina IMF/University of Bucharest, Romania 1972
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M.D. Emory University School of Medicine 2004
- COLBURN, KEITH K. Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1970
- COLE, BRADLEY ALAN. Assistant Professor, Department of Neurology SM  
M.D. Loma Linda University SM 1992
- COLE, DOROTHEE. Assistant Professor, Department of Neurology SM  
M.D. Loma Linda University SM 1994
- COLEMAN, MARLENE M. Assistant Clinical Professor, Department of Pediatrics SM  
M.D. University of California, Irvine 1970
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D.O. College of Osteopathic Medicine, Iowa 1980
- COLLINS, NORBERTO E. Assistant Clinical Professor, Department of Surgery SM  
M.D. Universidad de Córdoba, Andalusia, Spain 1973
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M.D. McMaster University, Ontario, Canada 1978
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B.A. Jones International University, Chicago, Illinois 2006  
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M.S.P.H. Loma Linda University PH 1992
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D.D.S. University of St. Joseph, Lebanon 1977
- DAI, QIANG GUO. Assistant Research Professor, Department of Orthopaedic Surgery SM  
Ph.D. University of Iowa 1990

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M.D. University of Saigon Faculty of Medicine, South Vietnam 1974
- DAILEY, RONALD JAMES. Associate Professor, Department of Dental Educational Services SD  
Ph.D. University of Southern California 1994
- DAKA, SMITHA. Assistant Professor, Department of Medicine SM  
M.B.B.S. Rajiv Gandhi University, India 2002
- DAMODARAN, CHITRA. Assistant Professor, Department of Medicine SM  
M.D. University of Madras, India 1982
- DAN, NICOLAE G. Adjunct Assistant Professor, Department of Nutrition PH  
M.D. University of Medicine and Pharmacy, Bucharest 1990
- DANDAMUDI, NAGAMANI. Assistant Professor, Department of Medicine SM  
M.B.B.S. SV Medical College, India 1981
- DANESH, SID A. Assistant Clinical Professor, Department of Physician Assistant Sciences AH  
M.D. Tehran University School of Medicine, Iran 1979
- DANG, DAVID N. Assistant Professor, Department of Radiology SM  
M.D. University of California, San Diego 2003
- DANIEL, ALTHEA P. Assistant Professor, Department of Pediatrics SM  
M.D. University of California, Los Angeles/Drew Medical School 1988
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M.D. Loma Linda University SM 1991
- DAOUD, HASAN A. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2010
- DARNELL, T. ALLAN. Assistant Professor, Department of Global Health PH  
M.P.H. Loma Linda University PH 1998  
M.D. Loma Linda University SM 1995
- DART, G. CHARLES, JR. Assistant Professor, Department of Allied Health Studies AH  
M.B.A. La Sierra University 1994
- DARWANTO, AGUS. Instructor, Department of Basic Sciences SM  
Ph.D. Kobe University, Japan 2004
- DAS, AMITAVA. Assistant Research Professor, Department of Basic Sciences and Department of Medicine SM  
Ph.D. University of Lucknow, India 2003
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Ph.D. Ancana University 1999  
M.D. Ahwaz University of Medical Sciences, Iran 1992
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D.D.S. Loma Linda University SD 1993
- DAVIDIAN, JAMES L. Associate Clinical Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1970
- DAVIDIAN, MARILYN HOPKINS. Assistant Professor, Department of Health Information Management AH  
M.A. Claremont Graduate School 1997
- DAVIDIAN, RICHARD D. Professor, Division of General Studies ST  
Ph.D. Northwestern University, Illinois 1986
- DAVIDSON, MICHAEL JAMES. Assistant Professor, Department of Physical Medicine and Rehabilitation SM  
B.S. California State University, Dominguez Hills 1992

- DAVIS, CARRIE E. Assistant Professor, Department of  
Emergency Medicine SM  
M.D. Rosalind Franklin University, Illinois 2004
- DAVIS, CAROL A.L. Assistant Professor, Department of  
Radiation Technology AH  
M.A. Loma Linda University GS 1997
- DAVIS, JOSEPH V. III. Assistant Professor, Department of  
General and Trauma Surgery SM  
D.O. Texas College of Osteopathic Medicine, Des  
Moines, Iowa 1982
- DAVIS, KATHERINE GLADKOWSKI. Assistant  
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M.S. Loma Linda University 2006
- DAVIS, KIMBERLY D. Adjunct Associate Professor,  
Department of Ophthalmology SM  
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Maryland 1996
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Pharmacotherapy and Outcomes Science SP  
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Department of Restorative Dentistry SD  
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D.D.S. Loma Linda University SD 1988
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Physical Therapy AH and Physical Therapy Program  
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- DAVIS, SCOTT M. Clinical Instructor, Department of  
Psychiatry SM  
M.D. Boston University School of Medicine 1991
- DAVIS, WILLIE L., JR. Associate Professor, Department of  
Pharmaceutical Sciences SP  
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- DBOUK, HASAN M. Assistant Clinical Professor,  
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B.D.S. Beirut Arab University 2002
- DEAN, JEFFREY S. Assistant Professor, Department of  
Oral and Maxillofacial Surgery SD  
D.D.S. Creighton University, Omaha, Nebraska 1991  
M.D. University of Texas 1995
- DeCARVALHO, LORIE T. Associate Clinical Professor,  
Department of Psychiatry SM  
Ph.D. Loma Linda University GS 2003
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B.S. Loma Linda University SD 1995
- DE LA PENA, WENDY L. Assistant Professor,  
Department of Pediatrics SM  
M.D. University of Wisconsin 2000
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Physiology and Pharmacology SM  
Ph.D. University of California, Davis 1987
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Department of Cardiovascular and Thoracic Surgery  
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M.D. Cornell University Medical College 1981
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Radiation Technology AH  
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Neurology SM  
M.D. Loma Linda University SM 2003

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M.D. Loma Linda University SM 1975
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Ph.D. University of Colorado, Boulder 1993
- DEMOS, DEBRA S. Assistant Professor, Department of Pediatrics SM  
M.D. Autonomous University of Guadalajara 1981
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B.D.S. Bharati Vidyapeeth University, India 2004
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B.D.S. Bharati Vidyapeeth University, India 2004
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B.D.S. College of Dental Surgery, Manipal, India 1990
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M.S.N. University of California, Los Angeles 1991
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M.D. Loma Linda University SM 1974
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D.D.S. University of California, Los Angeles 1995
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- DICELLO, JOHN F. Professor, Department of Radiation Medicine SM  
Ph.D. Texas A&M University 1967
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- DICKSONO-GILLESPIE, LAURIE. Assistant Professor, Department of Pediatrics SM  
Ph.D. McGill University, Montreal, Canada 2005
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D.H.Sc. Loma Linda University PH 1975  
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M.D. Johns Hopkins University 2001
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Pediatrics SM  
M.D. Ross University, New York 2002
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Anesthesiology SM and Assistant Professor of Nursing  
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1978
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M.D. University of California, Los Angeles 1974
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Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1982
- DOUGLAS, TERRY D. Associate Professor, Department of  
Communication Sciences and Disorders AH  
Ph.D. The University of Memphis 1994
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Ophthalmology SM  
M.D. Loma Linda University SM 2003
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M.S.L.S. University of Southern California 1978
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Department of Psychology ST; Assistant Clinical  
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Rehabilitation SM  
M.P.H. Loma Linda University PH 1994  
Ph.D. United States International University, Nairobi,  
Kenya 1990
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M.D. Georgetown University, Washington D.C. 1961
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Family Medicine SM  
M.D. University of California, Davis 1998

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Ph.D. University of Florida 1980
- DUERKSEN-HUGHES, PENELOPE J. Associate Professor, Department of Biochemistry and Microbiology SM  
Ph.D. Emory University, Atlanta, Georgia 1987
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B.S. Loma Linda University SD 1981
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M.D. Loma Linda University SM 1991
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M.D. Loma Linda University SM 1962
- DUNBAR, SABINE S. Assistant Professor, School of Nursing SN  
M.S. Central Queensland University, Australia 2002
- DUNBAR, STEPHEN G. Associate Professor, Department of Earth and Biological Sciences ST  
Ph.D. Central Queensland University, Australia 2002
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M.D. Texas A&M University 2005
- DUONG, CHRISTINE A. Assistant Professor, Department of Medicine SM  
M.D. Ross University, Dominica, West Indies 2000
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D.D.S. Loma Linda University SD 1988
- DUPPER, GILBERT L. Associate Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1967
- DURAN, GRACIELA G. Assistant Professor, Department of Dental Educational Services SD  
B.S. Loma Linda University SD 2007
- DUS, IVAN. Assistant Professor, Department of Orthodontics SD  
M.D. University of Padua, Italy 1980
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M.D. Loma Linda University SM 1998
- DYJACK, ANGELA B. Clinical Professor, Department of Environmental and Occupational Health PH  
M.P.H. Loma Linda University PH 1981
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Dr.P.H. University of Michigan 1996
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M.P.H. Loma Linda University PH 1990  
M.D. Loma Linda University SM 1986
- EARLL, ART CHARLES. Assistant Professor, School of Religion SR  
M.Div. Andrews University 1971
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M.D. Loma Linda University SM 1998
- EDDERKAOU, BOUCHRA. Assistant Research Professor, Department of Medicine SM  
Ph.D. Catholic University of Louvain, Belgium 1995
- EDDOW, CHRISTINE MARIE. Clinical Instructor, Department of Physical Therapy AH  
M.P.T. University of Southern California 1990

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M.S.N. California State University, Dominguez Hills 1995
- EDWARDS, LINCOLN PAUL. Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2009  
Ph.D. Loma Linda University GS 1998
- EDWARDS, NEAL C. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2007
- EFTIMIE, LIVIU FLORIAN. Assistant Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1993  
D.M.D. Dental School Tg at Mures, Romania 1989
- EGELBERG, JAN H. Emeritus Professor, Department of Periodontics SD  
L.D.S. Royal Dental School, Malmö, Sweden 1960
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Ph.D. Andrews University 1999
- EGUCHI, JIMMY H. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 2002
- EICHENBERG, BRIAN J. Assistant Clinical Professor, Department of Plastic and Reconstructive Surgery SM  
M.D. Georgetown School of Medicine 1994
- EJIKE, JANETH C. Associate Professor, Department of Pediatrics SM  
M.B.B.S. University of Lagos, Nigeria 1994
- EKE, CLIFFORD C. Assistant Clinical Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1992
- ELATHAMNA, MOHAMED R. Adjunct Instructor, Department of Radiation Technology AH  
B.S.C. King Saud University, Saudi Arabia 1992
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M.D. Loma Linda University SM 1957
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M.D. Loma Linda University SM 1979
- ELIAS, INTITHAR S. M. Assistant Professor, Department of Allied Health Studies AH  
M.S. Loma Linda University GS 1979
- EL-KABANY, MOHAMED M. Assistant Professor, Department of Medicine SM  
M.B.B. Ch. Cairo University, Egypt 1984
- ELLOWAY-SONG, TAMARAH R. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1990
- ELLSTROM, MERVIN L. Assistant Clinical Professor, Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 1975  
M.P.H. Loma Linda University PH 1975
- ELMENDORF, EDWARD NEIL III. Associate Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1973
- ELO, JEFFREY A. Assistant Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Indiana University 2002
- ELSHERIF, ISMAIL I. Assistant Professor, Department of Endodontics SD  
B.D.S. Cairo University, Egypt 1979
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D.D.S. University of Pavia, Lombardy, Italy 1986
- EMMERSON, WILLIAM JOHN. Assistant Professor, Department of Orthodontics SD  
D.D.S. Loma Linda University SD 1980
- ENDRESS, ERIN L. Associate Clinical Professor, Department of Physician Assistant Sciences AH  
M.P.A. St. Francis University, Pennsylvania 2007

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Medicine SM  
D.D.S. Loma Linda University SD 1997
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M.D. University of Oslo, Norway 1983
- ENGBERG, DANIEL L. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Loma Linda University SM 1976
- ENGLAND, STEPHEN G. Assistant Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Baylor College of Medicine, Texas 1972
- ENGLANDER, DAVID M. Assistant Professor,  
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Occupational Therapy AH  
M.P.H. Loma Linda University PH 1984
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1998
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B.S. Loma Linda University 1986
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Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2008  
B.A. Southern Adventist University 2004
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Ph.D. Cornell University 1992
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Anatomy Program FGS  
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Alvarado, Venezuela 1989
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M.S. Loma Linda University 2007
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M.S. Loma Linda University 2003
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Medicine SM and Department of Health Administration  
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M.D. University of California, San Diego 1990
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Ph.D. University of Minnesota 1973
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- FANOUS, YVONNE F. Associate Professor, Department of Pediatrics SM  
M.D. Cairo University, Egypt 1973
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M.D. New Jersey Medical School, Newark 1995
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- FARGO, WISE N. Assistant Professor, Department of Pediatrics SM  
M.D. University of Baghdad, Iraq 1967
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D.M.D. Azad University, Tehran, Iran 1999
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M.B.B.S. Khyber Medical College, Pakistan 1979
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Ph.D. California School of Professional Psychology 1988
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- FLEMING, WESLEY E. Assistant Professor, Department  
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M.D. Loma Linda University SM 1998
- FLETCHER, BRYAN D. Assistant Professor, Department  
of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 2008
- FLETCHER, HANSEL M. Associate Professor,  
Department of Biochemistry and Microbiology SM,  
Department of Surgery SM; Professor, Department of  
Periodontics SD  
Ph.D. Temple University, Philadelphia, Pennsylvania  
1990
- FLETCHER, MADELYN LUCILLE. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2000
- FLOREA, NAOMI R. Assistant Professor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 2001
- FLORES, CHRISTOPHER V. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. University of California, Irvine 1990
- FLORES, DANIEL ALEXANDER. Assistant Professor,  
Department of Orthodontics SD  
M.S. Loma Linda University GS 1988  
D.D.S. Loma Linda University SD 1982
- FLORES, LISA D. Assistant Professor, Department of  
Family Medicine SM  
M.D. Loma Linda University SM 1998
- FLORES, MARIO M. Assistant Professor, Department of  
Periodontics SD  
D.D.S. University of Mexico, Puebla State, Mexico  
1977
- FLORIDIA, ROSARIO. Instructor, Department of Surgery  
SM  
M.D. University of Colorado 1997
- FOGEL, TRAVIS G. Assistant Professor, Department of  
Physical Medicine and Rehabilitation SM  
Ph.D. Michigan State University at East Lansing 1999
- FOGELSON, STEPHANIE K. Assistant Professor,  
Department of Dermatology SM  
M.D. Mount Sinai, New York City 2004
- FOLEY, JAMES A. Assistant Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. Medical College of Wisconsin 2003
- FONG, SHIRLEY A. Assistant Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. St. Louis University, Missouri 1998
- FOO, RON S. Assistant Clinical Professor, Department of  
Psychiatry SM  
M.D. Loma Linda University SM 1998
- FORDE, RONALD E. Assistant Professor, Department of  
Dental Educational Services SD  
D.D.S. Loma Linda University SD 1983
- FORLAND, STEVEN C. Associate Professor, Department  
of Pharmacotherapy and Outcomes Science SP and  
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Pharm.D. University of California, San Francisco 1974

- FORRESTER, BONNIE JO. Associate Professor,  
Department of Physical Therapy AH  
D.P.T.Sc. Loma Linda University AH 2002
- FORRESTER, TERRENCE JOHN. Associate Professor,  
Department of Social Work and Social Ecology ST  
M.S.S.W. University of Louisville 1979
- FOSTER, GARY PAUL. Associate Professor, Department  
of Medicine SM  
M.D. Loma Linda University SM 1988
- FOSTER, GLENN L. Emeritus Professor, Department of  
Medicine SM  
M.D. College of Medical Evangelists 1957
- FOULSTON, R. MICHAEL. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1986
- FOWLER, KENNETH A. Assistant Professor, Department  
of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1984
- FOX, CURTIS A. Professor, Department of Counseling  
and Family Science ST  
Ph.D. University of Tennessee, Knoxville 1997
- FRADIN-READ, DOMINIQUE. Assistant Clinical  
Professor, Department of Preventive Medicine SM  
M.D. Free University of Brussels, Belgium 1980
- FRANCISCO, BENJAMIN. Assistant Professor,  
Department of Medicine SM  
M.D. University of the East , Manila, Philippines 2003
- FRANCO, DANIEL. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Autonomous University of Guadalajara, Mexico  
1979
- FRANCO, EDSON S. Assistant Professor, Department of  
General and Trauma Surgery SM  
M.D. University of California, San Diego 1994
- FRANK, BEVERLY B. Adjunct Associate Professor,  
Department of Psychology ST  
Psy.D. Pepperdine University 1990
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Radiation Technology AH  
B.S. Nowrosjee Wadia College, Poona, India 1964
- FRANK, ROBERT JOHN. Lecturer, Department of  
Endodontics SD  
D.D.S. Ohio State University 1972
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Restorative Dentistry SD  
D.D.S. University of California, Los Angeles 1994
- FRASER, GARY E. Professor, Department of Medicine  
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- FRAUSTO, TERESA. Assistant Professor, Department of  
Psychiatry SM  
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Department of Social Work and Social Ecology ST and  
Social Policy and Social Research Program FGS  
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- FREIER RANDALL, MARY-CATHERIN. Professor,  
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Pediatrics SM and Department of Health Promotion and  
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School 1989
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Orthodontics SD  
M.S. Loma Linda University GS 1964  
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M.D. University of Miami 1966
- FRIEDRICHSEN, ERIC J. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1987
- FRIESEN, DEBRA K. Assistant Professor, Department of  
Dental Hygiene SD  
B.S. Loma Linda University SD 1993
- FRITZ, HELMUTH F. Assistant Clinical Professor,  
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M.D. Loma Linda University SM 1973
- FRIVOLD, GEIR PAUL. Assistant Professor, Department  
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M.D. Loma Linda University SM 1981  
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B.S. Pacific Union College 1965
- FRY-BOWERS, EILEEN. Assistant Professor of Nursing  
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J.D. Whittier Law School, Costa Mesa, California 2006
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- FRYKMAN, GARY K. Clinical Professor, Department of  
Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1965
- FUENTES, J. PAUL. Assistant Professor, Department of  
Periodontics SD  
D.D.S. University of California, Los Angeles 1981
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SP  
Pharm.D. University of the Pacific 1984
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B.S. Andrews University 1998
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Pediatric Dentistry SD  
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General and Trauma Surgery SM  
M.D. New York Medical College 2004
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- GABRIEL, EDWARD. Assistant Clinical Professor,  
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M.D. UHS/Chicago Medical School 1987
- GAEDE, DONN P. Assistant Professor, Department of  
Global Health PH  
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- GAGE, ARTHUR DALE. Assistant Professor, Department  
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- GALARNYK, IHOR A. Associate Clinical Professor,  
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GALLOWAY, MEGHAN M. Instructor, Department of  
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GARBEROGLIO, CARLOS A. Professor, Department of  
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M.D. National University of Rosario 1973

GARBEROGLIO, MARIA C. Assistant Professor,  
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M.D. National University of Rosario, Argentina 1974

GARCIA, GABRIELA ELIZABETH. Assistant Professor,  
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D.D.S. Universidad Nacional Autónoma de  
Honduras, Honduras 1998

GARCIA, HENRY ALBERT. Assistant Professor,  
Department of Physical Therapy AH  
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GARDINER, GEOFFREY A., SR. Emeritus Professor,  
Department of Radiology SM  
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GARRETT, CONSTANCE L. Assistant Clinical Professor,  
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M.S. Case Western Reserve University, Cleveland,  
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GARRISON, ROGER C. Assistant Professor, Department  
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Osteopathic Medicine 1999

GASTELUM, CHRISTIAN. Assistant Professor,  
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M.D. University of Southern California 1999

GATLING, JASON W. Assistant Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 2002

GATTUSO, KATHERINE M. Assistant Professor,  
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B.A. Clarion State University, Pennsylvania 1975

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Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2005

GEACH, JONATHAN B. Instructor, Department of  
Anesthesiology SM  
M.D. Loma Linda University 2005

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Medicine 1955

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Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1970
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Radiology SM  
M.D. University of Tennessee Graduate School of  
Medicine 2003
- GERLING, WILLIAM L. Assistant Professor, Department  
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M.D. Loma Linda University SM 1976
- GERONA, ALMA. Assistant Professor, Department of  
Medicine SM  
M.D. Xavier University 1999
- GESLANI, BEVAN A. Assistant Professor, Department of  
Medicine SM  
M.D. Far Eastern University, Philippines 1981
- GHALY, AZIZ S. Instructor, Department of  
Cardiovascular and Thoracic Surgery SM  
M.D. Ain Shams University, Egypt 1990
- GHAMSARY, MARK M. Associate Professor, Department  
of Epidemiology and Biostatistics PH  
Ph.D. University of California, Riverside 1997
- GHARRAPH, HUSSAM. Assistant Professor, Department  
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D.D.S. Loma Linda University SD 2003
- GHAZAL, ELIZABETH A. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1990
- GHAZAL, RONNY G. Assistant Clinical Professor,  
Department of Orthopedic Surgery SM  
M.D. Loma Linda University SM 1987
- GHEBREMEDHIN, ABIEL. Associate Professor,  
Department of Radiation Medicine SM  
Ph.D. Baylor University, Texas 1995
- GHEEN, CORY. Instructor, Department of Nutrition and  
Dietetics AH  
B.P.S. The Culinary Institute of America 1999
- GHONIM, MOHAMMED. Assistant Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of Southern California 2003
- GIACOPUZZI, GUY G. Associate Professor, Department  
of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1980
- GIANG, DANIEL W. Professor, Department of Neurology  
SM  
M.D. Loma Linda University SM 1983
- GIBSON, DESMOND D. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1978
- GIBSON, DOROTHY W. Clinical Instructor, Department  
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B.S. Pacific Union College 1966
- GIBSON, L. JAMES, JR. Adjunct Assistant Professor,  
Department of Earth and Biological Sciences ST  
Ph.D. Loma Linda University GS 1984
- GIEBEL, ARTHUR W. Adjunct Assistant Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1991
- GIEBEL, HERBERT N. Adjunct Assistant Professor,  
Department of Family Medicine SM  
M.D. Loma Linda University SM 1988
- GILSON, GEORGE J. Associate Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Northwestern University, Illinois 1970
- GIERZ, MONIKA S. Associate Professor, Department of  
Psychiatry SM  
M.D. Medical School University of Wuerzburg,  
Germany 1978
- GILBERT, BRADLEY PAUL. Assistant Clinical Professor,  
Department of Health Administration PH  
M.D. University of California, San Diego 1983

- GILBERT, DAVID H. Assistant Clinical Professor,  
Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1995
- GILBERT, MONIQUE. Instructor, Department of Clinical  
Laboratory Science AH  
B.S. Loma Linda University AH 1989
- GILEWSKI, MICHAEL J. Associate Professor, Department  
of Physical Medicine and Rehabilitation SM  
Ph.D. University of Southern California, Los Angeles  
1983
- GILLESPIE, ANNE MARIE. Assistant Clinical Professor,  
School of Nursing SN  
M.S.N. Boston University 1981
- GIMBEL, HOWARD V. Professor, Department of  
Ophthalmology SM  
M.P.H. Loma Linda University PH 1978  
M.D. Loma Linda University SM 1960
- GILSON, GEORGE J. Associate Professor, Department of  
Gynecology and Obstetrics SM  
M.D. Northwestern University 1970
- GIORDANO, EUGENIA. Assistant Professor, Department  
of Health Administration PH  
M.P.H. Loma Linda University PH 2000  
M.D. La Plata National University, Argentina 1985
- GIORDANO, OSCAR. Associate Professor, Department of  
Health Administration PH  
M.P.H. Loma Linda University PH 2000  
M.D. La Plata National University, Argentina 1978
- GIRGIS, RAAFAT W. Assistant Professor, Department of  
Psychiatry SM  
M.D. Cairo University, Egypt 1981
- GIRGUIS, MARK S. Assistant Professor, Department of  
Radiology SM  
M.D. Cairo University School of Medicine 1981
- GLASGOW, CYNTHIA J. Instructor, Department of  
Family Medicine SM  
M.S.N. Azusa Pacific University 2004
- GLAVAZ, GERALD A. Assistant Professor, Department of  
Physician Assistant Sciences AH  
M.P.A. University of Nebraska 2003
- GLOSSBRENNER, DAVID F. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. University of Cincinnati 1981
- GNANADEV, APPANNAGARI. Clinical Professor,  
Department of Cardiovascular and Thoracic Surgery  
SM  
M.D. Kurnool Medical College, India 1972
- GOBER, CARLA GAYLE. Assistant Professor, School of  
Religion SR  
Ph.D. Emory University 2008
- GODFREY, THOMAS E. Emeritus Associate Professor,  
Department of Medicine SM  
M.S. University of Minnesota 1961  
M.D. Loma Linda University SM 1957
- GODGES, JOSEPH JOHN. Assistant Professor,  
Department of Physical Therapy AH  
D.P.T. Loma Linda University AH 2001
- GOEL, STEPHEN T.T. Assistant Professor, Department of  
Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1986
- GOGINENI, HYMA P. Assistant Professor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. Ferris State University, Michigan 2000
- GOLD, PHILIP MICHAEL. Professor, Department of  
Medicine SM  
M.D. University of California, Los Angeles 1962
- GOLDEN, ALYSSA J. Assistant Professor, Department of  
Dental Hygiene SD  
B.S. Loma Linda University SD 1995
- GOLDEN, GARY J. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1977

- GOLDSTEIN, MITCHELL R. Associate Professor,  
Department of Pediatrics SM  
M.D. University of Miami 1988
- GOLKAR, LINDA. Assistant Professor, Department of  
Medicine SM  
M.D. University of Southern California 1993
- GOLLES, DEE. E. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1980
- GOLLIN, GERALD. Professor, Department of General  
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SM  
M.D. University of California, San Francisco 1987
- GOLLIN, YVONNE G. Assistant Professor, Department of  
Gynecology and Obstetrics SM  
M.D. University of California, San Francisco 1987
- GOMES, MARSHALL E. Assistant Professor, Department  
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D.D.S. Loma Linda University SD 1985
- GOMEZ, NEPHTALI R. Instructor, Department of  
Surgery SM  
M.D. Loma Linda University SM 2004
- GONZAGA, ALMA ALMARIO. Assistant Professor,  
Department of Medicine SM  
M.D. Far Eastern University, Philippines 1979
- GONZAGA, EDUARDO J. Instructor, Department of  
Medicine SM  
M.D. Far Eastern University, Philippines 1979
- GONZALEZ, WILBERTH. Associate Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1967
- GOODACRE, CHARLES J. Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1971
- GOODLOW, GERALD ROSS. Assistant Clinical Professor,  
Department of Physical Medicine and Rehabilitation SM  
M.D. Wayne State University, Michigan 1984
- GOODWIN, HOWARD T. Adjunct Professor, Department  
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Ph.D. University of Kansas 1990
- GOODRICH, SHARON ANNE. Assistant Clinical  
Professor, School of Nursing SN  
M.A. University of Redlands 1980
- GORDON, BRENT. Assistant Professor, Department of  
Pediatrics SM  
M.D. The Chicago Medical School at Rosalind  
Franklin University 2002
- GORENBERG, ALAN E. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1986
- GORENBERG, DANIEL. Associate Clinical Professor,  
Department of Medicine SM  
M.D. University of Illinois 1955
- GOSS, JAMES F. Assistant Professor, Department of  
Cardiopulmonary Sciences AH  
M.H.A. Chapman University, Orange County,  
California 2006
- GOSS, SYLVIA M. Assistant Librarian, Library Faculty  
M.L.S. University of Southern California 1985
- GOYAL, RAVI. Assistant Research Professor, Department  
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Ph.D. University of Mississippi 2007
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Department of Pediatric Dentistry SD  
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- GRAMES, BARRY S. Assistant Clinical Professor,  
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M.D. Loma Linda University SM 1990
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Emergency Medicine SM  
M.D. Loma Linda University SM 1994

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Counseling and Family Science ST  
University of British Columbia, Vancouver 1981

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- HAERICH, PAUL E. Professor, Department of Psychology ST  
Ph.D. University of Florida 1989
- HAGGLOV, CALVIN G. Assistant Professor, Department of Family Medicine SM  
M.D. University of Manitoba, Winnipeg, Canada 2002
- HAGLUND, ANDREW T. Assistant Professor, Department of Environmental and Occupational Health PH  
M.S. University of Redlands 2008
- HAHN, HARVEY S. Associate Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1994
- HAIIVY, JACOB. Assistant Clinical Professor, Department of Oral and Maxillofacial Surgery SD  
M.D. Mt. Sinai School of Medicine, New York 1997  
D.D.S. New York University, College of Dentistry 1994
- HALAS-LIANG, MELISSA. Clinical Instructor, Department of Nutrition and Dietetics AH  
M.A. University of Redlands 1994
- HALL, B. DANIEL. Associate Professor, Department of Restorative Dentistry SD  
D.D.S. University of San Francisco 1961
- HALL, DONALD R. Adjunct Assistant Professor, Department of Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 1978
- HALL, RAYMOND G, JR. Associate Professor, Department of Physiology and Pharmacology SM  
Ph.D. Loma Linda University FGS 1968
- HALL, SUSAN L. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1998  
Ph.D. Loma Linda University FGS 1996
- HALLER-WADE, TINA M. Assistant Clinical Professor, Department of Family Medicine SM  
D.O. Kirsville College of Osteopathic Medicine, Missouri 1990
- HALLSTROM, HADAR P. G. Adjunct Associate Professor, Department of Periodontics SD  
D.D.S. University of Lund, Faculty of Odontology, Sweden 1977
- HALSTEAD, LINDA G. Assistant Professor, Department of Health Promotion and Education PH  
M.A. University of California, Riverside 1979
- HALVERSON, JANET E. Instructor, Department of Pediatrics SM  
M.S.N. University of California, Los Angeles 1981
- HAMADA, DEBRA LYNN. Instructor, Department of Health Information Management AH  
A.B. College of St. Scholastica, Minnesota 1984
- HAMADA, NORMAN M. Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of the Pacific 1980
- HAMANN, CURTIS P. Assistant Clinical Professor, Department of Dental Educational Services SD  
M.D. Loma Linda University SM 1988

- HAMERSLOUGH, RHONDA D. Adjunct Assistant Professor, Department of Dental Hygiene SD  
M.A. Azusa Pacific University 2000
- HAMMER, JERROLD. Assistant Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1978
- HAMMOND, PAUL G. Associate Clinical Professor, Department of Medicine SM  
M.B.B.S. University of Oxford, England 1970
- HANDYSIDES, DANIEL G. Assistant Professor, Department of Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 2010
- HANDYSIDES, ROBERT A. Associate Professor, Department of Endodontics SD and Endodontics Program FGS  
D.D.S. Loma Linda University SD 1993
- HANSEN, KENT A. Assistant Professor, Department of Dental Educational Services SD  
J.D. Willamette University, Oregon 1979
- HARDER, SHERI L. Assistant Professor, Department of Radiology SM  
M.D. University of Saskatchewan, Canada 1994
- HARDESTY, JEFFREY STEVEN. Assistant Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1980
- HARDESTY, ROBERT A. Clinical Professor, Department of Surgery SM  
M.D. Loma Linda University SM 1978
- HARDIN, STEVEN BARTON. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1985
- HARDING, GEORGE T. IV. Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 1953
- HARDY-PETERSON, MARCELLA. Clinical Instructor, Department of Physician Assistant Sciences AH  
M.S.N. Azusa Pacific University 1992
- HARMS, LAWRENCE A. Assistant Clinical Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1983
- HARPER, BRENT A. Clinical Instructor, Department of Physical Therapy AH  
D.P.T. Western University of Health Sciences, Pomona, California 2005
- HARRIS, DAVID P. Assistant Professor, Division of General Studies ST  
Ph.D. Claremont Graduate University 1995
- HARRIS, LISA M. Clinical Instructor, Department of Nutrition and Dietetics AH  
M.S. California Poly University-Pomona 1995
- HARRIS, MELVYN LEWIS. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of Oklahoma Medical Center 1977
- HARRIS, SHEILA ANN. Assistant Professor, Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 1998
- HARRISON, JAMES A. Associate Clinical Professor, School of Nursing SN  
M.D. Medical College of Wisconsin 1983
- HART, DYNNETTE. Associate Professor, School of Nursing ST  
Dr.P.H. Loma Linda University PH 1994
- HART, ELAINE A. Assistant Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 2000
- HART, KENNETH W. Assistant Professor, Department of Global Health PH and Department of Preventive Medicine SM  
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HARTMAN, RICHARD E. Associate Professor, Department of Psychology ST

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HASANIYA, NAHIDH W. Associate Professor, Department of Cardiovascular and Thoracic Surgery SM

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HASHMI, AIJAZ. Associate Professor, Department of Pediatrics SM

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HASSO, ANTON. Clinical Professor, Department of Radiology SM

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HAYCOCK, KORBIN H. Assistant Professor, Department of Emergency Medicine SM

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HAYES, WILLIAM K. Professor, Department of Earth and Biological Sciences ST

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HAYNES-LEE, JOAN E. Assistant Professor, Department of Family Medicine SM

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HAYTON, RYAN. Assistant Professor, Department of Surgery SM

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HAYTON, WILLIAM A. Instructor, Department of Psychiatry SM

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HAYWOOD, L. JULIAN. Clinical Professor, Department of Medicine SM

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HEGSTAD, DOUGLAS R. Associate Professor, Department of Medicine SM

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HEINE, NANCY J. Assistant Professor, Department of Medicine SM

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HEINRICH, BRUCE SCOTT. Assistant Professor,  
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HEINRICH, CHERRIE A. Assistant Professor,  
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HEISKELL, LAWRENCE E. Assistant Clinical Professor,  
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HEISLER, WILLIAM HENRY. Professor, Department of  
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HENKIN, JEFFREY M. Associate Professor, Department  
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HERBOZO, SYLVIA. Assistant Professor, Department of  
Psychology ST  
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HERRICK, KEVIN RAY. Assistant Clinical Professor,  
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HERRING, ROSA PATRICIA. Associate Professor,  
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HERRINGTON, VALERIE ROSE. Assistant Professor,  
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Osteopathic Medicine at Lansing 1987

HERRMAN, JAN M. Assistant Clinical Professor,  
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HERRMANN, E. CLIFFORD. Emeritus Associate  
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HERRMANN, MARILYN MURDOCH. Dean, School of  
Nursing SN  
Ph.D. Claremont Graduate University 1992

HERRMANN, PAUL C. Associate Professor, Department  
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Pathology and Human Anatomy SM  
Ph.D. Stanford University 1996  
M.D. Loma Linda University SM 2000

HERSH, H. MICHAEL. Assistant Professor, Department  
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1972

HERZBERGER, KATHY A. Instructor, Department of  
Medicine SM  
B.S.N. University of Phoenix 2000

HESSELTINE, ANDREW W. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1997

HESSINGER, DAVID A. Professor, Department of Basic  
Sciences SM  
Ph.D. University of Miami at Coral Gables 1970

HEUSTIS, DARRYL G. Professor, Department of  
Pathology and Human Anatomy SM and Department of  
Clinical Laboratory Science AH  
M.D. Loma Linda University SM 1973

HEWES, GORDON E. Assistant Professor, Department of  
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HEWITT, LIANE HINAZUMI. Assistant Professor,  
Department of Occupational Therapy AH and  
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HEYDE, MARILYNN GOULARD. Assistant Professor,  
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M.P.H. Loma Linda University PH 2000

HEYWOOD, J. THOMAS. Clinical Professor, Department  
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M.D. University of California, San Diego 1980

HICKS, JAMES B. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Meharry Medical College, Philadelphia,  
Pennsylvania 1980

HIGUCHI, SHAWN K. Assistant Clinical Professor,  
Department of Neurology SM  
M.D. Loma Linda University SM 2001

HILGERS, JAMES J. Associate Professor, Department of  
Orthodontics SD  
D.D.S. Loyola University Chicago Dental School 1969

HILL, MICHAEL E. Associate Professor, Department of  
Plastic and Reconstructive Surgery SM  
M.D. University of Virginia 1985

HILLIARD, ANTHONY A. Assistant Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 2002

HILLIARD, DENNIS A. Assistant Clinical Professor,  
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M.D. Loma Linda University SM 1975

HILLIKER, SANDRA R. Instructor, Department of Basic Sciences SM

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HILLOCK, RONALD H. Associate Professor, Department of Clinical Laboratory Science AH; Assistant Research Professor, Department of Pathology and Human Anatomy SM

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HILLS, RENEE L. Assistant Clinical Professor, Department of Health Administration PH

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HINKLEMAN, LORRAINE L. Assistant Clinical Professor, Department of Nutrition PH and Department of Health Promotion and Education PH

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HINSHAW, DAVID B., JR. Professor, Department of Radiology SM

M.D. Loma Linda University SM 1971

HINTON, SHAWN J. Adjunct Assistant Professor, Department of Dental Educational Services SD

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HIROKANE, JANE M. Assistant Professor, Department of Medicine SM

M.D. Loma Linda University SM 1990

HISADA, PAUL A. Assistant Professor, Department of Health Administration PH

M.Ed. University of Hawaii, Manoa 1988

HLINE, SU SU. Assistant Clinical Professor, Department of Medicine SM

M.B.B.S. University of Medicine, 1, Yangon Myanmar 1987

HO, ANDREW T. Assistant Clinical Professor, Department of Medicine SM

M.D. University of California, San Diego 1999

HOAG, E. PATRICK. Associate Clinical Professor, Department of Restorative Dentistry SD

D.D.S. Loma Linda University SD 1973

HOANG, CATHERINE D. Assistant Professor, Department of Medicine SM

M.D. Finch University/Chicago Medical School 2002

HOANG, THANH X. Assistant Professor, Department of Medicine SM

M.D. St. George's University School of Medicine, Grenada 1999

HOANG, PHUONG THAO T. Assistant Professor, Department of Pediatrics SM

M.D. University of Medicine of Ho Chi Minh City, Vietnam 1993

HOANG, QUOC HOA. Assistant Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP

Pharm.D. University of Southern California 2004

HOCKO, JANET M. Assistant Professor, Department of Radiation Medicine SM

M.D. University of California, Irvine 1988

HODGKIN, GEORGIA W. Professor, Department of Nutrition and Dietetics AH

Ed.D. Loma Linda University SE 1991

HODGKINS, BRIAN D. Associate Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP

Pharm.D. University of Southern California 1988

HODGKINS, MARIE E. Assistant Clinical Professor, School of Nursing SN

M.B.A. University of La Verne, Los Angeles, California 1991

HOFFER, JENNIFER LIANE. Assistant Professor, Department of Pediatric Dentistry SD

D.D.S. Loma Linda University SD 1994

HOFFMAN, CHARLES D. Adjunct Professor, Department of Psychology ST

Ph.D. Adelphi University, New York 1972

HOFFMAN, WILLIAM C. Adjunct Assistant Professor,  
Department of Environmental and Occupational Health  
PH  
M.P.H. Loma Linda University PH 1995

HOFFMANN, KEITH DAVID. Associate Clinical  
Professor, Department of Oral and Maxillofacial  
Surgery SD  
D.D.S. Loma Linda University SD 1983

HOFFMANN, OLIVER C. Associate Professor,  
Department of Periodontics SD  
D.D.S. University of Wunborg, Germany 1997  
M.S. Loma Linda University SD 2003

HOFMEISTER, ELIZABETH M. Adjunct Associate  
Professor, Department of Ophthalmology SM  
M.D. Uniformed Services University, Bethesda,  
Maryland 1993

HOLDEN, BRENDA HOATSON. Clinical Instructor,  
Department of Radiation Technology AH  
M.B.A. University of Redlands 1989

HOLL, DOUGLAS B. Clinical Instructor, Department of  
Psychiatry SM  
M.D. Loma Linda University SM 2006

HOLLANDS, J. KAPUA. Clinical Instructor, Department  
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B.S. California State University, Pomona 1984

HOLLOWAY, TREVOR K. Assistant Professor,  
Department of Dental Anesthesiology SD  
D.D.S. Loma Linda University SD 2004

HOLMAN, CHARLES MICHEAL. Assistant Professor,  
Department of Endodontics SD  
D.D.S. Loma Linda University SD 1963

HOLMES, TROY ANDREW. Assistant Professor,  
Department of Health Administration PH  
M.H.A. Chapman University, Orange County,  
California 1991

HOLMES-ENIX, DEBORAH B. Clinical Instructor,  
Department of Occupational Therapy AH  
M.P.H. Loma Linda University PH 1984

HOLNESS, YVETTE ADRIENNE. Assistant Professor,  
Department of Physical Medicine SM  
M.D. Loma Linda University SM 1981

HOLSHOUSER, BARBARA A. Professor, Department of  
Radiology SM; Instructor, Department of Radiation  
Technology AH  
Ph.D. Loma Linda University FGS 1983

HOLT, DAVID LYNN. Assistant Clinical Professor,  
Department of Health Administration PH  
M.B.A. University of Redlands 1989

HOLT, JOHN R. Adjunct Assistant Professor, Department  
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D.D.S. Baylor University, Texas 1987

HOM, WENDELL. Adjunct Assistant Professor, School of  
Nursing SN  
B.S. University of California, Berkeley 1972

HOMEYER, MICHAEL D. Assistant Clinical Professor,  
Department of Cardiopulmonary Sciences AH  
M.D. New York Medical College 2007

HONG, KELLY E. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2004

HONGO, KUMIKO. Assistant Professor of Nursing,  
School of Nursing SN  
M.S.N. Chiba University, Japan 1998

HONNY, JEAN M. Assistant Clinical Professor,  
Department of Dental Hygiene SD  
B.S. Loma Linda University SD 1997

HOOKER, WILLIAM M. Associate Professor, Department  
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Ph.D. Loma Linda University GS 1969

- HOPEWELL, WILLIAM J. III. Assistant Professor,  
Department of Cardiovascular and Thoracic Surgery  
SM  
M.D. State University of New York at Syracuse 1970
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Orthopaedic Surgery SM  
M.D. University of Alabama 1997
- HOPKINS, GARY L. Adjunct Assistant Professor,  
Department of Health Promotion and Education PH  
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1975  
Dr.P.H. Universidad Autonoma de Guadalajara,  
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Health Professions AH, Distinguished Professor  
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Department of Health Promotion and Education PH  
Ph.D. University of Southern California 1974
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Pediatrics SM  
M.D. University of Texas Medical School 1977
- HORINOUCI, CATHERINE KAZUE. Assistant  
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M.S. California State University, Los Angeles 1983
- HORRICKS, DONALD. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1980
- HORRICKS, JESSICA F. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
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- HORRICKS, JUSTIN E. Assistant Professor, Department  
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M.D. Loma Linda University SM 2005
- HORSTMANN, JONATHAN WILLIAM. Assistant  
Clinical Professor, Department of Family Medicine SM  
M.D. Washington University, St. Louis, Missouri 1977
- HOTCHNER, BRADLEY R. Assistant Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. St. Louis University, Missouri 1981
- HOUCHIN, KENNETH W. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1985
- HOWARD, FRANK D. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Harvard Medical School 1985  
Ph.D. Stanford University 1981
- HOWARD, KIRK G. Assistant Professor, Department of  
Anesthesiology SM  
M.D. University of California, Irvine 1966
- HOXIE, RUSSELL EVAN, JR. Associate Professor,  
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M.D. Loma Linda University SM 1988
- HOYLE, JERRY D. Associate Clinical Professor,  
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1980
- HSU, FRANK P. K. Professor, Department of  
Neurosurgery SM; Associate Professor, Department of  
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- HSU, SHERI S. Instructor, Department of Medicine SM  
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- HUANG, GALEN C. L. Assistant Clinical Professor,  
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- HUANG, JAMES JUE-TE. Assistant Professor,  
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- HUANG, LEI. Assistant Professor, Department of Biophysics and Bioengineering ST  
M.S. Institute of Neurology, Chongqing University of Medical Sciences, China 1999  
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- HUI, NOEL T. Assistant Professor, Department of Urology SM  
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- ISAEFF, DALE M. Professor, Department of Medicine SM  
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Egypt 1999

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Indies 2004
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Social Work and Social Ecology ST  
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Health PH  
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Medicine SM  
M.D. Korea University College of Medicine 1965
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D.C. 1986
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Medicine SM  
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Radiology SM  
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Global Health PH and Department of Nutrition PH  
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D.D.S. Universidad Autonoma de Guadalajara,  
Mexico 1989
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O.T.D. Creighton University, Omaha, Nebraska 2004
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Department of Biochemistry and Microbiology SM  
Ph.D. Columbia University 1967
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Restorative Dentistry SD  
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Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2006
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D.D.S. Universidade Salgado de Oliveira, Brazil 2004
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Restorative Dentistry SD  
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Pediatrics SM  
M.D. New York Medical College 2000
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Ophthalmology SM  
M.D. National Taiwan University, Republic of China  
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M.D. Harvard Medical School 1995
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M.D. Albany Medical College 1999
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D.D.S. Loma Linda University SD 2000
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Pharm.D. University of Southern California 2005
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M.D. St. George's University School of Medicine, Grenada 1999
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D.D.S. Loma Linda University SD 1982
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D.D.S. Loma Linda University SD 2001
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D.D.S. Loma Linda University SD 2003
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Dr.P.H. Johns Hopkins Hospital 1986  
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M.D. Medical College of Virginia 1995
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D.M.D. Tufts University, Massachusetts 2002
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Pharm.D. University of California, San Francisco 2002
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M.D. Loma Linda University SM 2008  
D.D.S. Loma Linda University SD 2005
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D.D.S. University of Detroit Mercy 2001
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M.D. Medical College, Rhotak, India 1994
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M.D. Loma Linda University SM 1974
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M.D. Loma Linda University SM 1977
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M.D. Loma Linda University SM 1952
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M.D. Loma Linda University SM 1961
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M.D. University of Illinois at Chicago 1996
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B.S. Loma Linda University SM 1975
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M.D. New York Medical College, New York 2001
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Ph.D. California School of Professional Psychology 1980
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M.D. Université de Bordeaux II, France 1982
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D.D.S. Loma Linda University SD 1990
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M.S. Loma Linda University GS 1991
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M.D. Loma Linda University SM 2002
- KANG, JOANNE. Assistant Professor, Department of Medicine SM  
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Pharm.D. Loma Linda University SP 2010

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D.D.S. University of California, San Francisco 2001
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M.D. I.P. Pavlov Higher Medical Institute, New York 1989
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D.D.S. Loma Linda University SD 2007  
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M.D. University of Hawaii 2004
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Ph.D. Loma Linda University FGS 2005  
M.D. Loma Linda University SM 2003
- KARUNIA, MARTINA I. Assistant Professor, Department of Nutrition and Dietetics AH  
M.P.H. Loma Linda University PH 2002  
M.S. University of California, Davis 1999
- KASARJIAN, JULIE K.A. Instructor, Department of Medicine SM  
M.D. Loma Linda University SM 2005  
Ph.D. Loma Linda University SM 2005
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Ph.D. University of Michigan 1981
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M.D. University of California, Los Angeles 2005
- KATIRAEI, PEJMAN. Assistant Professor, Department of Pediatrics SM  
D.O. Western University of Health Sciences, Pomona, California 2003
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M.P.A. Loma Linda University AH 2003
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M.D. University of Aleppo, Syria 2005
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- KAYALI, ZEID. Associate Professor, Department of Medicine SM  
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M.D. University of Florida 1992
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M.D. George Washington University 1996
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Physical Therapy AH  
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M.B.B.S. Bhau Din Zakria University at Ultan,  
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Restorative Dentistry SD  
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M.D. University of Michigan Medical School 2000
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D.D.S. University of Colorado at Denver 1994
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M.D. Tehran University, Iran 1980
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Anesthesiology SM  
M.D. University of California, Irvine 2005
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Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1994
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Periodontics SD  
D.D.S. Loma Linda University SD 1970
- KILIAN, SHIRLEY C. Instructor, Department of  
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Ph.D. Fuller Theological Seminary 2004
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D.O. Southeastern University of Health Sciences 1990
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B.S. Loma Linda University SD 2002
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M.D. Loma Linda University SM 2005
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- KLOMPUS, STEVE J. Assistant Clinical Professor, Department of Physician Assistant Sciences AH  
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M.D. Loma Linda University SM 1977
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M.S.W. University of Southern California 1993
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Ph.D. University of Southern California 1987
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D.D.S. University of California, Los Angeles 1992
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M.P.H. Loma Linda University PH 2000
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Pediatric Dentistry SD  
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M.D. Loma Linda University SM 1996
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B.S. Loma Linda University SD 1989
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M.D. Loma Linda University SM 1967
- LOO, LAWRENCE K. Professor, Department of Medicine  
SM  
M.D. University of California, San Diego 1981
- LOPEZ, DAVID. Associate Professor, Department of  
Cardiopulmonary Sciences AH  
Ed.D. La Sierra University 2001
- LOPEZ, EDWIN F. Instructor, Department of Emergency  
Medicine SM  
M.D. St. Georges University, Grenada 2006
- LOREDO, LILIA N. Assistant Professor, Department of  
Radiation Medicine SM  
M.D. Loma Linda University SM 1984
- LOSEY, TRAVIS E. Assistant Professor, Department of  
Neurology SM  
M.D. Loma Linda University SM 2002
- LOUSUEBSAKUL, VICHUDA. Assistant Professor,  
Department of Epidemiology and Biostatistics PH  
Dr.P.H. Loma Linda University PH 2001
- LOVE, JUSTIN D. Instructor, Department of Dermatology  
SM  
M.P.A. Loma Linda University AH 2006
- LOVELESS, EDNA M. Professor, Department of Dental  
Educational Services SD  
Ph.D. University of Maryland 1969
- LOVELESS, WILLIAM A. Professor, Department of  
Dental Educational Services SD  
Ed.D. University of Maryland 1964
- LOVINGIER, LONNIE R. Assistant Professor, Department  
of Pediatric Dentistry SD  
D.D.S. Loyola University 1972
- LOWE, MICHAEL A. Instructor, Department of  
Emergency Medicine SM  
M.D. Loma Linda University SM 2002
- LOWE, OARIONA. Assistant Clinical Professor,  
Department of Pediatric Dentistry SD  
D.D.S. Howard University, Washington D. C. 1981
- LOWRY, H. MAYNARD. Professor, Department of Dental  
Educational Services SD  
Ph.D. State University of New York, Buffalo 1988
- LOWRY, JEAN B. Emeritus Professor, Department of  
Communication Sciences and Disorders AH  
Ph.D. Kent State University, Ohio 1973
- LOZADA, JAIME L. Professor, Department of Restorative  
Dentistry SD and Department of Periodontics SD  
D.D.S. Benemérita Universidad Autonoma de Puebla,  
Mexico 1982
- LU, MEI. Associate Professor, Department of Oral and  
Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 2008  
Ph.D. University of Hong Kong 2003
- LUCINIAN, TANIA H. Instructor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. Loma Linda University SP 2009
- LUDI, H. DANIEL. Assistant Professor, Department of  
General and Trauma Surgery SM  
M.D. Universidad Nacional de Cordoba, Argentina

- LUDWICK, MONICA. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of California, San Francisco 2007
- LUH, GEORGE YU-CHIEN. Associate Professor,  
Department of Radiology SM  
M.D. Loma Linda University SM 1992
- LUI, PAUL D. Associate Professor, Department of  
Urology SM  
M.D. Loma Linda University SM 1984
- LUM, MICHAEL. Clinical Instructor, Department of  
Cardiopulmonary Sciences AH  
B.S. Loma Linda University AH 1983
- LUM, SHARON S. J. Associate Professor, Department of  
General and Trauma Surgery SM  
M.D. Washington University 1992
- LUO, XIAN. Instructor, Department of Radiation  
Medicine SM and Assistant Research Professor,  
Department of Basic Sciences SM  
Ph.D. Loma Linda University GS 2004  
M.D. Capital University of Medical Sciences, China  
1998
- LURTZ, MONICA M. Adjunct Assistant Professor,  
Department of Basic Sciences SM  
Ph.D. Baylor College of Medicine, Texas 1998
- LUTHER, R. DANIEL II. Assistant Professor, Department  
of Emergency Medicine SM  
M.D. Loma Linda University SM 1981
- LY, ANH M. Clinical Instructor, Department of Radiation  
Technology AH  
M.D. St. George's University School of Medicine,  
Grenada 1999
- LY, ANH-VUONG NGOC. Assistant Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of the Pacific 2001
- LY, LUONG. Assistant Clinical Professor, Department of  
Physician Assistant Sciences AH  
M.D. St. George's University School of Medicine 1999
- LYNCH, ELIZABETH LEA. Assistant Professor,  
Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1994
- MAASKANT, TRUDI LYNN. Assistant Clinical Professor,  
Department of Physical Therapy AH  
M.P.T. Loma Linda University AH 1996
- MACKENZIE, D. ALLAN. Clinical Professor, Department  
of Orthopaedic Surgery SM  
M.D. McGill University, Montreal, Canada 1964
- MACE, JOHN W. Professor, Department of Pediatrics SM  
and Department of Pediatric Dentistry SD  
M.D. Loma Linda University SM 1964
- MACK, ERIC J. Associate Professor, Department of  
Pharmaceutical Sciences SP  
Ph.D. University of Utah 1988
- MACKENZIE, D. ALLAN. Clinical Professor, Department  
of Orthopaedic Surgery SM  
M.D. McGill University, Montreal, Canada 1964
- MACKETT, M. C. THEODORE. Adjunct Professor,  
Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1968
- MACKNET, KENNETH D., JR. Assistant Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1996
- MACKNET, MARK R. Assistant Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 2001
- MAGNAYE, IVAN M. Assistant Professor, Department of  
Medicine SM  
M.D. University of the East, Philippines 2002
- MAHDI, TAREK Z. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Academy of Medicine at Sofia, Bulgaria 1983

- MAHMOUD, GUISSOU. Assistant Professor, Department of Emergency Medicine SM  
M.D. St. George's University School of Medicine, Grenada 1998
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Ph.D. Columbia University 2002
- MAKEN, KANWALJEET. Assistant Professor, Department of Medicine SM  
M.D. Maulana Azad Medical College, India 1995  
M.B.B.S. University College of Medical Sciences, India 1990
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D.M.D. University of Pennsylvania 1997
- MALAMUD, ARIEL. Associate Professor, Department of Medicine SM  
M.D. Universidad Complutense de Madrid, Spain 1993
- MALHOTRA, RAM C. Assistant Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP  
M.S. State University of New York, Buffalo 1988
- MALHOTRA, SMITRA. Assistant Professor, Department of Pediatrics SM  
M.D. Texas A&M University 2005
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Pharm.D. Idaho State University 1981  
M.B.A. University of Phoenix 1997
- MALIK, PRIYA. Assistant Professor, Department of Medicine SM  
M.D. University of Madras, India 1988
- MALKIN, MATHEW. Assistant Professor, Department of Anesthesiology SM  
M.D. University of Chicago, Pritzker 2005
- MALLARI, JOCELYN A. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 2004
- MAMDANI, NIRAV. Assistant Professor, Department of Medicine SM  
M.B.B.S. M.P. Shah Medical College, India 2001
- MANCHANDA, RAMESH K. Assistant Professor, Department of Medicine SM  
M.B.B.S. Delhi University, India 1968
- MANCHANDIA, KRISH J. Assistant Professor, Department of Medicine SM  
M.D. Ohio State University 2000
- MANDAPATI, RAVI. Associate Professor, Department of Pediatrics SM and Department of Medicine SM  
M.D. Maulana Azad Medical College at New Delhi, India 1985
- MANOONKITTIWONGSA STACY, PANADDA. Assistant Professor of Nursing SN  
M.S. Loma Linda University FGS 1997
- MANOUCHERI, MANOUCHER. Adjunct Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1976
- MANSOUR, MARIE C. Assistant Professor, Department of Orthodontics SD  
M.B.A. Nova Southeastern University, Florida 2002  
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- MAO, XIAO WEN. Assistant Research Professor, Department of Radiation Medicine SM  
M.D. Shanghai Second Medical University, China 1991

- MAR, JEFFREY N. Assistant Clinical Professor,  
Department of Psychiatry and Department of Pediatrics  
SM  
M.D. Dartmouth Medical School, New Hampshire  
1999
- MARAIS, GARY E. Associate Clinical Professor,  
Department of Medicine SM and Department of Family  
Medicine SM  
M.B.Ch.B. Stellenbosch University Medical School,  
South Africa 1973
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Department of Medicine SM  
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- MARCH, GLENVILLE A. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. University of Rochester at New York 1990
- MARCKS, KURT O. Assistant Professor, Department of  
Endodontics SD  
D.D.S. Loma Linda University SD 1994
- MARIN, TRACI L. Assistant Clinical Professor,  
Department of Cardiopulmonary Sciences AH  
M.P.H. Loma Linda University PH 2004
- MARLOW, HAROLD, JR. Assistant Clinical Professor,  
Department of Environmental and Occupational Health  
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M.S. Rice University, Houston, Texas 1991
- MARSA, ROBERT J. Emeritus Associate Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1970
- MARSHAK, ARTHUR BOHDAN. Assistant Professor,  
Department of Cardiopulmonary Sciences AH and  
Cardiopulmonary Sciences Program FGS  
M.S. University of Southern California 2005
- MARSHAK, HELEN HOPP. Associate Professor,  
Department of Health Promotion and Education PH,  
Department of Psychology FGS and Department of  
Physical Therapy AH  
Ph.D. University of Washington 1991
- MARSHALL, EDWARD CHARLES. Assistant Professor,  
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D.D.S. University of the Pacific at San Francisco 1974
- MARTELL, AXA I. Assistant Professor, Department of  
Medicine SM  
M.D. Montemorelos University, Mexico 1989
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Religion SR  
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Illinois 1990
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Medicine SM  
M.D. Loma Linda University SM 1990
- MARTIN, ARTEMIO ROBERT. Assistant Clinical  
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M.D. Loma Linda University SM 1997
- MARTIN, BRADFORD DOUGLAS. Professor,  
Department of Physical Therapy AH and Physical  
Therapy Program FGS  
Ph.D. Loma Linda University GS 1984
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D.D.S. University of the Pacific 1973
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Surgery SM  
Ph.D. University of Oregon Medical School 1995
- MARTIN, JENNIFER. Instructor, Department of Family  
Medicine SM  
M.S. Loma Linda University SM 2008
- MARTIN, LESLIE R. Adjunct Assistant Professor,  
Department of Psychology ST  
Ph.D. University of California, Riverside 1996

- MARTIN, MARK C. Assistant Professor, Department of Surgery SM  
D.M.D. McGill University, Montreal, Canada 2002  
M.D. University of Manitoba, Winnipeg, Canada 1996
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Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of the Pacific 1992
- MARTIN, ROBERT DOUGLAS. Professor, Department of Anesthesiology SM and Professor, School of Nursing SN  
M.D. Loma Linda University SM 1976
- MARTINEZ, HELEN R. Instructor, Department of Allied Health Studies AH  
M.A. University of Redlands 2001
- MARTORELL-BENDEZU, LILY B. Assistant Professor,  
Department of Pediatrics SM  
M.D. Loma Linda University SM 2001
- MASANGCAY, CLARO YAMBABO. Instructor,  
Department of Clinical Laboratory Science AH  
B.A. University of California, Santa Barbara 1989
- MASHNI, MICHAEL. Department of Physiology and Pharmacology SM  
D.D.S. Loma Linda University SD 1992
- MASKIN, MICHAEL B. Assistant Professor, Department of Psychiatry SM  
Ph.D. Fordham University, New York 1973
- MASKIEWICZ, RICHARD. Assistant Professor,  
Department of Pharmaceutical Sciences SP  
Ph.D. University of California, San Bernardino 1979
- MASKIEWICZ, VICTORIA. Assistant Professor,  
Department of Pharmaceutical Sciences SP  
Ph.D. University of California, San Francisco 1989
- MASON, DANIELLE M. Instructor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 2005
- MASON, LINDA JO. Professor, Department of Anesthesiology SM and Department of Pediatrics SM  
M.D. Loma Linda University SM 1974
- MASSEY, EVELYN L. Assistant Professor, Department of Cardiopulmonary Sciences AH  
M.D. UTESA University, Dominican Republic 1982
- MASSI, MARK. Instructor, Department of Pediatrics SM  
M.D. Jefferson Medical College, Philadelphia 2000
- MATA-GREENWOOD, EUGENIA I. Assistant Professor,  
Department of Basic Sciences SM and Assistant Professor, Department of Gynecology and Obstetrics SM  
Ph.D. University of Illinois 2000
- MATAYA, RONALD. Associate Professor, Department of Global Health PH  
M.D. West Ukauas State University, Iloilo 1981
- MATAMALA, TOMAS P. Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.A. Universidad de Concepcion, Chile 2000
- MATEJA, SHARON B. Assistant Clinical Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1982
- MATHEY, JAMES A. Assistant Clinical Professor,  
Department of Physician Assistant Sciences AH  
M.P.A. Loma Linda University AH 2004
- MATHIAS, LIESL A. Assistant Professor, Department of Pediatrics SM  
M.B.B.S. St. Johns Medical College, India 1990
- MATHEWS, FREDERICK R. Assistant Professor,  
Department of Oral and Maxillofacial Surgery SD  
M.S. Loma Linda University GS 1987  
M.P.H. Loma Linda University PH 1983  
D.D.S. Loma Linda University SD 1983
- MATHUR, MUDIT. Assistant Professor, Department of Pediatrics SM  
M.B.B.S. University of Delhi, India 1990

- MATIKO, JAMES D. Assistant Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1977
- MATOS CHAMORRO, RODRIGO. Associate Professor,  
Department of Epidemiology and Biostatistics PH  
Ph.D. Universidade Estadual de Campinas, Brazil  
1997
- MATTHEWS, WAYNE R. Assistant Professor, Department  
of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of the Pacific 1979
- MAURER, JAMES S. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. Loma Linda University SM 1991
- MAXWELL, A. GRAHAM. Emeritus Professor, School of  
Religion SR  
Ph.D. University of Chicago Divinity School 1959
- MAZAHERI, ATA. Assistant Professor, Department of  
General and Trauma Surgery SM  
M.D. Royal College of Surgeons in Ireland 2000
- MAZLUMIAN, JORGE R. Assistant Clinical Professor,  
Department of Pediatrics SM  
M.D. University of Buenos Aires, Argentina 1971
- MCARTHUR, BRUCE C. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1982
- MCARTHUR III, CLAIRE L. Associate Professor,  
Department of Medicine SM and Department of  
Emergency Medicine SM  
M.D. University of Florida 1972
- MCCAFFERY, PATRICK G. Assistant Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1964
- MCCAFFERY-THEODORE, SHARON. Clinical Instructor,  
Department of Ophthalmology SM  
M.D. University of California, San Francisco Medical  
School 2000
- MCCARTY, KENNETH D. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.S. Loma Linda University GS 1998
- MCCLATCHEY, SCOTT K. Adjunct Associate Professor,  
Department of Ophthalmology SM  
M.D. University of Chicago, Pritzker School of  
Medicine 1985
- MCCLEARY, KARL J. Adjunct Assistant Professor,  
Department of Health Administration PH  
Ph.D. University of Alabama at Birmingham 1998
- MCCLURE, CHALMER D. Assistant Professor,  
Department of Pediatrics SM and Department of  
Neurology SM  
Ph.D. Loma Linda University GS 1992  
M.D. Loma Linda University SM 1989
- MCCLURE, ERIKA A. Assistant Clinical Professor,  
Department of Pediatrics SM  
M.D. Loma Linda University SM 2004
- MCCLURE, FAITH H. Adjunct Associate Professor,  
Department of Psychology ST  
Ph.D. University of California, Los Angeles 1989
- MCCORMACK, LAURA A. Clinical Instructor,  
Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 2008
- MCCRACKEN, JOHN D. Associate Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1985
- MCCULLOUGH, WILLIAM M. Assistant Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Ohio State University 1982
- MCDONALD, PEARL Z. Clinical Instructor, Department  
of Dental Hygiene SD  
B.S. Loma Linda University SD 1971
- MCDONALD, STEPHEN D. Associate Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 2003

- MCFADDEN, JEFFERY A. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1998
- MCFARLAND, JAN R. Assistant Professor, Department of  
Communication Sciences and Disorders AH  
M.S. Loma Linda University GS 1995
- McFIELD, EDWARD. Assistant Clinical Professor,  
Department of Global Health PH  
Ph.D. Loma Linda University FGS 2009
- MCGANN, DAVID G. Instructor, Department of Surgery  
SM  
M.S. Colorado State University 1972
- MCGHEE, WILLIAM H. Professor, Department of  
Psychiatry SM  
M.D. Loma Linda University SM 1972
- MCGREGOR, SAMAR S. Assistant Clinical Professor,  
Department of Nutrition PH  
M.P.H. Loma Linda University PH 1986
- MCGREW, DAVID R. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1976
- MCINDOE, THOMAS WINFIELD. Assistant Clinical  
Professor, Department of Orthopaedic Surgery SM  
M.D. Baylor University, Houston, Texas 1963
- MCIVOR, DEBORAH W. Assistant Professor, Department  
of Anesthesiology SM  
M.D. University of Guadalajara, Mexico 1983
- MCKNIGHT, BROOKE. Assistant Clinical Professor,  
Department of Environmental and Occupational Health  
PH  
Dr.P.H. Loma Linda University PH 2002
- MCMILLAN, JAMES IRA. Associate Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1986
- MCMILLAN, PAUL J. Professor, Department of Pathology  
and Human Anatomy SM  
Ph.D. College of Medical Evangelists 1960
- MCNAUGHTON, LAURIE A. Assistant Clinical  
Professor, Department of Family Medicine SM  
M.D. University of Pennsylvania School of Medicine  
1995
- MCNAUGHTON, TIMOTHY G. Assistant Professor,  
Department of Emergency Medicine SM  
Ph.D. University of Utah 1996  
M.D. University of California, Los Angeles 2000
- MCNEILL, JAMES I. Clinical Professor, Department of  
Ophthalmology SM  
M.D. Loma Linda University SM 1972
- MCNEILL, JEANINE A. Assistant Clinical Professor,  
Department of Radiology SM  
M.D. Loma Linda University SM 1983
- MCNITT, LOUISE. Clinical Instructor, Department of  
Preventive Medicine SM  
M.D. University of California, San Diego 2003
- MCNUTTY, NORMAN L. Assistant Professor,  
Department of Neurology SM  
M.D. Loma Linda University SM 2004
- MCSWAN, KELLI L. Instructor, Department of Psychiatry  
SM  
Ph.D. Loma Linda University FGS 2009
- MEDAL, DIANA STEED. Assistant Professor, Department  
of Health Information Management AH  
M.A. California State University, San Bernardino 2001
- MEDINA, ERNEST PAUL SARNO. Assistant Clinical  
Professor, Department of Health Promotion and  
Education PH  
Dr.P.H. Loma Linda University PH 1993
- MEDINA, KERI KUNIYOSHI. Assistant Professor, School  
of Nursing SN  
D.N.S. University of San Diego Philip Y. Hahn School  
of Nursing 1996
- MEGLIO, DANIELLE JOSEPHINE. Clinical Instructor,  
Department of Occupational Therapy AH  
A.S. Loma Linda University AH 1993

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M.B.B.S. King Edward Medical College, Pakistan 1997
- MEHARRY, MICHAEL R. Associate Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1980
- MEHTA, SUKH Sampat RAJ. Associate Professor, Department of Medicine SM  
M.D. SMS Medical College, India 1968
- MEJIA, LEONIDAS V. Instructor, Department of Medicine SM  
M.D. Manila Central University, Philippines 1992
- MEJIA, MAXIMINO A. Adjunct Associate Research Professor, Department of Nutrition PH  
Dr.P.H. Loma Linda University PH 2000
- MELCHER, CAROLYN LOPEZ. Assistant Professor, Department of Health Promotion and Education PH  
B.S. Loma Linda University SN 1980
- MELTZER, ELLIOTT A. Assistant Clinical Professor, Department of Family Medicine SM  
M.D. Louisiana State University Medical Center 1979
- MENDES, JEANNINE STUART. Assistant Professor, Department of Physical Therapy AH  
M.P.T. Loma Linda University AH 1995
- MENDLER, MICHEL H. Associate Professor, Department of Medicine, SM  
University of Rennes Medical School, France 1992
- MENEZES, DEBORA G. Assistant Professor, Department of Periodontics SD  
D.D.S. Federal University of Rio de Janeiro, Brazil 2003
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D.D.S. Loma Linda University SD 1977
- MERCADO, RENEE N. S. Instructor, Department of Radiation Technology AH  
B.S. University of Redlands 2002
- MERIDETH, CHARLES H. Clinical Professor, Department of Psychiatry SM  
M.D. Washington School of Medicine 1965
- MERKEL, CLIFFORD DARA. Assistant Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1980
- MERRITT, THURMAN A. Professor, Department of Cardiopulmonary Sciences AH and Department of Pediatrics SM  
M.P.A. Portland State University 1999  
M.D. University of Kansas 1972
- MESSINA, MARK JOHN. Adjunct Associate Professor, Department of Nutrition PH  
Ph.D. Michigan State University 1987
- MEYER, BONNIE LEE. Assistant Professor, School of Nursing SN  
M.S. Loma Linda University GS 1972
- MEYER, JAMES A. Clinical Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1958
- MEYER, JONATHAN M. Associate Clinical Instructor, Department of Psychiatry SM  
M.D. Harvard Medical School 1988
- MICHEL, ALAN W. Assistant Professor, Department of Medicine SM  
M.D. Montemorelos, Mexico 2001
- MICHELSON, DAVID J. Assistant Professor, Department of Pediatrics SM  
M.D. University of California, Los Angeles 1998
- MICKEY, KEVIN. Adjunct Assistant Professor, Department of Environmental and Occupational Health PH  
M.A. Indiana University 2002
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M.D. Loma Linda University SM 1964
- MILLER, JON M. Assistant Professor, Department of  
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M.D. Loma Linda University SM 1990
- MILLER, F. PENELOPE. Emerita Associate Professor,  
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- MILLER, MILON J. H. Professor, Department of  
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M.S. George Washington University 2002  
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Medicine SM; and Instructor, Department of Pediatrics  
SM  
M.D. St. Louis University, Missouri 2001
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Physician Assistant Sciences AH  
M.S. University of Nebraska 2006
- MINYARD-WIDMANN, MICHELLE. Assistant Professor,  
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M.S. University of La Verne, Los Angeles, California  
1995
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D.D.S. Loma Linda University SD 1984
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- MITTAL, RENU. Assistant Clinical Professor, Department  
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M.B.B.S. University of London, England, UK 1982
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Center 2001
- MOBILIA, ADRIAN. Assistant Professor, Department of  
Periodontics SD  
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M.S. Middle Tennessee School of Anesthesia 2002
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M.A. University of Montemorelos, Mexico 2000
- MOLINA, RAFAEL. Assistant Professor, Department of Health Policy and Management PH  
M.Ed. University of Montemorelos, Mexico 1994
- MOLINE, MARY VOGEL. Professor, Department of Counseling and Family Science ST  
Ph.D. Brigham Young University, Utah 1979  
M.P.H. Loma Linda University PH 1975  
Dr.P.H. Loma Linda University PH 1975
- MOLKARA, AFSHIN M. Assistant Professor, Department of Cardiovascular and Thoracic Surgery SM  
M.D. Howard University, Washington D.C. 1996
- MOLONEY, PATRICK M. Assistant Clinical Professor, Department of Medicine SM  
M.B.Ch.B. University College Galway, Ireland 1968
- MONDRAGON, ALLISON S. Instructor, Department of Gynecology and Obstetrics SM  
R.N./NP. University of California, San Diego 2000  
M.S. California State University, Long Beach 1997
- MONTGOMERY, SUSANNE B. Professor, Department of Health Promotion and Education PH, Department of Preventive Medicine SM, and Department of Global Health PH  
Ph.D. University of Michigan 1987
- MONTI, BEVERLY ANN. Adjunct Instructor, School of Nursing SN  
M.S.N. University of San Diego 1995
- MOORE, KATHLEEN LOU. Assistant Professor, Department of Dental Educational Services SD  
M.S. University of Southern California 1999
- MOORES, DONALD C. Associate Professor, Department of General and Trauma Surgery SM and Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1987

- MOORHEAD, J. DAVID. Adjunct Associate Professor,  
Department of Urology SM  
M.D. Loma Linda University SM 1973
- MORA-ALDRICH, OLGA M. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. University of Puerto Rico 2001
- MORENO, ROBERTO. Clinical Instructor, Department of  
Psychiatry SM  
M.D. Universidad Nacional De San Marcos 1960
- MORETTA, CARLOS MANUEL. Assistant Professor,  
Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 2001
- MOREY, JANETTE L. Clinical Instructor, Department of  
Occupational Therapy AH  
B.S. University of North Dakota 1978
- MORGAN, DANIEL. Assistant Professor, Department of  
Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 2007
- MORGAN, DOREE L. Assistant Clinical Professor,  
Department of Nutrition PH  
M.P.H. Loma Linda University PH 1978
- MORGAN, JOHN W. Professor, Department of  
Epidemiology and Biostatistics PH  
Dr.P.H. Loma Linda University PH 1987
- MORGAN, JUDITH L. Adjunct Instructor, Department of  
Nutrition and Dietetics AH  
M.B.A. Golden Gate University, San Francisco,  
California 1992
- MORGAN, WALTER C. Assistant Clinical Professor,  
Department of Family Medicine  
M.D. University of Washington 1981
- MORIKAWA, WESLEY MIKJO. Assistant Clinical  
Professor, Department of Pediatric Dentistry SD  
D.D.S. University of Southern California 1981
- MORRIS, CHRISTOPHER LEE. Professor, Department of  
Pediatrics SM  
M.D. University of Minnesota 1980
- MORRIS, JOAN D. Associate Professor, Department of  
Pediatrics SM  
M.D. University of Florida 1986
- MORROW, STEVEN GALE. Professor, Department of  
Endodontics SD  
D.D.S. Loma Linda University SD 1960
- MORTON, KELLY R. Associate Research Professor,  
Department of Family Medicine SM, Associate  
Professor, Department of Psychology ST and  
Experimental Psychology Program FGS  
Ph.D. Bowling Green State University, Ohio 1992
- MOSAAD, PHEBE FAWZI. Assistant Professor,  
Department of Anesthesiology SM  
M.B.Ch.B. Kasr El Aini School of Medicine, Egypt  
1967
- MOSAVIN, RASHID. Associate Professor, Department of  
Pharmaceutical Sciences SP  
Ph.D. University of Wisconsin at Madison 1996
- MOSES, DEVADAS S. Assistant Professor, Department of  
Medicine SM  
M.D. Universidad Technologica de Santiago,  
Dominican Republic 1985  
Dr.P.H. Loma Linda University PH 1980
- MOSES, OLIVIA. Assistant Professor, Department of  
Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 2005
- MOSLEY, TERESE RENE. Instructor, Department of  
Radiation Technology AH  
B.S. Loma Linda University AH 1983
- MOSS, JENNIFER DAWN. Assistant Professor,  
Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2003
- MOTE, GORDON E. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
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Ph.D. Century University, Albuquerque 1995

- MOTE, RAYLENE L. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of the Pacific 1976
- MOYNIHAN, JAMES A. Associate Professor, Department  
of Emergency Medicine SM and Department of  
Pediatrics SM  
D.O. College of Osteopathic Medicine of the Pacific  
1996
- MTHOMBENI, JONATHAN J. Assistant Clinical  
Professor, Department of Pediatrics SM  
M.D. Technical University of Santiago, Chile 1985
- MUDGE, M. KENNETH. Clinical Professor, Department  
of Orthopaedic Surgery SM  
M.B.Ch.B. University of Birmingham, England 1970
- MUKHERJEE, ASHIS. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Cornell University Medical College, New York  
1985
- MULDER, SHANNON M. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1983
- MULLA, NEDA F. Associate Professor, Department of  
Pediatrics SM  
M.B.B.S. Kuwait University Health Sciences Center  
College of Medicine, Kuwait 1986
- MULTANI, MALWINDER KAUR. Assistant Professor,  
Department of Medicine SM  
M.B.B.S. Medical College at Amrisar, India 1979
- MUNCE, C. JOHN. Assistant Professor, Department of  
Endodontics SD  
D.D.S. Loma Linda University SD 1978
- MUNGUIA, FERNANDO MOISES. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. Cayetano Heredia Peruvian University, Peru  
1985
- MUNIZ, BRENDA. Clinical Instructor, Department of  
Health Information Management AH  
B.S. Loma Linda University AH 1990
- MUNOZ OLIVARES, JOSE E. Assistant Professor,  
Department of Health Promotion and Education PH  
Ph.D. Universidad de Palermo, Argentina 2002
- MUNSON, JAMES L. Assistant Clinical Professor,  
Department of Pediatrics SM  
M.D. Loma Linda University SM 1977
- MUNSON, LAUREL JONES. Assistant Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1978
- MURAD, WADSWORTH H. Assistant Clinical Instructor,  
Department of Psychiatry SM  
D.O. Western University of Health Sciences, Pomona,  
California 1984
- MURAD-AL-SHAIKH, MAKRAM A. Clinical Professor,  
Department of Environmental and Occupational Health  
PH  
M.S. University of Wisconsin, Madison 1983
- MURASE, MIYAKO. Adjunct Instructor, Department of  
Allied Health Studies AH  
B.A. Social Welfare University, Japan 1978
- MURATA, YOKO. Adjunct Assistant Professor,  
Department of Environmental and Occupational Health  
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Ph.D. University of São Paulo, Brazil 1995
- MURDOCH, J. LAMONT. Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1963
- MURDOCH, PATRICIA S. Assistant Professor,  
Department of Health Policy and Management PH  
M.P.H. Loma Linda University PH 2001
- MURDOCH, WILLIAM GORDON C., JR. Associate  
Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 1973

- MURRAY, MATTHEW D. Instructor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 2006
- MURRAY, RICK D. Associate Clinical Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1975
- MUTINGA, MUENI L. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2001
- MUULA, ADAMSON S. Adjunct Assistant Professor, Department of Global Health PH  
M.P.H. Loma Linda University PH 2005
- MUULA, ADAMSON S. Adjunct Assistant Professor, Department of Global Health PH  
M.P.H. Loma Linda University PH 2005
- NADLER, DAN. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1995
- NAFTEL, JOHN C. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of California, Los Angeles 1972
- NAGELHOUT, JOHN J. Adjunct Professor of Nursing SN  
Ph.D. Wayne State University, Detroit, Michigan 1985
- NAHOUM, HENRY ISSAC. Professor, Department of Orthodontics SD  
D.D.S. Columbia University, New York 1943
- NALIN, RONALD. Adjunct Assistant Professor, Department of Earth and Biological Sciences ST and Earth Science Program FGS  
Ph.D. Universita degli Studi de Paduva, Italy 2006
- NAM, EDUARDO J. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2002
- NAM, JUHYEOK. Associate Professor, School of Religion SR and Religion Program FGS  
Ph.D. Andrews University 2005
- NAMIHAS, IVAN C., JR. Assistant Professor, Department of Radiation Medicine SM  
M.D. Loma Linda University SM 1984
- NAREDDY, HIMA. Instructor, Department of Medicine SM  
M.B.B.S. Kurnool Medical College, India 2004
- NARITA, LUMINITA S. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. Carol Davila University, Romania 1999
- NARULA, MINAKSHI. Assistant Professor, Department of Orthodontics SD  
B.D.S. RA Dental College at Calcutta, India 1985
- NARVAEZ, JULIO. Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1992
- NASH, DANIEL A. Assistant Professor, Department of Medicine SM  
M.D. University of Nevada, Reno 1988
- NASH, SANDRA B. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1980
- NASH, WALTER C. Associate Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1955
- NATTRESS, LeROY W. JR. Assistant Clinical Professor, Department of Health Policy and Management PH  
Ph.D. Walden University, Minneapolis 1996
- NAUERTZ, CINDA L. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1999
- NAVA, P. BEN, JR. Professor, Department of Pathology and Human Anatomy SM  
Ph.D. Loma Linda University GS 1973
- NAYAK, KRISHNA. Clinical Research Professor, Department of Medicine SM  
Ph.D. Stanford University 2001

- NAYLOR, W. PATRICK. Professor, Department of Restorative Dentistry SD  
D.D.S. Georgetown University, Washington D.C. 1978
- NAZARI, MOSTAFA. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Esfahan University, Iran 1986
- NAZIR, CID. Assistant Professor, Department of Physical Medicine and Rehabilitation SM  
M.D. Loma Linda University SM 2002
- NEERGAARD, JAMES O. Adjunct Assistant Professor, Department of Global Health PH  
Dr.P.H. Loma Linda University PH 2006
- NEERGAARD, JOYCE B. Assistant Professor, Department of Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 2005
- NEGERIE, MEKEBEB. Adjunct Assistant Professor, Department of Global Health PH  
Dr.P.H. Loma Linda University PH 1994
- NEGLIO, MICHAEL J. Assistant Clinical Professor, Department of Radiology SM  
M.D. University Autonomous of Guadalajara, Mexico 1974
- NEIDIGH, JONATHAN W. Assistant Professor, Department of Basic Sciences SM  
Ph.D. University of Washington 1999
- NEISH, CHRISTINE GERKEN. Associate Professor of Nursing, SN and Associate Professor, Department of Health Promotion and Education PH  
Ph.D. Claremont Graduate University 1988
- NELSON, ALAN A. Adjunct Associate Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 1979
- NELSON, ANNA. Assistant Professor, Department of Cardiopulmonary Sciences AH  
M.P.H. Adventist International Institute of Advanced Studies, Philippines 2007
- NELSON, BONNIE ANN. Assistant Professor, Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 1988
- NELSON, GREGORY A. Professor, Department of Radiation Medicine SM  
Ph.D. Harvard University 1979
- NELSON, JERALD C. Professor, Department of Medicine SM and Department of Pathology and Human Anatomy SM  
M.D. College of Medical Evangelists 1957
- NELSON, LAURIE E. Clinical Instructor, Department of Occupational Therapy AH  
M.A. University of Southern California 1995
- NELSON, RICHARD DEANE. Assistant Clinical Professor, Department of Cardiopulmonary Sciences AH  
M.D. Angeles University 1995
- NELSON, RICHARD R. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.M.D. University of Oregon Dental School 1972
- NELSON, SCOTT C. Assistant Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1996
- NELSON, WILBUR K. Adjunct Assistant Professor, Department of Cardiopulmonary Sciences, AH  
M.D. Bicol Christian College of Medicine, Philippines 1988
- NESPER, TIMOTHY P. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of Southern California 1983
- NEUENDORFF, HAROLD THOMAS. Clinical Instructor, Department of Occupational Therapy AH  
B.S. Loma Linda University AH 1992

- NEUFELD, ROLAND DELMER WARREN. Assistant Professor, Department of Orthodontics SD and Orthodontics and Dentofacial Orthopaedics Program FGS  
D.D.S. Loma Linda University SD 1974
- NEUMANN, MONICA M. Associate Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1974
- NEVINS, MYRON. Adjunct Assistant Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Temple University, Philadelphia, Pennsylvania 1965
- NEWBOLD, DANIEL D. Assistant Professor, Department of Periodontics SD  
D.D.S. Loma Linda University SD 1982
- NEWBOLD, JEAN L. Assistant Clinical Professor, Department of Nursing SN  
M.S. Loma Linda University GS 1985
- NEWELL, DANIEL W.H. Assistant Professor, Department of Counseling and Family Science ST  
M.S. Loma Linda University ST 2000
- NEWTON, FREDERICK A. Adjunct Professor, Department of Psychology GS  
Ph.D. University of Houston 1975
- NEWTON, STEVEN DOUGLAS. Assistant Clinical Professor, Department of Physical Therapy AH  
M.B.A. University of Redlands 1992
- NG, SHERALENE H. C. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1990
- NGO, EHREN BRENT. Assistant Professor, Department of Cardiopulmonary Sciences AH  
M.S. University of Maryland 1999
- NGO, ERIC. Associate Clinical Professor, Department of Preventive Medicine SM and Department of Health Promotion and Education PH  
M.D. Loma Linda University SM 1963
- NGO, PHAT H. Assistant Professor, Department of Medicine SM  
M.D. Tufts University, Boston, Massachusetts 2000
- NGUYEN, ANDRE. Instructor, Department of General and Trauma Surgery SM  
M.D. Albert Einstein College of Medicine, New York 1998
- NGUYEN, ANH. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 2006
- NGUYEN, H. BRYANT. Associate Professor, Department of Emergency Medicine SM  
M.D. University of California, Irvine 1998
- NGUYEN-TRUAX, FAYETTE K. Assistant Professor, School of Nursing SN  
M.S., Loma Linda University SN 2003
- NGUYEN, HIEU T.M. Assistant Professor, Department of Family Medicine SM  
D.O. Western University of Health Sciences, Pomona, California 2001
- NGUYEN, HOA T. Assistant Professor, Department of Medicine SM  
M.D. University of California, Los Angeles 1999
- NGUYEN, HOLLY H. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2001
- NGUYEN, LEE H. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of California, San Francisco 2004
- NGUYEN, MAILY T. Assistant Professor, Department of Pediatrics SM  
D.O. Western University of Health Sciences, Pomona, California 2004
- NGUYEN, ROSALYNN H. Instructor, Department of Ophthalmology SM  
O.D. Southern California College of Optometry, Fullerton, California 2007

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Pharmacotherapy and Outcomes Science SP  
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2010
- NGUYEN, THAO. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
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Pharm.D. University of Arkansas Medical Sciences  
2000
- NGUYEN, THIEN-LAN V. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2003
- NGUYEN, THIEU P. Assistant Professor, Department of  
Pediatrics SM  
M.D. University of Washington 2000
- NGUYEN, THUAN HUU. Instructor, Department of  
Clinical Laboratory Science AH  
M.P.H. Loma Linda University PH 1975
- NGUYEN, THUY-HUYNH. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. American University of the Caribbean,  
Netherlands Antilles 1991
- NGUYEN, VAN H.T. Assistant Clinical Professor,  
Department of Physician Assistant Sciences AH  
M.P.A. Marietta College, Ohio 2005
- NICK, DOYLE R. Associate Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1978
- NICK, JAN M. Associate Professor, School of Nursing SN  
Ph.D. Texas Women's University 1997
- NICK, KEVIN E. Associate Professor, Department of  
Earth and Biological Sciences ST  
Ph.D. University of Oklahoma 1990
- NICKSON, KENNETH L. Assistant Professor,  
Department of Emergency Medicine SM  
M.D. University of Tennessee 1971
- NICOLA, QUINTES PERRY. Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1969
- NIE, YING. Assistant Research Professor, Department of  
Radiation Medicine SM  
Ph.D. Indiana University-Purdue University 1995  
M.D. Beijing University Medical College 1984
- NIEMEYER, MATTHEW S. Adjunct Assistant Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1991
- NINAN, BARBARA L. Assistant Professor, School of  
Nursing SN  
M.S.N. University of Phoenix 1993
- NINNIS, JANET. Associate Professor, Department of  
Pediatrics SM  
M.D. University of Arizona College of Medicine
- NIST, LAURA DAWN HENRICHSEN. Associate  
Professor, Department of Neurology SM  
M.D. Loma Linda University SM 1995
- NITTA, ANNETTE TSUGIE. Assistant Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1985
- NOONE, MELISSA A. Instructor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 2005
- NOORVASH, SHAHAB. Assistant Professor, Department  
of Endodontics SD  
D.D.S. Northwestern University, Illinois 1987
- NORDBERG, KIM D. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. University of Washington 1979
- NORDLAND, W PETER. Adjunct Assistant Professor,  
Department of Periodontics SD  
D.M.D. Temple University, Philadelphia 1979
- NORIAN, JOHN M. Instructor, Department of  
Gynecology and Obstetrics SM  
M.D. Royal College of Surgeons, Ireland 2002

- NORRIS, PAUL M. Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of the Pacific, Stockton 1980
- NOVAL, JERL JEAN. Instructor, Department of Nutrition PH and Department of Nutrition and Dietetics, AH  
M.S. Rosalind Franklin University, Illinois 2006
- NOVY, BRIAN B. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2006
- NOWRANGI, PUSHPA. Associate Professor, Department of Pediatrics SM and Department of Medicine SM  
M.B.B.S. Darbhanga Medical College, India 1978
- NOZAKI, JAMES K. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1995
- NYIRADY, LAURA F. Assistant Professor, School of Nursing SN  
M.S.N. Boston University 1977
- NYIRADY, STEPHEN A. Associate Professor, Department of Basic Sciences SM  
Ph.D. Loma Linda University GS 1972
- OAKLEY, NANCY T. Clinical Instructor in Nursing SN  
M.S. N. Western University of Health Sciences, Pomona, California 2001
- OBENAU, ANDRE. Associate Professor, Department of Radiation Medicine SM and Department of Radiology SM  
Ph.D. University of British Columbia at Vancouver, Canada 1989
- OBORG, KERBY C. Associate Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1991  
Ph.D. Loma Linda University GS 1989
- OBIOCHA, IKECHI. Assistant Professor, Department of Medicine SM  
M.D. University of Connecticut School of Medicine 1999
- O'CALLAGHAN, THOMAS A. Associate Professor, Department of General and Trauma Surgery SM  
M.B.B.S. National University of Ireland 1968
- OCAMPO, NORELA V. Instructor, Pharmacotherapy and Outcomes Science SP  
Pharm.D. Loma Linda University SP 2009
- OCHOA, ALVARO F. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2006
- OCHOA, HUMBERTO R. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of Utah 1983
- OCHOA, JOSE A. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2010
- ODA, KEIJI. Instructor, Department of Epidemiology and Biostatistics PH  
M.P.H. Loma Linda University PH 2006
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D.M.D. Tufts University School of Dental Medicine, Boston, Massachusetts 1991
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Pharm.D. Purdue University, West Lafayette, Indiana 2003
- OH, ERIKA M. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 2004
- OH, JISOO. Assistant Clinical Professor, Department of Epidemiology and Biostatistics  
Dr.P.H. La Sierra University 2005
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M.D. Loma Linda University SM 1990

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D.D.S. Kyungpook National University, South Korea 1981
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M.D. University of Michigan 1986
- OJANO, MAC-REY L. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1997  
D.M.D. Manila Central University, Philippines 1990
- OJOGHO, OKECHUKWU N. Professor, Department of General and Trauma Surgery SM  
M.D. University of California, San Francisco 1986
- OKADA, GEOFFREY TOSHIO. Assistant Professor, Department of Endodontics SD  
D.D.S. Loyola University 1983
- OKUMURA, WESLEY KENT. Assistant Professor, Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 1994
- OLAFSSON, SNORRI. Assistant Professor, Department of Medicine SM  
M.D. University of Iceland 1978
- O-LEE, TSUNGJU. Assistant Professor, Department of Surgery SM  
M.D. University of California, Irvine 2000
- OLIVERIO, MICHAEL R., JR. Assistant Clinical Professor, Department of Family Medicine SM  
M.D. University of Montemorelos, Mexico 1984
- OLSEN, NANCY. Clinical Instructor, Department of Occupational Therapy AH  
M.A. California State University, Northridge 1974
- OLSON, KELLIE M. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1999
- OMAR, SAMAH I. Assistant Professor, Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 2007
- ONUMA, SUSAN D. Assistant Professor, Department of Health Policy and Management PH  
M.B.A. Loma Linda University PH 2008
- OOI, GUCK T. Adjunct Associate Professor, Department of Environmental and Occupational Health PH  
Ph.D. Monash University, Australia 1988
- OPSAHL, MICHELLE T. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1996
- OPSIMOS, CHARALAMBOS. Instructor, Department of Pediatrics SM  
M.D. St. George University, Grenada, British Indies 1999
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D.D.S. Loma Linda University SD 2008
- ORR, BARBARA J. Associate Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1970
- ORR, ROBERT D. Professor, Medical Ethics SM  
M.D. McGill University, Montreal, Quebec, Canada 1966
- ORTIZ-CAMPOS, CESAR. Adjunct Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Universidad Nacional Autonoma de Mexico, Mexico 1972
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M.D. Loma Linda University SM 1993
- OSBORNE, JOHN E. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1979

- OSHIRO, BRYAN T. Associate Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1985
- OSHIRO, KAREN N. Assistant Clinical Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1978
- OSTROWSKI, ROBERT. Assistant Research Professor, Department of Basic Sciences SM  
Ph.D. Polish Academy of Science Med Research Center Warsaw, Poland 2001  
M.D. Medical University of Warsaw, Poland 1994
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M.B.A. University of Phoenix 1998
- OTA, LEH C. Clinical Instructor, Department of Nutrition and Dietetics AH  
M.P.H. Loma Linda University PH 1978
- OTA, MARLENE M. Assistant Professor, Department of Clinical Laboratory Science AH  
B.S. University of Redlands 1981
- OTERO, JAY M. Assistant Professor, Department of Psychiatry SM  
M.D. Medical College of Virginia 1989
- OTSUKA, TAKAHIRO. Assistant Professor, Department of Medicine SM  
M.D. University of Yamanashi, Japan 1987
- OWEN, FAYE DENISE. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. University of Texas Southwestern Medical School 1989
- OWEN, JASON E. Associate Professor, Department of Psychology ST  
Ph.D. University of Alabama at Birmingham 2003
- OWENS, JOHN E. Assistant Professor, Department of Physical Medicine and Rehabilitation SM  
M.D. Loma Linda University SM 2004
- OYAMA, KOTARO. Adjunct Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Nippon Dental University, Japan 1997
- OYAS, NICOLE M. Assistant Professor, Department of Pediatrics SM  
M.D. University of Nevada 2006
- OYOYO, UDOCHUKWU E. Assistant Professor, Department of Dental Educational Services SD  
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D.D.S. Loma Linda University SD 1982
- PADILLA, GERALDINE V. Adjunct Professor of Nursing SN  
Ph.D. University of California, Los Angeles 1971
- PAI, ANITA M. Assistant Professor, Department of Physical Medicine SM  
M.D. Loma Linda University SM 1999
- PAI, RAMDAS G. Professor, Department of Medicine SM  
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- PAI, SHANTHARAM R. Assistant Clinical Professor, Department of Family Medicine SM and Department of Medicine SM  
M.B.B.S. Kasturba Medical College, India 1981
- PAI, SUDHA M. Associate Professor, Department of Medicine SM  
M.B.B.S. Kasturba Medical College, India 1979
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Ph.D. University of Maryland 1997
- PALAGANAS, JANICE C. Instructor, Department of Basic Sciences SM  
M.S.N. University of Pennsylvania 2002
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M.A. California State University, Long Beach 1984

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Department of Family Medicine SM  
D.O. Western University, Pomona, California 1995
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Department of Health Information Management AH  
B.S. Loma Linda University AH 1979
- PANDIT, IVY C. Assistant Professor, Department of  
Medicine SM  
M.B.B.S. Christian Medical College and Hospital,  
India 1978
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Pathology and Human Anatomy SM; Assistant Clinical  
Professor, Department of Clinical Laboratory Science  
AH  
M.D. Loma Linda University SM 1985
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Medicine SM  
M.B.B.S. Seth GS Medical College, India 1995  
M.B.B.S. Pravia Medical Trust College, India 1990
- PARK, CHAN M. Instructor, Department of Oral and  
Maxillofacial Surgery SD  
M.D. Loma Linda University SM 2008  
D.D.S. University of California, Los Angeles 2005
- PARK, HYOUNG J. Assistant Clinical Professor,  
Department of Periodontics SD  
D.D.S. Yonsei University Dental School, South Korea  
1992
- PARK, PAULINE A. Clinical Instructor, School of Nursing  
SN  
B.S. Loma Linda University SN 1969
- PARK, HYOUNG J. Assistant Clinical Professor,  
Department of Periodontics SD  
M.S. Loma Linda University SD 2007  
D.D.S. Yonsei University, Japan 1992
- PARKER, RICHARD L. Associate Clinical Professor,  
Department of Dental Educational Services SD  
M.D. Loma Linda University SM 1991  
D.D.S. Loma Linda University SD 1968
- PARMENTER, NANCIE. Assistant Professor of Nursing  
SN  
M.S.N. University of Portland 1981
- PARRIS, RICHARD K. Assistant Professor, Department of  
Periodontics SD  
D.D.S. University of California, Los Angeles 1979
- PARSI, MANOOCHHEHR G. Assistant Professor,  
Department of Periodontics SD  
D.M.D. Shiraz University, Iran 1979
- PATCHIN, REBECCA J. Assistant Professor, Department  
of Anesthesiology SM  
M.D. Loma Linda University SM 1989
- PATEL, ASHISH. Instructor, Department of Clinical  
Laboratory Science AH  
B.S. Loma Linda University AH 2004
- PATEL, GAUTTAM. Assistant Professor, Department of  
Medicine SM  
M.B.B.S. Jawaharlal Nehru Medical College, India  
1998
- PATEL, HITEN. Clinical Instructor, Department of  
Physician Assistant Sciences AH  
Pharm.D. University of California, San Francisco 2001
- PATEL, JIGNASA G. Assistant Professor, Department of  
Neurology SM  
M.D. New York University School of Medicine 2004
- PATEL, MATILAL C. Assistant Professor, Department of  
Orthopaedic Surgery SM  
M.B.B.S. MS University at Baroda, India 1966
- PATEL, PARUL. Assistant Professor, Department of  
Anesthesiology SM  
M.D. University of Maryland at Baltimore Medical  
School 2004
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of Ophthalmology SM  
M.D. Thomas Jefferson University, Philadelphia 1997

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B.S. Long Beach State University 1984
- PATTERSON, STEPHEN C. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of California, Irvine 1999
- PATTON, WILLIAM C. Associate Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1969
- PATYAL, BALDEV RAJ. Associate Professor, Department of Radiation Medicine SM  
Ph.D. Washington State University 1988
- PAULIEN, JON. Professor of Religion, School of Religion SR  
Ph.D. Andrews University 1987
- PAULO, CYNTHIA ANN. Clinical Instructor, Department of Environmental and Occupational Health PH  
M.S. California State University, San Bernardino 1992
- PAVLOVICH, SHARON. Instructor, Department of Occupational Therapy AH  
B.A. California State University, San Bernardino 2006
- PAYNE, KIMBERLY J. Assistant Professor, Department of Pathology and Human Anatomy SM and Department of Pediatrics SM  
Ph.D. University of Oklahoma Health Sciences Center 1998
- PEABODY, GADIA K. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.D.S. University of Michigan 2001
- PEARCE, WILLIAM. Professor, Department of Basic Sciences SM and Department of Gynecology and Obstetrics SM  
Ph.D. University of Michigan 1979
- PECAUT, MICHAEL JAMES. Associate Research Professor, Department of Radiation Medicine SM, Department of Biochemistry and Microbiology SM, and Biochemistry Program FGS  
Ph.D. University of Colorado at Boulder 1999
- PECKHAM, NORMAN H. Associate Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1962
- PENA, DULCE L. Assistant Professor, Department of Allied Health Studies AH  
J.D. Pepperdine University 1990
- PENDLETON, KAREN S. Assistant Professor, Department of Occupational Therapy AH  
M.A. La Sierra University 1997
- PENNER, DAVID S. Assistant Professor, Department of Health Policy and Management PH  
Ph.D. Andrews University 1987
- PENG, WEI-PING PENNY. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1999
- PENNIECOOK, TRICIA Y. Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.P.H. University of Montemorelos, Mexico 1996  
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- PEREAU, MELISSA J. Assistant Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 2004
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M.D. University of Stellenbosch, South Africa 1995
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D.D.S. Odontologia de Nova Friburgo, Rio de Janeiro 1993

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Department of Pediatric Dentistry SD  
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- PEREZ, YACZAIRA. Assistant Clinical Professor,  
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Ph.D. University of Liverpool, England, UK 1999
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D.O. Western University, Pomona, California 2003
- PESAVENTO, RICHARD D. Assistant Clinical Professor,  
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M.D. University of California, Irvine 1980
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Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2003
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Endodontics SD  
D.D.S. Loma Linda University SD 1961
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Nutrition and Dietetics AH  
M.P.H. Loma Linda University PH 2003
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Ed.D. Loma Linda University SE 1968
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Preventive Medicine SM and Department of  
Epidemiology and Biostatistics PH  
M.D. Loma Linda University SM 1969
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M.S. Loma Linda University SN 2005
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B.Arch. Andrews University 1997
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Epidemiology and Biostatistics PH, Department of  
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M.P.H. Loma Linda University PH 1977
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M.D. College of Medical Evangelists 1947
- PETERSON, GORDON WILLARD. Professor, Department  
of Neurology SM and Department of Physical Medicine  
SM  
M.D. Loma Linda University SM 1974
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Department of Pediatric Dentistry SD  
D.D.S. Loma Linda University SD 1970
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M.B.B.S. Andhra Medical College, India 1994
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Physical Therapy AH  
Ph.D. St. Louis University, Missouri 1976
- PETTI, GEORGE HYACINTH, JR. Professor, Department  
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M.D. Loma Linda University SM 1962

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M.D. Loma Linda University SM 1984
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Ph.D. Osaka University, Japan 1991
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M.A. University of Phoenix 1998
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B.S. Loma Linda University 1983
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M.D. University of Saigon, Vietnam 1978
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M.D. University of California, Los Angeles School of Medicine 1999
- PHATAK, SONAL V. Assistant Professor, Department of Medicine SM  
M.D. University of California, Los Angeles 1999
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M.D. University of Maryland 1996
- PHILLIPS, BARRATT L. Assistant Clinical Professor, Department of Ophthalmology SM  
M.D. University of Utah 1995
- PHILLIPS, RAYLENE M. Assistant Professor, Department of Pediatrics SM  
M.D. University of California, Davis School of Medicine 2005
- PHIPATANAKUL, WESLEY P. Associate Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1998
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D.D.S. Universidad del Valle, Columbia 1990
- PIERSON, CRYSTAL A. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2005
- PIERSON, KENNETH D. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University, SD 2000
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D.D.S. Loma Linda University, SD 1971  
M.P.H. Loma Linda University, PH 1971
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D.O. College of Osteopathic Medicine of the Pacific 1988
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J.D. William Howard Taft University, California 2008  
M.B.A. National University, California 2004
- PIROUTEK, MARY J. Instructor, Department of Emergency Medicine SM  
M.D. University of California, Irvine School of Medicine 2005
- POGACEAN, IOANA E. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2010
- POHOST, GERALD M. Professor, Department of Medicine SM  
M.D. University of Maryland 1967
- POINDEXTER, THERESA P. Adjunct Assistant Professor, Department of Ophthalmology SM  
M.D. Washington University 1978
- POKORNY, CORINNA M. Assistant Professor, Department of Ophthalmology SM  
M.D. Drexel University, Philadelphia 2003

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D.Min. School of Theology, Claremont 1992  
Ph.D. Andrews University 2007
- POLVOORDE, GAIL ANN. Assistant Clinical Professor, Department of Physical Therapy AH  
M.P.T. Loma Linda University AH 2003
- POLYCARPE, MARTINE Y. Adjunct Assistant Professor, Department of Global Health PH  
M.P.H. Loma Linda University PH 2001
- POME CARDENAS, NEDA. Instructor, Department of Health Promotion and Education PH  
M.P.H. Loma Linda University PH 1995
- POMEROY, JONNEL. Instructor, Department of Pediatrics SM  
B.S. Loma Linda University SN 1977
- PORTER, CORWIN. Assistant Clinical Professor, Department of Environmental and Occupational Health PH  
M.P.H. Loma Linda University PH 2000
- POTHIER, PATRICIA KATHLEEN. Associate Professor, School of Nursing SN  
Ph.D. University of San Diego 2001
- POTTS, MICHAEL L. Adjunct Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1975
- POWER, GORDON. Professor, Department of Physiology and Pharmacology SM  
M.D. University of Pennsylvania School of Medicine 1961
- PRALL, FREDERICK R. Instructor, Department of Ophthalmology SM  
M.D. Indiana University 2002
- PRATTE, JOHN E. Assistant Professor, Department of Endodontics SD  
D.D.S. University of Southern California 1987
- PRENDERGAST, THOMAS J. Associate Clinical Professor, Department of Epidemiology and Biostatistics PH  
M.S. University of North Carolina 1972  
M.D. Washington University School of Medicine 1966
- PRESTON, WILLIAM. Associate Professor, Department of Radiation Medicine SM  
Ed.D. University of Rochester, New York 1974
- PRIESTER, TIFFANY C. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2004
- PRINCE, JOHN C. Assistant Professor, Department of Urology SM  
M.D. University of California, San Francisco 1963
- PROCHAZKA, ERNEST J. Associate Clinical Professor, Department of Preventive Medicine SM  
M.D. University of Vienna, Austria 1983
- PROCTOR, DARYL LYNDEN. Assistant Professor, Department of Orthodontics SD  
M.S. Loma Linda University GS 2001  
D.D.S. Loma Linda University SD 1994
- PROCTOR, GEORGE JASON. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. University of Virginia 1993
- PROCTOR, STOY E. Adjunct Assistant Professor, Department of Health Promotion and Education PH  
M.P.H. Loma Linda University PH 1971
- PROUSSAEFS, PERIKLIS THEODORE. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. University of Athens School of Dentistry, Greece 1993
- PRYSTOWSKY, JASON. Assistant Professor, Department of Emergency Medicine SM  
M.D. Northwestern University Medical School, Chicago 2002

- PRZEKOP, PETER R. Assistant Professor, Department of Surgery SM  
D.O. Western University of Health Sciences, Pomona, California 1999
- PUERTO, SOFIA. Assistant Clinical Professor, School of Nursing SN  
Ph.D. Columbia Pacific University 1993
- PULIDO, EMMELINE R. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1988
- PULSIPHER, DAVID ALLEN. Assistant Clinical Professor, Department of Oral and Maxillofacial Surgery SD  
M.D. University of Texas Southwestern Medical Center at Dallas 1997  
D.D.S. Baylor College of Dentistry, Houston, Texas 1993
- PULVERMAN, R. STEVEN. Assistant Clinical Professor, Department of Family Medicine SM  
D.O. College of Osteopathic Medicine 1978
- PUMPHREY, CHARLES D. Assistant Clinical Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1985
- PUNJABI, ANIL P. Associate Clinical Professor, Department of Surgery SM and Associate Professor, Department of Oral and Maxillofacial Surgery SD  
M.D. Case Western Reserve University School of Medicine, Cleveland, Ohio 1993  
D.D.S. University of Southern California Dental School 1990
- PURI, NISHANT. Instructor, Department of Medicine SM  
M.B.B.S. Government Medical College 2003
- PURSLEY, DONALD G. Adjunct Associate Professor, Department of Health Administration PH  
D.B.A. George Washington University, Washington D. C. 1978
- PUTNOKY, GILBERT JOHN. Associate Clinical Professor, Department of Medicine SM  
M.D. St. Louis University School of Medicine, Missouri 1973
- PUVVULA, LAKSHMI K. Assistant Professor, Department of Medicine SM  
M.B.B.S. Guntur Medical College, India 1987
- PYKE, JANELLE. Assistant Professor, Division of General Studies ST  
M.A. Loma Linda University ST 1986
- QIN, XUE ZHONG. Associate Research Professor, Department of Medicine SM  
Ph.D. West Virginia University 1992
- QUAN, WALTER JR. Associate Professor, Department of Medicine SM  
M.D. Ohio State University, Columbus 1986
- QUANSAH, ALFRED K. Assistant Professor, Department of Preventive Medicine SM  
M.P.H. Loma Linda University PH 1999  
M.D. Institute of Medicine and Pharmacy, Clug-Napoa, Romania 1986
- QUIGLEY, ROBERT L. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1974
- QUISHENBERRY, MARY CLAIRE. Clinical Instructor, Department of Dental Hygiene SD  
B.S. Loma Linda University SD 1962
- QURESHI, SONEA I. Assistant Professor, Department of Pediatrics SM  
M.B.B.S. King Edward Medical University, Pakistan 1995
- RACHDAN, ABDUL F. Assistant Professor, Department of Radiation Technology AH  
M.P.H. The University of Illinois, Chicago 1991
- RACKAUSKAS, GULNARA. Instructor, Department of Medicine SM  
M.D. Kaunas University of Medicine, Lithuania 1986

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M.S.N California State University, Long Beach 1995
- RAFFEL, JOSEPH. Assistant Professor, Department of Urology SM  
M.D. Universidad Autonoma De Guadalajara 1977
- RAGHAVAN, RAVI. Professor, Department of Pathology and Human Anatomy SM; Assistant Professor, Department of Neurosurgery SM  
M.B.B.S. Calicut Medical College, India 1980
- RAHMAN, MAISARA I. Assistant Professor, Department of Family Medicine SM  
M.D. American University of the Caribbean 2005
- RAINS, SHASTIN. Instructor, Department of Pharmacotherapy and Outcomes Science SP  
M.A. University of Redlands
- RAIS, SHIRLEY MARIE. Assistant Librarian, University Libraries  
M.L.S. San Jose State University 1992
- RAISZADEH, MOUSSA. Assistant Professor, Department of Radiology SM  
Pharm.D. University of Tabriz, Iran 1971
- RAJARAM, SUJATHA. Assistant Professor, Department of Nutrition PH  
Ph.D. Purdue University, Indiana 1993
- RAMAL, EDELWEISS R. Associate Professor, School of Nursing SN  
Ph.D. Andrews University 2002
- RAMBHAROSE, JOHN ANTHONY. Assistant Clinical Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1989
- RAMIREZ, JOHNNY. Professor, School of Religion SR  
Ed.D. Harvard University 1993
- RAMOS, PATRICIA. Clinical Instructor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2008
- RANCHHOD, ANISHA M. Clinical Instructor, Department of Pediatric Dentistry SD  
D.D.S. University of the Pacific, San Francisco 2006
- RANDOLPH, SAMUEL M. Instructor, Department of Radiology SM  
M.D. Loma Linda University SM 2005
- RAO, RAVINDRA. Professor, Department of Pediatrics SM  
M.B.B.S. Karnataka University MR Medical College, India 1975
- RASI, ALFREDO. Associate Professor, Department of Cardiovascular and Thoracic Surgery SM  
M.D. Buenos Aires Medical School, Argentina 1961
- RASMUSSEN, THOMAS. Assistant Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1974
- RASOOL, SHUJA. Instructor, Department of Medicine SM  
M.B.B.S. Allama Medical College, Lahore, Pakistan 2000
- RATHBUN, W. EUGENE. Professor, Department of Periodontics SD  
Ph.D. University of California, Los Angeles 1970  
D.D.S. Loma Linda University SD 1965
- RATSIU, JOANA. Assistant Professor, Department of Anesthesiology SM  
M.D. Universitatea de Medicina si Farmacie Carol Davila
- RAUSER, MICHAEL EDWARD. Assistant Professor, Department of Ophthalmology SM  
M.D. University of Maryland 1990
- RAY, ANDREA O. Assistant Professor, Department of Surgery SM  
M.D. Hahnemann School of Medicine, Philadelphia, Pennsylvania 1994
- RAZA, ANWAR S. Associate Professor, Department of Pathology and Human Anatomy SM  
M.B.B.S. SIND Medical College, Pakistan 1983

- RAZA, SYED J. Assistant Clinical Professor, Department of Medicine SM  
M.B.B.S. Dow Medical College, Karachi, Pakistan 1989
- RAZZOUK, ANEES J. Professor, Department of Cardiovascular and Thoracic Surgery SM and Department of Pediatrics SM  
M.D. Loma Linda University SM 1982
- REA, BRENDA L. Assistant Clinical Professor, Department of Health Promotion and Education PH  
M.P.T. Loma Linda University AH 1995
- REA, RONALD MILTON. Assistant Professor, Department of Physical Therapy AH  
M.P.T. Loma Linda University AH 1994
- REARRICK, JENNIFER R. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2009
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M.B.B.S. Osmania Medical College, India 1981
- REDDY, VISWANATHA J. Assistant Clinical Professor, Department of Psychiatry, SM  
M.D. American University of the Caribbean, Netherlands Antilles 1998
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M.D. Loma Linda University SM 1972
- REEVES, CLIFTON D. Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1960
- REEVES, MARK E. Associate Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1992  
Ph.D. University of California, Los Angeles 1990
- REEVES, MICHELLE E. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1986
- REIBLING, ELIZABETH E. Associate Professor, Department of Emergency Medicine SM  
Ph.D. University of California, Irvine 2004
- REINHOLD, ESKILD A. Associate Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1968
- REISCHE, SUSAN E. Assistant Clinical Professor, Department of Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 1989
- REISWIG, PHILIP H. Associate Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1961
- RENDON, STEWART E. Assistant Professor, Department of General and Trauma Surgery SM  
M.D. University of California, Los Angeles 1998
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M.D. Dalhousie University Medical School, Nova Scotia, Canada 1980
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D.D.S. Loma Linda University SD 2005
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M.D. Loma Linda University SM 1991
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M.D. University of Connecticut 2001
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M.D. Loma Linda University SM 1998  
Ph.D. Loma Linda University GS 1998
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M.S. Loma Linda University SD 2002  
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Ed.D. Loma Linda University SE 1983
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Ph.D. University of Chicago Divinity School 1974
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M.D. Oral Roberts University, Oklahoma 1989
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- RICKETTS, HERMAN H. L. Associate Clinical Professor, Department of Medicine SM  
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- RIESEN, SHARON K. Associate Professor, Department of Pediatrics SM  
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Ph.D. Kansas State University 1989
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M.D. Loma Linda University SM 1987
- RIMMER, STEVEN O. Assistant Clinical Professor, Department of Ophthalmology SM  
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Ph.D. University of Missouri-Columbia 2000
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M.D. Loma Linda University SM 1979
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B.S. Loma Linda University AH 1982
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D.Min. Fuller Theological Seminary 1996
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M.D. Universidad de Montemorelos, Mexico 1973
- ROBINSON, MICHAEL J. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1995
- ROBLES, ANTONIO E. Professor, Department of General and Trauma Surgery SM  
M.D. Buenos Aires University, Argentina 1972
- ROCHE, SUSAN. Associate Professor, Department of Oral Diagnosis, Radiology, and Pathology SD  
D.D.S. Loma Linda University SD 1993
- RODDY, SARAH M. Associate Professor, Department of Pediatrics SM and Department of Neurology SM  
M.D. Loma Linda University SM 1980
- ROE, PHILLIP. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2003
- ROFAEL, RAFIK R. Assistant Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Cairo University Dental School 1971
- ROGERS, FRANK ROBERT. Associate Professor, Department of Surgery SM  
M.D. Loma Linda University SM 1974
- ROGERS, MARK. Clinical Instructor, Department of Cardiopulmonary Sciences AH  
B.S. Loma Linda University AH 1988
- ROGERS, THOMAS CHARLES. Associate Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1983

- ROGGENKAMP, CLYDE L. Associate Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1970
- ROJAS, HEATHER L. Assistant Professor, Department of  
Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 2003
- ROJAS, JORGE I. Assistant Clinical Professor, Department  
of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2008
- ROLAND, DAVID DARYL. Assistant Professor,  
Department of Endodontics SD  
D.D.S. Loma Linda University SD 1978
- ROMAN, MAHER ABDELSAYED. Assistant Professor,  
Department of Medicine SM  
M.D. Cairo University, Egypt 1984
- ROMANO, THOMAS J. Assistant Professor, Department  
of Medicine SM  
M.D. Yale University 1973
- RONAN, ANN M. Clinical Instructor, Department of  
Family Medicine SM  
M.A. University of Rhode Island 1995
- ROOS, PHILIP J. Associate Professor, Department of  
Medicine SM and Department of Physiology and  
Pharmacology SM  
M.D. Loma Linda University SM 1976
- ROPACKI, SUSAN A. Associate Professor, Department of  
Psychology ST  
Ph.D. University of Rhode Island 2003
- ROSARIO, CAROLAN R. Assistant Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1988
- ROSAASEN, HEATHER A. Assistant Clinical Professor,  
Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2003
- ROSENQUIST, ROBERT C., JR. Assistant Clinical  
Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1977
- ROSS, TERI HAINES. Instructor, Department of Clinical  
Laboratory Science AH  
B.S. Loma Linda University AH 1982
- ROSSI, CARL J., JR. Associate Professor, Department of  
Radiation Medicine SM  
M.D. Loyola University Stritch School of Medicine,  
Chicago, Illinois 1988
- ROSSI, JOHN JOSEPH. Adjunct Professor, Department of  
Basic Sciences SM  
Ph.D. University of Connecticut 1976
- ROSTOMIAN, SOUREN A. Instructor, Department of  
Oral and Maxillofacial Surgery SD  
D.D.S. Yerevan State University, Armenia 1994
- ROTH, ARIEL A. Adjunct Professor, Department of Earth  
and Biological Sciences ST  
Ph.D. University of Michigan 1955
- ROTH, KENNETH. Associate Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. Marquette Medical School, Wisconsin 1963
- ROTH, PATRICIA J. Assistant Clinical Professor,  
Department of Psychiatry SM  
Ph.D. Trinity School of Graduate Studies, British  
Columbia 2000
- ROTH, WILLIAM G. Associate Professor, Department of  
Psychiatry SM  
Psy.D. Biola University, Los Angeles, California 1986
- ROUSE, GLENN ALLEN. Associate Professor,  
Department of Radiology SM; Associate Clinical  
Professor, Department of Radiation Technology AH  
M.D. Loma Linda University SM 1976
- ROUSE, TERRI LYNNE. Instructor, Department of Health  
Information Management AH  
B.S. Loma Linda University AH 1994
- ROW, PAUL K. Adjunct Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1999

- ROWE, MARK ROBERT. Associate Professor, Department of Surgery SM and Department of Pediatrics SM  
M.D. Loma Linda University SM 1994
- ROWSELL, EDWARD H. Assistant Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1994  
Ph.D. Loma Linda University GS 1994
- RUCKLE, HERBERT C. Professor, Department of Urology SM  
M.D. Loma Linda University SM 1986
- RUDATSIKIRA, EMMANUEL MITSINDO. Associate Professor, Department of Epidemiology and Biostatistics PH  
Dr.P.H. Loma Linda University PH 2005  
M.D. University of Kinshasa, Republic of the Congo 1978
- RUDICH, MARC D. Assistant Clinical Professor, Department of Surgery SM  
M.D. Albany Medical College, New York 1971
- RUDOMETKIN, NATHAN J. Assistant Clinical Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 2001
- RUGGLES, DANIEL K. Assistant Professor, Department of Orthopaedic Surgery SM  
D.O. Ohio University College of Osteopathic Medicine 2003
- RUH, KATJA. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1991
- RUIZ, CYNTHIA CHAVEZ. Assistant Clinical Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1981
- RUNDLE, CHARLES H. Assistant Research Professor, Department of Medicine SM  
Ph.D. University of Alabama 1996
- RUNGCHARASSAENG, KITICHAJ. Associate Professor, Department of Orthodontics SD  
D.D.S. Chulalongkorn University, Thailand 1991
- RUNYON, BRUCE A. Professor, Department of Medicine SM  
M.D. University of Iowa 1976
- RUSCH, ROY M. Assistant Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1965
- RUSHING, ROSANNE. Assistant Professor, Department of Health Promotion and Education PH and Department of Global Health PH  
Dr.P.H. London School of Hygiene and Tropical Medicine 2003
- RUSHING, SHARON L. Assistant Professor, Department of Global Health PH and Department of Health Policy and Management PH  
M.P.H. Loma Linda University PH 2003
- RUSSELL, FINDLAY E. Research Professor, Department of Neurosurgery SM  
Ph.D. Laurence University, Wisconsin 1974  
M.D. College of Medical Evangelists 1950
- RUTEBUKA, OBED BASHORA. Assistant Professor, Department of Environmental and Occupational Health PH  
Ph.D. Loma Linda University GS 1996
- RUTGARD, JEFF J. Adjunct Assistant Professor, Department of Ophthalmology SM  
M.D. University of Illinois 1977
- RYAN, BARBARA J. Instructor, Department of Plastic and Reconstructive Surgery SM  
M.D. Mayo Medical School, Rochester, Minnesota 1996
- RYNEARSON, R. DAVID. Associate Professor, Department of Orthodontics SD and Orthodontics and Dentofacial Orthopaedics Program FGS  
D.D.S. Loma Linda University SD 1971

- SAATY, HANS P. Assistant Professor, Department of Radiology SM  
M.D. Loma Linda University SM 1982
- SABATÉ, JOAN. Professor, Department of Epidemiology and Biostatistics PH and Department of Nutrition PH  
M.D. Universidad Autònoma de Barcelona, Catalonia 1978
- SABETI, MOHAMAD. Assistant Professor, Department of Endodontics SD  
D.D.S. University of Texas Health Science Center, Houston 1993
- SADJADI, SEYED-ALI. Associate Professor, Department of Medicine SM  
M.D. University of Tehran Medical School, Iran 1972
- SADRIEH, KIARASH. Assistant Professor, Department of Pediatrics SM  
M.D. Finch University of Health Sciences, Chicago, Illinois 2001
- SAHASRANAM, PREM. Assistant Clinical Professor, Department of Medicine SM  
M.B.B.S. Madras Medical College 1999
- SAHAY, LEENA. Assistant Professor, Department of Medicine SM  
M.B.B.S. Lady Hardinge Medical College, India 1993
- SAHEEBA, NEETA C. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. Grant Medical School, Bombay, India 1982
- SAHL, ERIK F. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2006
- SAHNEY, SHOBHA. Associate Professor, Department of Pediatrics SM  
M.B.B.S. Lady Hardinge Medical College of Delhi University, India 1969
- SAKALA, ELMAR P. Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1973
- SAKS, GERALD. Clinical Professor, Department of Pediatrics SM  
M.D. New York University, Buffalo 1960
- SALAMAT, AREZOU. Instructor, Department of Occupational Therapy AH  
M.O.T. Pacific University, Oregon 2000
- SALARY, TISHA L. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2001
- SALEMI, CHARLES S. Assistant Clinical Professor, Department of Epidemiology and Biostatistics PH  
M.D. Tufts University School of Medicine, Boston, Massachusetts 1965
- SALVADOR, HERMINIA S. Associate Professor, Department of Gynecology and Obstetrics SM  
M.D. Far Eastern University, Philippines 1961
- SALZMAN, STEVE. Assistant Clinical Professor, Department of Family Medicine SM  
M.D. Autonomous University of Guadalajara, Mexico 1982
- SANCHEZ, ALBERT S. Adjunct Professor, Department of Nutrition PH  
Dr.P.H. University of California, Los Angeles 1968
- SANCHEZ, CHERYL. Associate Professor, Department of Pediatrics SM  
M.D. University of the Philippines College of Medicine 1986
- SANCHEZ, MARTHA C. Assistant Research Professor, Department of Radiation Medicine SM  
Ph.D. Loma Linda University FGS 2008
- SANDBERG, LAWRENCE. Clinical Research Professor, Department of Pathology and Human Anatomy SM and Department of Medicine SM  
Ph.D. University of Oregon School of Health Sciences 1966  
M.D. University of Illinois 1957

- SANDERS, ISAAC. Emeritus Professor, Department of Radiology SM  
M.D. State University College of Medicine at New York 1955
- SANDERS, JOYCE HYUNA. Assistant Clinical Professor, Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2003
- SANDLIN, CONSTANCE P. Associate Clinical Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1971
- SANDOVAL, MARK D. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 2005
- SANDRO, JACQUELIN S. Clinical Instructor, Department of Clinical Laboratory Science AH  
B.S. University of California, Los Angeles 1967
- SANDY, GISELLA L. Assistant Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1998
- SANDY, HANNAH P. Assistant Professor, School of Nursing SN  
M.S.N. University of Colorado Health Sciences Center 2006  
M.D. University of Colorado Health Sciences Center 2004
- SANFORD, MICHAEL A. Assistant Clinical Professor, Department of Urology SM  
M.D. New York Medical College 1994  
B.S. Loma Linda University AH 1983
- SANTANA, RUBEN R. Instructor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2002  
D.M.D. University of the Philippines, Philippines 1985
- SAPIAN, SCHUBERT L. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1997
- SARPY, NANCY LOUISE. Assistant Professor, School of Nursing SN  
M.S. Loma Linda University GS 1993
- SASAKI, GORDON H. Clinical Professor, Department of Surgery SM  
M.D. Yale University 1968
- SASSOUNIAN, MOJGAN. Clinical Instructor, Department of Clinical Laboratory Science AH  
B.S. University of California, Irvine 1982
- SAUKEL, G. WILLIAM. Associate Professor, Department of Pathology and Human Anatomy SM  
M.D. Medical University of South Carolina 1980
- SAVEDRA, MARILYN K. Adjunct Professor, School of Nursing SN  
D.N.S. University of California, San Francisco 1973
- SAWYER MACKNET, DANIELLE C.A. Assistant Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 2003
- SCARIATI, PAULA D. Associate Clinical Professor, Department of Preventive Medicine SM  
D.O. New York College of Osteopathic Medicine 1989
- SCHAEPPER, MARY A. Associate Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 1996
- SCHANTZ, BORGE. Professor, Department of Allied Health Studies AH  
Ph.D. Fuller Theological Seminary 1983
- SCHARF, KEITH. Instructor, Department of Surgery SM  
D.O. Lake Erie College of Osteopathic Medicine 2005
- SCHARFFENBERG, JOHN A. Adjunct Professor, Department of Nutrition PH  
M.D. Loma Linda University SM 1948
- SCHEER, PETER MATTHIAS. Assistant Clinical Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1984

- SCHILL-DEPEW, AMY E. Assistant Professor,  
Department of Medicine SM  
M.D. Loma Linda University 2004
- SCHILLING, LAURA J. Instructor, Department of  
Pediatrics SM  
M.D. Loma Linda University SM 2001
- SCHLAERTH, KATHERINE R. Associate Professor,  
Department of Family Medicine SM  
M.D. State University of New York at Buffalo School  
of Medicine 1968
- SCHLUNT MICHELLE L. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1993
- SCHMIDT, MERRILL E. Associate Clinical Professor,  
Department of Endodontics SD  
D.D.S. Loma Linda University SD 1962
- SCHNEIDER, KIMBER L. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1971
- SCHNEIDER, LOUISE E. Associate Professor, Department  
of Nutrition PH and Department of Nutrition and  
Dietetics AH  
Dr.P.H. Loma Linda University PH 1976
- SCHNEIDER, STUART BENJAMIN. Clinical Instructor,  
Department of Clinical Laboratory Science AH  
M.B.A. University of Laverne, Los Angeles, California  
1991
- SCHOENE, HERMAN R. Associate Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. University of Buffalo, New York 1956
- SCHRODER, HOBE J. Associate Research Professor,  
Department of Physiology and Pharmacology SM  
Ph.D. University of Hamburg, Germany 1976
- SCHULTE, REINHARD W. Associate Professor,  
Department of Radiation Medicine SM and Department  
of Radiation Medicine SM  
M.D. Cologne University, Germany 1984
- SCHULTZ, GERALD. Associate Clinical Professor,  
Department of Ophthalmology SM  
M.D. New York Medical College 1963
- SCHULZ, ELOY E. Professor, Department of Radiology  
SM  
M.D. National University at Cordoba, Argentina 1966
- SCHUTZ, LARRY E. Associate Clinical Professor,  
Department of Psychology ST  
Ph.D. University of Kentucky 1983
- SCHWAB, ERNEST ROE III. Associate Professor,  
Department of Allied Health Studies AH and Allied  
Health Studies Program FGS  
Ph.D. Loma Linda University GS 1989
- SCHWARTZ, BRIAN P. Assistant Professor, Department  
of Medicine SM  
M.D. Loma Linda University SM 1989
- SCHWARTZ, LYNETTA R. Assistant Professor,  
Department of Medicine SM  
M.D. Loma Linda University 1982
- SCOFIELD, N. MICHAEL. Adjunct Assistant Professor,  
Department of Health Information Management AH  
M.B.A. University of California, Los Angeles 1973
- SCOTT, KENDALL G. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. University of Southern California 1979
- SCOTT, LOREEN KAY. Clinical Instructor, Department of  
Cardiopulmonary Sciences AH  
B.A. California State University, San Bernardino 1996
- SCOTT, MICHAEL D. Assistant Professor, Department of  
Physical Medicine and Rehabilitation SM  
M.D. Drew/University of California, Los Angeles  
School of Medicine 1989
- SEABAUGH, VALERIE A. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1998

- SEALE, STUART A. Adjunct Assistant Professor,  
Department of Preventive Medicine SM  
M.D. Loma Linda University SM 1979
- SEAVEY, TIMOTHY. Instructor, Department of Radiation  
Technology AH  
B.S. Loma Linda University AH 2007
- SECOR, RONALD J. Assistant Professor, Department of  
Dental Educational Services SD  
M.B.A. University of LaVerne, Los Angeles,  
California 1997
- SEDRAK, JOSEPH F. Assistant Professor, Department of  
Medicine SM  
M.D. University of South Alabama 1976
- SEGURA, GEORGE A. Assistant Professor, Department of  
Pediatrics SM  
M.D. Universidad de Montemorelos, Mexico 1981
- SEGURA, THOMAS R. JR. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. University of Southern California 1985
- SEHDEV, MOHAN K. Assistant Professor, Department of  
Plastic and Reconstructive Surgery SM  
M.D. University of Bombay, India 1963
- SEHEULT, ROGER D. Assistant Clinical Professor,  
Department of Medicine SM and Department of  
Physician Assistant Sciences AH  
M.D. Loma Linda University SM 2000
- SEHGAL, GURMEET K. Instructor, University Libraries  
M.L.S. Texas Women's University 2005
- SEIBERLING, KRISTIN A. Assistant Professor,  
Department of Otolaryngology and Head and Neck  
Surgery SM  
M.D. Northwestern University, Illinois 2002
- SELLAS, JAMES P. Assistant Professor, Department of  
Oral and Maxillofacial Surgery SD  
D.D.S. Loma Linda University SD 1983
- SELTZER, SHARON. Assistant Professor, Department of  
Pediatrics SM  
M.D. Temple University School of Medicine,  
Philadelphia 2003
- SENTENN, GREGG A. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. Loma Linda University SM 1972
- SENTHIL, MAHESWARI. Assistant Professor,  
Department of Surgery SM  
M.D. Madurai Medical College 1998
- SERABYN, CYNTHIA L. Assistant Professor, Department  
of Medicine SM  
D.O. College of Osteopathic Medicine of the Pacific  
1991
- SERRAO, STEVE. Assistant Professor, Department of  
Health Policy and Management PH  
M.P.H. Loma Linda University PH 2006
- SERROS, EDWARD R. Associate Clinical Professor,  
Department of Medicine SM  
M.D. Stanford University 1974
- SERVIN-ABAD, LUIS A. Assistant Professor, Department  
of Medicine SM  
M.D. Universidad de Panama School of Medicine,  
Panama City 1997
- SEVILLA, CONRADO C. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. De La Salle University College of Medicine,  
Philippines 1987
- SHABAHANG, SHAHROKH. Associate Clinical  
Professor, Department of Endodontics SD  
D.D.S. University of the Pacific 1987
- SHAFFER, AUDREY JEANNE. Assistant Clinical  
Professor, Department of Health Information  
Management AH  
M.A. Central Michigan University 1982

- SHAH, MANOJ C. Associate Professor, Department of Pediatrics SM  
M.B.B.S. University of Baroda, India 1978
- SHAH, NITIN. Professor, Department of Anesthesiology SM  
M.D. Baroda Medical College 1979
- SHAH, PRAFUL C. Assistant Clinical Professor, Department of Pediatrics SM  
M.B.B.S. Grant Medical College, India 1976
- SHAIN, LINDA J. Instructor, Department of Clinical Laboratory Science AH  
B.S. Loma Linda University AH 1981
- SHAKESPEARE, BRENT E. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1988
- SHANK, AUDREY CHAPIN FISHER. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 2001
- SHANK, CHRISCHELLE L. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 2004
- SHANK, GREGORY SCOTT. Assistant Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1999
- SHANKEL, TAMARA MICHELLE. Associate Professor, Department of Pediatrics SM and Department of Medicine SM  
M.D. Loma Linda University SM 1988
- SHARBINI, WAYEL A. Assistant Professor, Department of Cardiopulmonary Sciences, AH  
M.P.H. Loma Linda University PH 1999
- SHAREEF, TAHSEEN N. Assistant Clinical Professor, Department of Medicine SM  
M.D. Medical College of Pennsylvania 1993
- SHARKEY, JEANNINE. Adjunct Assistant Professor, School of Nursing SN  
M.S.N. California State University, Long Beach 1995
- SHARMA-ARORA, AKANKSHI A. Adjunct Assistant Professor, Department of Health Policy and Management PH  
M.H.A. Loma Linda University PH 1998
- SHARP, BRIAN D. Assistant Professor, Department of Communication Sciences and Disorders AH  
M.S. University of Redlands 1995
- SHAUGHNESSY, PAIGE. Professor, Department of Communication Sciences and Disorders AH  
Ph.D. University of Utah 1985
- SHAVLIK, DAVID JOSEPH. Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.P.H. Loma Linda University PH 1997
- SHAVLIK, GERALD W. Adjunct Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.P.H. Loma Linda University PH 1971
- SHAW, DOMINIQUE M. Assistant Professor, Department of Gynecology and Obstetrics SM  
M.D. University of California, Los Angeles 2001
- SHAW, KATHRYN J. Assistant Clinical Professor, Department of Gynecology and Obstetrics SM  
M.D. University of Southern California 1983
- SHEHATA, MARIANNE. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2003
- SHELDON, RICHARD L. Clinical Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1968
- SHENG, MATILDA. Assistant Research Professor, Department of Medicine SM and Department of Basic Sciences SM  
Ph.D. Virginia Polytechnic Institute and State University 1996
- SHEPARD, ANDREW. Instructor, Department of Radiation Technology AH  
B.S. Loma Linda University AH 1998

- SHEPERD, MICHAEL D. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Loma Linda University SM 1980
- SHEPHERD, JEFFREY C. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1984
- SHEPHERD, JERI J. Adjunct Assistant Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1986
- SHERIDAN, ALLAN. Assistant Professor, Department of  
Orthodontics SD  
D.D.S. Case Western Reserve University, Cleveland,  
Ohio 1964
- SHERIDAN, CLARE M. Associate Professor, Department  
of Pediatrics SM and Department of Emergency  
Medicine SM  
M.B.Ch.B. University College at Dublin, Ireland 1973
- SHERIDAN, FRANK P. Assistant Clinical Professor,  
Department of Pathology and Human Anatomy SM  
M.B.Ch.B. University College at Dublin, Ireland 1971
- SHERMAN, MARK D. Assistant Professor, Department of  
Ophthalmology SM  
M.D. Albert Einstein Medical College 1985
- SHERWIN, THOMAS S. Associate Professor, Department  
of Emergency Medicine SM; Assistant Professor,  
Department of Pediatrics SM  
M.D. Loma Linda University SM 1989
- SHERZAI, ABDULLAH. Assistant Professor, Department  
of Neurology SM  
M.D. Eastern Virginia Medical School 1995
- SHI, WEI-XING. Professor, Department of Pharmaceutical  
Sciences SP  
Ph.D. Yale University School of Medicine 1990
- SHIE, JOHN M. Assistant Professor, Department of  
Gynecology and Obstetrics SM  
M.D. Ohio State University 1983
- SHIMADA, TAKAAKI. Adjunct Instructor, Department of  
Allied Health Studies AH  
M.S. Tokyo Metropolitan University Graduate School  
of Science 2007
- SHIN, ANTHONY S. Assistant Professor, Department of  
Psychiatry SM  
M.D. Seoul National University, South Korea 1983
- SHINGU, NAOHITO. Adjunct Instructor, Department of  
Allied Health Studies AH  
M.S. Hiroshima University, Japan 2000
- SHIU, WILFRED W. Assistant Clinical Professor,  
Department of Preventive Medicine SM  
M.D. Loma Linda University SM 1990
- SHOJI, HIROMU. Clinical Professor, Department of  
Orthopaedic Surgery SM  
M.D. University of Tokyo Faculty of Medicine, Japan  
1964
- SHOOK, JAMES E. Associate Professor, Department of  
Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1977
- SHOVER, HEATHER T. Assistant Clinical Professor,  
Department of Preventive Medicine SM  
M.D. University of California, Los Angeles 1996
- SHRADER, JOHN A. Assistant Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1979
- SHU, STANFORD K. Assistant Professor, Department of  
Pediatrics SM and Department of Neurology SM  
M.D. Loma Linda University SM 1992
- SIAPCO, GINA S. Associate Professor, Department of  
Nutrition PH  
Dr.P.H. Loma Linda University PH 2004
- SICCAMA, MELISSA D. Assistant Professor, Department  
of Pediatrics SM  
M.D. Loma Linda University SM 2004

- SIDDIGHI, SAM. Instructor, Department of Gynecology and Obstetrics SM  
M.D. New York Medical College 2001
- SIDDIQUI, KHWAJA A. Clinical Instructor, Department of Family Medicine SM  
M.D. Kabul University School of Medicine 1962
- SIEGEL, KIMBERLY L. Assistant Professor, Department of Preventive Medicine SM  
M.P.H. Loma Linda University PH 2005  
M.D. University of New Mexico 2001
- SILBERSTEIN, JEANNE F. Assistant Clinical Professor, Department of Nutrition PH  
M.S. University of Hawaii 1984
- SILBERSTEIN, MICHAEL J. Professor, Department of Radiology SM  
M.D. University of Witwatersrand Johannesburg, South Africa 1967
- SILSTON, STEPHEN MICHAEL. Assistant Professor, Department of Periodontics SD  
D.D.S. Indiana University 1971
- SILVA, VASTHI VIVIAN. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1979
- SILVET, HELME. Assistant Professor, Department of Medicine SM  
M.D. Tartu University, Estonia 1993
- SILVIA, MARY. Assistant Professor, Department of Pediatrics SM  
M.D. Harvard Medical School 2001
- SIMENTAL, ALFRED A., JR. Assistant Professor, Department of Surgery SM and Department of Pediatrics SM  
M.D. Loma Linda University SM 1995
- SIMMS, PAUL B. Adjunct Assistant Professor, Department of Health Administration PH  
M.P.H. University of Michigan 1993
- SIMMONS, SHIRLEY A. Adjunct Assistant Professor, Department of Health Policy and Management PH  
M.A. University of Phoenix 1999
- SIMON, JAMES H. Lecturer, Department of Endodontics SD  
D.D.S. Temple University, Philadelphia 1961
- SIMON, LAUREN MERYL. Associate Professor, Department of Family Medicine SM  
M.D. Hahnemann University, Philadelphia 1990
- SIMPSON, CHERYL J. Professor, Department of Counseling and Family Science ST  
Ph.D. University of Oregon 1980
- SIMPSON, LINDSEY M. Instructor, Department of Cardiopulmonary Sciences AH  
B.S. Loma Linda University AH 2006
- SIMPSON, WILLIAM ROBERT. Assistant Professor, Department of Psychiatry SM  
M.A. University of Maryland 1974
- SINCLAIR, RYAN G. Assistant Professor, Department of Environmental and Occupational Health PH  
Ph.D. Tulane University, New Orleans 2006
- SINGH, PRAMIL. Associate Professor, Department of Epidemiology and Biostatistics PH and Epidemiology and Biostatistics Program FGS  
Dr.P.H. Loma Linda University PH 1999
- SINGHA, SAHEEBA. Assistant Professor, Department of Restorative Dentistry SD  
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- SINGHVI, AJEET RAJ. Assistant Clinical Professor, Department of Medicine SM  
M.B.B.S. SMS Medical School, University of Rajasthan, Rajasthan 1973
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M.D. Loma Linda University SM 1995
- SKORETZ, RANDALL WAYNE DANIEL. Assistant  
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- SKUBIC, JOHN W. Assistant Clinical Professor,  
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M.D. University of California, Los Angeles 1980
- SLATER, JAMES M. Professor, Department of Radiation  
Medicine SM  
M.D. Loma Linda University SM 1963
- SLATER, JAMES B. Assistant Clinical Professor,  
Department of Radiology SM and Department of  
Radiation Medicine  
Ph.D. University of Southern California 1983
- SLATER, JERRY D. Professor, Department of Radiation  
Medicine SM  
M.D. Loma Linda University SM 1982
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Maxillofacial Surgery SD  
M.S. Indiana University 1982  
D.D.S. University of California, Los Angeles 1975
- SLATER, SHELLEY K. Clinical Instructor, Department of  
Dental Hygiene SD  
B.S. Loma Linda University SD 1980
- SLJUKA, KATHERINE E. Instructor, Department of  
Preventive Medicine SM  
M.D. Loma Linda University SM 2000
- SLOOP, R. RICHARD. Adjunct Associate Professor,  
Department of Neurology SM  
M.D. Loma Linda University SM 1986
- SMALL, MARY L. Associate Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1966
- SMITH, BRUCE E. Assistant Clinical Professor,  
Department of Preventive Medicine SM and  
Department of Global Health PH  
M.D. University of Texas at San Antonio 1975
- SMITH, DENNIS. Associate Professor, Department of  
Periodontics SD  
M.S. University of Washington 1976  
D.D.S. University of Southern California 1971
- SMITH, DOUGLAS C. Professor, Department of  
Radiology SM  
M.D. Loma Linda University SM 1966
- SMITH, DUSTIN DAVID. Associate Professor,  
Department of Emergency Medicine SM  
M.D. Texas Technical University Health Sciences  
Center 1998
- SMITH, JASON C. Associate Professor, Department of  
Radiology SM  
M.D. Loma Linda University SM 1996
- SMITH, JODI O. Assistant Clinical Professor, Department  
of Ophthalmology SM  
M.D. Loma Linda University SM 1994
- SMITH, ROBERT T. Assistant Professor, Department of  
Medicine SM  
M.D. Loma Linda University 1981
- SMITH, SCOTT C. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University 2009  
B.A. Walla Walla College 1999
- SNIDER, DOUGLAS H. Assistant Professor, Department  
of Endodontics SD  
D.D.S. Loma Linda University SD 1983
- SODERBLOM, ROBERT E. Associate Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1963
- SOEPRONO, FRED F. Associate Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1973

SOGIOKA, NORMAN Y. Assistant Clinical Professor,  
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SOJI, TSUYOSHI. Adjunct Professor, Department of  
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Ph.D. Jikei University, Japan 1978

SOK, JOHNNY C. Assistant Professor, Department of  
Otolaryngology and Head/Neck Surgery SM  
M.D. New York University 2002  
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SOLOMON, NAVEENRAJ L. Assistant Professor,  
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SONAWALA, MEHUL S. Instructor, Department of  
Medicine SM  
M.B.B.S. Grant Medical College, India 1992

SONG, GRACE E. Assistant Clinical Professor,  
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SONNE, JANET L. Adjunct Professor, Department of  
Psychology ST  
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SORAJJAKOOL, SIROJ. Professor, School of Religion SR  
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SORENSEN, PATRICIA M. Assistant Clinical Professor,  
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SORRELS, RONALD L. Adjunct Assistant Professor,  
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Pediatric Dentistry SD  
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Ph.D. Catholic University of Chile, Chile 1994

SOWERS, LAWRENCE C. Professor, Department of  
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SPARKS, STEVEN R. Associate Professor, Department of  
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SPEARMAN, CHARLES B. Assistant Professor,  
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- SPRENGEL, JEAN E. Assistant Clinical Professor,  
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- SRIKUREJA, WICHIT. Assistant Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1997
- SRINIVASAN, BALACHANDRAN D. Clinical Professor,  
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M.D. Columbia University 1967
- SRISKANDARAJAH, MALATHY. Assistant Professor,  
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Ph.D. Lucknow University at Lucknow, India 1992
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Ph.D. Loma Linda University GS 1999
- STACY, PANADDA MANOONKITTIWONGA. Assistant  
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- STANHISER, RUTH S. Assistant Clinical Professor,  
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M.D. Loma Linda University SM 1975
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M.S. Loma Linda University GS 1991
- STAPLES-EVANS, HELEN MURIEL. Assistant Professor,  
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- ST. CLAIR, JENNIFER C. Assistant Professor, Department  
of Communication Sciences and Disorders AH  
M.S. Loma Linda University GS 1999
- STEELE, ROBERT. Associate Professor, Department of  
Emergency Medicine SM and Associate Professor,  
Department of Pediatrics SM  
B.S. Loma Linda University SD 1997  
M.D. Wayne State University, Michigan 1996
- STEFFES, BRUCE C. Associate Professor, Department of  
Surgery SM  
M.D. University of Michigan, Ann Arbor 1976
- STEINER, ANN LESLIE. Assistant Professor, Department  
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D.M.D. University of Florida 1980
- STEINMANN, JOHN C. Assistant Clinical Professor,  
Department of Orthopaedic Surgery SM  
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1986
- STELMACH, DEBRA JEANNE. Clinical Instructor, School  
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M.S.N. University of California, Los Angeles 1997
- STEPHENS, KRISTIE. Instructor, School of Nursing SN  
M.S.N. University of Phoenix 2003
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Dental Hygiene SD  
Ed.S. Loma Linda University SE 1982  
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- STEPHENSON, CHARLES M., SR. Clinical Professor,  
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M.D. University of California, Los Angeles Medical  
School 1999
- STEVENS, TIMOTHY W. Instructor, Department of Oral  
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STEVENS, WESLEY T. Assistant Professor, Department of Pathology and Human Anatomy SM  
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STEWART, CHARLES E. Assistant Professor, Department of Surgery SM  
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STEWART, CHARLES EUGENE III. Associate Professor, Department of Otolaryngology and Head and Neck Surgery SM and Assistant Professor, Department of Neurosurgery SM  
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STEWART, GAIL MARIE. Associate Professor, Department of Emergency Medicine SM and Department of Pediatrics SM  
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STEWART, STEVEN C. Professor, Department of Urology SM  
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STIER, GARY R. Associate Professor, Department of Anesthesiology SM  
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STILSON, CARL B. Assistant Professor, Department of Emergency Medicine SM  
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STILSON, MATTHEW K. Assistant Professor, Department of Emergency Medicine SM  
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STIREWALT-BOGGS, SHARON A. Instructor, Department of Dental Hygiene SD  
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STOTTLEMYER, DEBRA D. Associate Professor, Department of Medicine SM  
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STOUT, CHARLES E. Adjunct Assistant Research Professor, Department of Radiology SM  
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STRAHAN, JAMISON E. Assistant Professor, Department of Dermatology SM  
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STRAND, PETER F. Assistant Clinical Professor, Department of Orthodontics SD  
Ph.D. Loma Linda University GS 2002  
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STRINGER, DALE E. Associate Professor, Department of Oral and Maxillofacial Surgery SD  
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- STRONG, RICHARD MERLE. Associate Clinical Professor, Department of Medicine SM  
M.D. University of California, Irvine 1975
- STROUP, STACY R. Instructor, Department of Periodontics SD  
B.S. Loma Linda University SD 2010
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M.D. Loma Linda University SM 1990
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D.D.S. Loma Linda University SD 1985
- STULTZ, DAVID B. Assistant Professor, Department of Medicine SM  
M.D. University of Cincinnati College of Medicine 2000
- STURZ, KURT W. Clinical Instructor, Department of Pediatric Dentistry SD  
D.M.D. Oregon Health Science University 2004
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D.D.S. National Yang-Ming University, Taiwan 1996
- SU-ERICKSON, DIANA B. Clinical Instructor, Department of Occupational Therapy AH  
B.S. Loma Linda University AH 1978
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D.D.S. Case Western Reserve University, Ohio, Cleveland 1964
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M.S. Loma Linda University GS 2000  
D.D.S. Kyungpook National University, Korea 1983
- SULAIMAN, RAGHAD J. Assistant Professor, Department of Restorative Dentistry SD  
B.D.S. Baghdad University, Iraq 1999
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M.P.H. Loma Linda University PH 2004  
M.D. University of California, Davis 1996
- SULLIVAN, KIM M. Clinical Instructor, Department of Dental Educational Services SD  
B.A. Arizona State University 1978
- SULZLE, HOWARD W. Assistant Professor, Department of Physical Therapy AH  
Ed.D. Loma Linda University SE 1995
- SUN, CHAO HUANG. Assistant Clinical Professor, Department of Medicine SM  
M.D. Kaohsiung Medical College, Taiwan 1979
- SUN, CHRISTINE H. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2005
- SUN, CHUN XIAO. Associate Professor, Department of Periodontics SD  
Ph.D. Shanghai Second Medical University, China 1998  
M.S. Zhejiang Medical University, China 1995  
D.M.D. Zhejiang Medical University, China 1992
- SUN, JENNY C. Assistant Professor, Department of Restorative Dentistry SD  
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- SUN, XUEJUN. Adjunct Research Professor, Department of Basic Sciences SM  
Ph.D. Second Military Medical University, Shanghai, China 1998
- SUN, RICHARD S. Assistant Professor, Department of Biophysics and Bioengineering ST  
Ph.D. National Yang-Ming University, Taiwan 2002
- SUPIT, EDWIN J. Instructor, Department of Medicine SM  
M.D. Loma Linda University SM 1996

- SUTHAR, MUKESH B. Assistant Professor, Department of Ophthalmology SM  
M.D. University of Southern California 1993
- SUTJITA, MADE. Assistant Professor, Department of Medicine SM  
M.D. University of Udayana, Indonesia 1980
- SUTTON, MARK S. Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1990
- SUZUKI, SHIGEYUKI. Adjunct Professor, Department of Allied Health Studies AH  
Ph.D. Nagoya University, Japan 1996
- SWABB, RICHARD JOHN. Assistant Professor, Department of Medicine SM  
M.D. College of Medicine and Dentistry at New Jersey 1978
- SWEENEY, THOMAS J. Assistant Clinical Professor, Department of Physician Assistant Sciences AH  
M.S. State University of Stony Brook 1994
- SWEN, R. WESLEY. Clinical Instructor, Department of Physical Therapy AH  
M.P.T. Loma Linda University AH 1966
- SWENSON, TERRY R. Assistant Professor, School of Religion SR  
D.Min. George Fox University Evangelical Seminary 2009
- SWOPE, DAVID M. Associate Professor, Department of Neurology SM  
M.D. Loma Linda University SM 1989
- SYMS, JAMES M. Assistant Professor, Department of Physical Therapy AH  
M.P.T. Loma Linda University AH 1995
- SZUTZ, BRADLEY J. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2005
- TABUENCA, ARNOLD D. Professor, Department of General and Trauma Surgery SM  
M.D. Rosario National University, Argentina 1981
- TAFRESHI, JAVAD. Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1992
- TAGGE, DERYA U. Associate Professor, Department of General and Trauma Surgery SM  
M.D. University of Michigan 1987
- TAGGE, EDWARD P. Professor, Department of General and Trauma Surgery SM  
M.D. Loyola-Strizh Medical School, Chicago, Illinois 1982
- TAHERI, S. REZA. Associate Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Minnesota College of Pharmacy 1998
- TALSANIA, SIDDHARTH J. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2010
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M.L.S. California State University of San Jose State University
- TAMAYOSE, TERI S. Adjunct Assistant Professor, Department of Health Policy and Management PH  
Ed.D. Pepperdine University 2003
- TAMESIS, RICHARD R. Associate Professor, Department of Ophthalmology SM  
M.D. University of the Philippines, Philippines 1983
- TAMEZ, ANGEL J. Adjunct Assistant Professor, Department of General and Trauma Surgery SM  
M.D. University of Texas Health Science Center 1998
- TAN, CATHERINE A. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1992

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D.D.S. Loma Linda University SD 1975
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M.D. Loma Linda University SM 2004
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M.D. Loma Linda University SM 1969
- TAN, ROBERT. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of the Pacific, Stockton 1998
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M.D. Loma Linda University SM 1988
- TAN, SHIRLEY L. Assistant Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1971
- TANAKA, CHIHARU. Adjunct Instructor, Department of Allied Health Studies AH  
B.H.S. National Institution Academics Japan 2003
- TANAKA, WAYNE K. Associate Professor, Department of Oral and Maxillofacial Surgery SD  
D.D.S. University of Washington 1976
- TANG, DAVID H. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of California Los Angeles Medical School 1979
- TANG, HONG-MING. Assistant Professor, Department of Endodontics SD  
D.D.S. Yang-Ming University 1985
- TANG, JIPING. Professor, Department of Basic Sciences SM  
M.D. Chongqing University of Medical Science, China 1988
- TANG, YI. Instructor, Department of Medicine SM  
Ph. D. University of Florida 2003  
M.D. Medical Center of Fudan University, Shanghai, China 1997
- TANZER, DAVID J. Adjunct Associate Professor, Department of Ophthalmology SM  
M.D. Georgetown University 1990
- TARR, JOHN D.F. Clinical Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 1955
- TAVAKOLI-AHMADY, HAMIDEH. Assistant Clinical Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. Western University of Health Sciences, Pomona, California 2000
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B.S. University of Notre Dame 1982
- TAWANSY, KHALED A. Assistant Clinical Professor, Department of Ophthalmology SM  
M.D. University of Michigan 1991
- TAYLOR, BARRY L. Professor, Department of Biochemistry and Microbiology SM  
Ph.D. Case Western Reserve University, Cleveland, Ohio 1973
- TAYLOR, BERNARD A. Clinical Professor, School of Religion SR  
Ph.D. Hebrew Union College 1989
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D.Min. Vanderbilt University 1977
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TEKLU, BAYU. Professor, Department of Medicine SM  
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TELLER, DOUGLAS W. Assistant Professor, Department  
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- THORPE, GARY W. Assistant Clinical Professor,  
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Department of Ophthalmology SM  
M.D. Loma Linda University SM 1979
- TORABINEJAD, MAHMOUD. Professor, Department of  
Endodontics SD  
Ph.D. University of London, England, UK 1995  
M.S.D. University of Washington 1976  
D.M.D. Dental School University of Tehran, Iran 1971
- TORQUATO, JOHN L. Adjunct Assistant Professor,  
Department of Family Medicine SM  
M.D. Loma Linda University 1995
- TORRES, ABEL. Professor, Department of Medicine SM;  
Associate Professor, Department of Health Policy and  
Management PH  
M.D. Mt. Sinai School of Medicine, New York 1979
- TORRES, F. JOSE. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Javieriana University, Colombia 1990
- TORRES, SAMUEL E. Assistant Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 1976
- TORRES, SIDNEY EUGENE. Assistant Professor,  
Department of Anesthesiology SM  
M.D. Loma Linda University SM 1983
- TORRES, VILMA I. Associate Professor, Department of  
Medicine SM  
M.D. State University of New York, Stonybrook 1979
- TORREY, ROBERT R., JR. Assistant Clinical Professor,  
Department of Urology SM  
M.D. Loma Linda University SM 1971

- TOWNSEND, DENISE J. Assistant Professor, Department of Medicine SM  
M.D. University of Florida 1987
- TOWNSEND, PATRICIA PETERSON. Assistant Clinical Professor, School of Nursing SN  
M.S. Loma Linda University GS 1986
- TRAFICANTE, FRANK R. Associate Professor, Department of Pediatric Dentistry SD and Pediatric Dentistry Program FGS  
D.D.S. University of Texas at Houston 1984
- TRAN, LOUIS P. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1997
- TRAN, THE-HUY M. Associate Clinical Professor, Department of Physician Assistant Sciences AH  
M.D. St. George's University School of Medicine, British West Indies 1997
- TRAPP, LARRY DALE. Associate Professor, Department of Dental Anesthesiology SD  
D.D.S. University of California, San Francisco 1975
- TREIMAN, STEPHEN. Assistant Professor, Department of Pediatrics SM  
M.D. University of Texas at Houston Medical School 1997
- TRENKLE, INGRID K. Assistant Clinical Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1973
- TRENKLE, STEVEN J. Assistant Clinical Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1973
- TROTT, JAMES R. Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1982
- TRUONG, TRINH. Assistant Professor, Department of Pediatrics SM  
M.D. University of Wisconsin 2001
- TRUPP, DIANA L. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1982
- TSAI, CHRISTOPHER K.L. Assistant Clinical Professor, Department of Urology SM  
M.D. Loma Linda University SM 1994
- TSAI, HSIU-CHIN. Adjunct Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. National Yang Ming University, Taiwan 1985
- TSAI, JAMES Y. Assistant Professor, Department of Medicine SM  
M.D. St. George University, Grenada 1997
- TSAI, JULIAN C. Assistant Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1969
- TSAO, BRYAN E. Associate Professor, Department of Neurology SM  
M.D. Loma Linda University SM 1996
- TSAO, JUNA. Assistant Professor, Department of Preventive Medicine SM  
M.D. Loma Linda University SM 1996
- TSUDA, HIROTAKA. Adjunct Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Nihon University, Japan 2000
- TUdTUD-HANS, LEAH ANGELICA. Assistant Professor, Department of Medicine SM  
M.D. University of the Philippines, Philippines 1979
- TULLY, RICHARD J. Associate Professor, Department of Radiology SM  
M.D. University of Chicago 1968
- TURNER, RODNEY L. Assistant Clinical Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1984
- TWEED, ROSEMARIE. Assistant Clinical Professor, Department of Pediatrics SM  
D.O. College of Osteopathic Medicine at Pomona 1989

- TYSOR-TETLEY, MARY E. Clinical Instructor,  
Department of Psychiatry SM  
M.S.W. University of Maryland at Baltimore 1980
- UBER-ZAK, LORI D. Associate Professor, Department of  
Neurology SM  
D.O. UMDNJ School of Osteopathic Medicine 1995
- UFFINDELL, SARAH H. Instructor, Department of  
Neurology SM  
M.D. Loma Linda University SM 1997
- UNDERWOOD, MATTHEW B. Assistant Professor,  
Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1992
- UNGER, JEFFREY R. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Northwestern University, Illinois 1980
- UNIAT, JOHN S. Assistant Clinical Professor, Department  
of Medicine SM  
M.D. Loma Linda University 1984
- UNIS, JOSEPH S. Assistant Clinical Professor, Department  
of Radiology SM  
M.D. University of Nebraska 1970
- UNWALLA, KHUSHRO B. Assistant Clinical Professor,  
Department of Psychiatry SM  
M.D. Kasturba Medical College, India 1977
- UPPALA, PADMA P. Associate Professor, Department of  
Environmental and Occupational Health PH  
Ph.D. Loma Linda University GS 1991
- URBAN, ISTVAN. Adjunct Assistant Professor,  
Department of Restorative Dentistry SD  
M.D. SOTE School of Medicine, Hungary 1996  
D.M.D. SOTE School of Dentistry, Hungary 1991
- URQUIZO ARESTEQUI, RAUL. Assistant Professor,  
Department of Health Promotion and Education PH
- VALADEZ, BARBARA H. Instructor, Department of  
Periodontics SD  
A.S. University of California, Los Angeles 1980
- VALENTINI, PASCAL. Adjunct Associate Professor,  
Department of Restorative Dentistry SD  
D.D.S. University of Paris, France 1981
- VALENZUELA, ANTONIO. Assistant Professor,  
Department of Physical Therapy AH  
Ed.D. Loma Linda University SE 1990
- VALENZUELA, P. ESTHER. Assistant Professor,  
Department of Dental Educational Services SD  
M.B.A. University of Redlands 2001  
M.A. La Sierra University 1987
- VALLEJOS, MARIA. Assistant Professor, Department of  
Epidemiology and Biostatistics PH  
M.S. Universidad Inca Garcilaso de la Vega, Peru 2001
- VAN NIEUWENHUYSEN, NICHOLAAS-JOHN. Adjunct  
Assistant Professor, Department of Psychiatry SM  
M.D. University of Stellenbosch, South Africa 1992
- VANNIX, DAVID L. Assistant Clinical Professor,  
Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1986
- VANNIX, ROBERT S. Assistant Clinical Professor,  
Department of Cardiovascular and Thoracic Surgery  
SM  
M.D. Loma Linda University SM 1953
- VAN STRALEN, DAVED W. Assistant Professor,  
Department of Pediatrics SM  
M.D. University of California, Irvine 1984
- VARADARAJAN, PADMINI. Associate Professor,  
Department of Medicine SM  
M.B.B.S. Gandhi Medical College (Osmania  
University) 1993
- VAUGHAN, DARRELL L. Adjunct Assistant Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1973
- VENDEN, LOUIS. Emeritus Professor, School of Religion  
SR  
Ph.D. Princeton Theological Seminary 1979

- VERCIO, CHAD J. Assistant Professor, Department of Pediatrics SM and Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2005
- VERDE, EDWARD W. Assistant Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1997
- VERDE, E. RAY. Associate Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 1988
- VERMA, ASHOK K. Associate Clinical Professor, Department of Medicine SM  
M.B.B.S. Medical College Patiala, India 1975
- VERMA, SANJAY. Instructor Department of Medicine SM  
M.B.B.S. Kasturba Medical College, Manipal, India 2005
- VERMEERSCH, DAVID. Associate Professor, Department of Psychology ST  
Ph.D. Brigham Young University, Idaho 1998
- VETSA, MADHAVI. Instructor, Department of Medicine SM  
M.B.B.S. Osmania Medical College, India 2002
- VICTOR, NOEL S. Assistant Clinical Professor, Department of Surgery SM  
M.D. Madras Medical College, India 1989
- VIDO, IRA A. Assistant Clinical Professor, Department of Ophthalmology SM  
M.D. The Chicago Medical School 2003
- VILLALOBOS, RICARDO E. Assistant Professor, Department of Epidemiology and Biostatistics PH  
M.S. Universidad de Chile, Chile 1991
- VILLANUEVA, MICHAEL. Assistant Clinical Professor, Department of Physician Assistant Sciences AH  
B.A. Brandeis University, Massachusetts 1994
- VILJOEN, JOHN F. Clinical Professor, Department of Anesthesiology SM  
M.D. University of Capetown, South Africa 1958
- VINCENT, ALIX. Assistant Clinical Professor, Department of Radiology SM  
M.D. Loma Linda University SM 1985
- VIPOND, BERTRAND H. Assistant Clinical Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1982
- VLKOLINSKY, ROMAN. Instructor, Department of Radiation Medicine SM  
Ph.D. Slovak Academy of Sciences, Republic of Slovak 1999
- VOGEL KATHERINE. Clinical Instructor, Department of Clinical Laboratory Science AH  
M.A. University of Redlands 1984
- VOLKOV, MEGAN. Instructor, School of Nursing Nursing SN  
M.S. Loma Linda University SN 2007
- VOLLMER-SANDHOLM, MARY J. Assistant Clinical Professor, School of Nursing SN  
M.S.N. University of California, Los Angeles 2000
- VOTH, MARCUS T. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 2001
- VYHMEISTER, EDWIN E. Emeritus Associate Professor, Department of Surgery SM  
M.D. University of Concepcion, Chile 1963
- WAGGONNER, DAVID B. Instructor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 2006
- WAGNER, DAVID K. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of Southern California 1986
- WAGNER, JUSTIN B. Instructor, Department of Medicine SM  
M.D. Loma Linda University SM 2006
- WAGNER, ROBERT J., JR. Associate Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1969

- WAGNER, WILLIAM. Assistant Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1944
- WALL, MICHAEL V. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2008
- WALL, NATHAN R. Assistant Professor, Department of Basic Sciences SM  
Ph.D. Wayne State University, Michigan 2000
- WALLACE, DESIREE. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1996
- WALLACE, G. CARLETON. Associate Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1956
- WALLAR, P. HAROLD. Adjunct Associate Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1969
- WALKER, RANDALL R. Assistant Professor, Department of Counseling and Family Sciences ST  
M.S. California State University, Fullerton 1983  
M.F.T. California State University, Fullerton 1983
- WALLACE, DESIREE R. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1996
- WALLEN, JASON M. Assistant Professor, Department of General and Trauma Surgery SM and Department of Cardiovascular and Thoracic Surgery SM  
M.D. McGill University, Montreal, Canada 2001
- WALSH, ERIC G. Assistant Professor, Department of Family Medicine SM  
M.D. University of Miami 1997
- WALTER, MICHAEL H. Associate Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1973
- WALTER, R. BRUCE. Associate Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1973
- WALTER, ROBERT D. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1999
- WALTERS, CLIFFORD A. Associate Clinical Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1974
- WALTERS, E. LEA. Associate Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1994
- WALTERS, JAMES W. Professor, School of Religion SR  
Ph.D. Claremont Graduate School 1979
- WALTHALL, WILLIAM E. Assistant Clinical Professor, Department of Physical Therapy AH  
M.Div. Biola University, Talbot School of Theology 1983
- WANG, HANSEN S. Assistant Clinical Professor, Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1970
- WANG, HUGH N. Adjunct Associate Professor, Department of Restorative Dentistry SD  
D.D.S. Indiana University School of Dentistry 1984
- WANG, JUN. Professor, Department of Pathology and Human Anatomy SM  
M.D. Wannan Medical College, China 1982
- WANG, NAN. Associate Professor, Department of Cardiovascular and Thoracic Surgery SM  
M.D. Loma Linda University SM 1983
- WANG, NING. Assistant Professor, Department of Radiation Medicine SM  
Ph.D. Shanghai Institute of Optics and Fine Mechanics 1997
- WANWIMOLRUK, SOMPON. Clinical Professor, Department of Pharmaceutical Sciences SP  
Ph.D. Flinders University, South Australia 1983

- WAREHAM, RACHELLE E. Assistant Professor,  
Department of Otolaryngology and Head and Neck  
Surgery SM  
M.D. Loma Linda University SM 2004
- WARNELL, RONALD L. Associate Professor, Department  
of Psychiatry SM  
M.D. Loma Linda University SM 1972
- WARNER, KIM. Assistant Clinical Professor, Department  
of Gynecology and Obstetrics SM  
M.D. University of California, Los Angeles 1990
- WARNER, NANCY M. Instructor, Department of  
Emergency Medicine SM  
M.D. Indiana University School of Medicine 2003
- WASEMILLER, MICHAEL A. Clinical Instructor,  
Department of Periodontics SD  
D.D.S. Loma Linda University SD 2005
- WASHKE, DEBORAH L. Assistant Professor, Department  
of Emergency Medicine SM and Department of  
Pediatrics SM  
M.D. Loma Linda University SM 2002
- WAT, BO YING. Professor, Department of Pathology and  
Human Anatomy SM  
M.D. College of Medical Evangelists 1948
- WAT, LINDA IRENE. Associate Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 1982
- WAT, PAMELA J. Assistant Professor, Department of  
Pathology and Human Anatomy SM; Assistant Clinical  
Professor, Department of Clinical Laboratory Science  
AH  
M.D. Loma Linda University SM 1986
- WATKINS, BARRY E. Associate Professor, Department of  
Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1993
- WATKINS, GREGORY EUGENE. Associate Professor,  
Department of Radiology SM  
M.D. Loma Linda University SM 1987
- WATKINS, HUBERT C. Associate Clinical Professor,  
Department of Medicine SM  
M.D. Loma Linda University SM 1962
- WATTS, KYLIE J. Assistant Research Professor,  
Department of Basic Sciences SM  
Ph.D. University of Sydney, Australia 2001
- WATSON, JAMES R. Clinical Instructor, Department of  
Orthopaedic Surgery SM  
M.D. Hahnemann Medical College, Philadelphia,  
Pennsylvania 1971
- WATSON, NATHAN T. Assistant Clinical Professor,  
Department of Emergency Medicine SM  
M.D. Stanford University 1999
- WATSON, TIMOTHY D. Assistant Clinical Professor,  
Department of Pediatrics SM  
M.D. Loma Linda University SM 2000
- WAZDATSKEY, ARDIS RUSSELL. Assistant Professor,  
Department of Allied Health Studies AH  
M.A. La Sierra University 1998
- WEHLING, MICHELLE E. Assistant Professor,  
Department of Dental Hygiene SD  
B.S. Loma Linda University SD 2007
- WEIN, MICHELLE A. Assistant Research Professor,  
Department of Nutrition PH  
Dr.P.H. Loma Linda University PH 2002
- WEISSER, STANLEY C. Associate Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.B. University of Connecticut 1963
- WEISSMAN, JILL F. Assistant Professor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1989
- WELCH, MARK A. Assistant Professor, Department of  
Medicine SM and Department of Psychiatry SM  
D.O. Western University of Health Science, Pomona,  
California 2003

- WELEBIR, DOUGLAS F. Clinical Instructor, Department of Health Information Management AH  
J.D. University of Southern California 1965
- WELDON, DAVID. Pharmaceutical Sciences, FGS  
Ph.D. University of Mississippi 2008
- WELLER, SAMANTHA E. Assistant Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 2004
- WELSH, DAVID B. Assistant Clinical Professor,  
Department of Surgery SM  
M.D. Tufts University, Boston, Massachusetts 1966
- WENGER, ROGER S. Instructor, Department of  
Psychiatry SM  
Psy.D. Pepperdine University 2003
- WERGEDAL, JON E. Research Professor, Department of  
Medicine SM  
Ph.D. University of Wisconsin 1963
- WERNER, LEONARD S. Professor, Department of  
Medicine SM; Associate Professor, Department of  
Family Medicine SM and Department of Basic Sciences  
SM  
M.D. University of Oklahoma 1978
- WESSELS, IZAK F. Adjunct Associate Professor,  
Department of Ophthalmology SM  
M.D. University Witwatersand, South Africa 1973
- WEST, J. ROBERT. Assistant Clinical Professor,  
Department of Dermatology SM  
M.D. Stanford University 1955
- WEST, STEPHEN S. Assistant Clinical Professor,  
Department of Surgery SM  
M.D. Loma Linda University SM 1992
- WESTERBERG, MARYELLEN. Assistant Clinical  
Professor, Department of Nutrition PH  
Dr.P.H. Loma Linda University PH 1988
- WETTERGREEN, DAVID V. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.B. South Dakota State University College of  
Pharmacy 1986
- WHITE, DAWN M. Instructor, Department of Psychiatry  
SM  
M.D. Ohio State University College of Medicine and  
Public Health 1999
- WHITEHOUSE, JERALD WAYNE. Assistant Clinical  
Professor, Department of Global Health PH  
Dr.P.H. Loma Linda University PH 1977
- WHITING, LINDA J. Instructor, Department of Nutrition  
and Dietetics AH  
B.S. Loma Linda University AH 1985
- WHITT, COLLEEN A. Assistant Professor, Department of  
Dental Hygiene SD  
B.S. Loma Linda University SD 1979
- WHITTAKER, JOHN M. Professor, Department of  
Restorative Dentistry SD  
B.D.S. University of Otago, New Zealand 1967
- WHYTE, RICARDO J. Instructor, Department of  
Psychiatry SM  
M.D. University of Connecticut 2004
- WIAFE, SETH A. Assistant Professor, Department of  
Environmental and Occupational Health PH and  
Department of Global Health PH  
M.P.H. Loma Linda University PH 2004
- WICK, BRYAN M. Clinical Instructor, Department of  
Psychiatry SM  
M.D. University of Kansas School of Medicine 2004
- WIEG, THOM. Adjunct Assistant Professor, Department  
of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1980
- WIEN, MICHELLE A. Assistant Professor, Department of  
Nutrition PH  
Dr.P.H. Loma Linda University PH 2002

- WIESSEMAN, GEORGE J. Associate Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1947
- WIETLISBACH, CHRISTINE M. Clinical Instructor,  
Department of Occupational Therapy AH  
M.P.A. California State University, San Bernardino  
2000
- WILBER, LORETTA J. Assistant Professor, Department of  
Epidemiology and Biostatistics PH; Instructor,  
Department of Preventive Medicine SM  
M.D. Loma Linda University SM 1999
- WILBUR, DAVID W. Associate Professor, Department of  
Medicine SM  
Ph.D. University of California, Berkeley 1965
- WILCOX, R. BRUCE. Professor, Department of  
Biochemistry and Microbiology SM  
Ph.D. University of Utah 1962
- WILDER-SMITH, PETRA EEB. Lecturer, Department of  
Endodontics SD  
B.D.S. Guy's Hospital at London University, England,  
UK 1983
- WILKINS, DAVID L. Associate Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1970
- WILKINS, KRISTI J. Associate Professor, Department of  
Dental Hygiene SD  
M.A. Loma Linda University GS 2002  
B.S. Loma Linda University SD 1980
- WILKINSON, JOE M. Instructor, School of Nursing SN  
B.S. Loma Linda University SN 1983
- WILL, BRIAN R. Assistant Clinical Professor, Department  
of Ophthalmology SM  
M.D. Loma Linda University SM 1985
- WILLARDSEN, JOHN E. Assistant Clinical Professor,  
Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1997
- WILLIAMS, DAVE A. Assistant Clinical Professor,  
Department of Environmental and Occupational Health  
PH and Department of Preventive Medicine SM  
M.P.H. Loma Linda University PH 2000  
M.D. Montemorelos University, Mexico 1990
- WILLIAMS, LINDA. Instructor, Department of  
Pharmacotherapy and Outcomes Science SP  
M.S. Grand Canyon University 2009
- WILLIAMS, JERRY R. Professor, Department of Radiation  
Medicine SM  
D.Sc. Harvard University 1972
- WILLIAMS LAVIN, KARLA. Assistant professor,  
Department of Radiation Technology AH  
M.P.H. Loma Linda University 2000
- WILLIAMS, PATRICIA ANN. Clinical Instructor,  
Department of Clinical Laboratory Science AH  
B.S. Staten Island Community College 1971
- WILLIAMS, PAUL ALLEN. Research Instructor,  
Department of Orthopaedic Surgery SM  
M.S. Louisiana Technical University 1993
- WILMETH, ELIZABETH P. Adjunct Assistant Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm B. University of Texas, Austin 1988
- WILSON, APRIL E. Assistant Professor, Department of  
Preventive Medicine SM  
M.D. Loma Linda University SM 2006  
M.P.H. Loma Linda University PH 2004
- WILSON, COLWICK M. Professor, Department of  
Counseling and Family Science ST  
M.A. University of Michigan at Ann Arbor 1997
- WILSON, CHRISTINE. Assistant Professor, Department  
of Physical Therapy AH  
M.P.T. Loma Linda University AH 2005
- WILSON, DELEISE S. Assistant Professor, School of  
Nursing SN  
M.A. Columbia University Teachers College 1994

- WILSON, DONALD R. Adjunct Assistant Professor,  
Department of Pathology and Human Anatomy SM  
M.D. University of Sydney, Australia 1960
- WILSON, G. GENE. Adjunct Associate Professor,  
Department of Dental Educational Services, SD  
D.D.S. College of Medical Evangelists 1961
- WILSON, HILARY L. Instructor, Department of  
Ophthalmology SM  
M.D. University of California, San Francisco 2002
- WILSON, JOHN D. Assistant Professor, Department of  
Family Medicine SM  
M.D. Loma Linda University SM 2000
- WILSON, SAMUEL G. Assistant Professor, Department of  
Emergency Medicine SM  
M.D. Loma Linda University SM 1984
- WILSON, SEAN. Assistant Professor, Department of Basic  
Sciences SM  
Ph.D. University of California, Davis 1998
- WINER, MYRON S. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. University of Illinois College of Dentistry 1953
- WINSLOW, BETTY J. Professor, School of Nursing SN  
Ph.D. University of Colorado Health Sciences Center  
1994
- WINSLOW, GERALD R. Professor, School of Religion SR  
and Department of Dental Educational Services SD  
Ph.D. Graduate Theological Union 1979
- WINSTON, KAREN A. Assistant Professor, Department  
of Pediatrics SM  
M.D. Michigan State University 1987
- WINTER, TREVOR A. Associate Professor, Department of  
Medicine SM  
Ph.D. University of Cape Town, South Africa 2001  
M.B.Ch.B. University of Zimbabwe 1983
- WISE, GREGORY R. Associate Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1969
- WISE, JAMES R. Associate Professor, Department of  
Orthodontics SD and Orthodontics and Dentofacial  
Orthopedics Program FGS  
D.D.S. Loma Linda University SD 1967
- WOHLMUTH, CINNA T. Assistant Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1985
- WOLCOTT, DEANE L. Associate Clinical Professor,  
Department of Psychiatry SM  
M.D. Loma Linda University SM 1973
- WOLF, DAVID L. Associate Professor, Department of  
Basic Sciences SM  
D.V.M. University of California, Davis 1999  
Ph.D. Weizmann Institute of Science, Rehovot, Israel  
1985
- WOLF, KATHLEEN M. Clinical Instructor, Department of  
Nutrition PH  
B.A. San Diego State College 1970
- WOLFE, DAVID JACK. Assistant Professor, Department  
of Endodontics SD  
D.D.S. University of California, Los Angeles 1979
- WOLFRAM, KLAUS D. Associate Professor, Department  
of Peridontics SD  
D.D.S. Loma Linda University SD 1971
- WOLFSEN, JAMES L. Assistant Clinical Professor,  
Department of Radiology SM  
M.D. Loma Linda University SM 1966
- WON, ESTHER U. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. Loma Linda University SM 1984
- WON, JOHN B. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2005
- WONG, ANDREW S. Assistant Clinical Professor,  
Department of Orthopaedic Surgery SM  
M.D. University of Michigan 2003

- WONG, BRIAN A. Assistant Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 2002
- WONG, DAVID T. Assistant Professor, Department of  
General and Trauma Surgery SM  
M.D. Loma Linda University SM 1993
- WONG, EDWARD. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of the Pacific 1979
- WONG, JAN H. Professor, Department of General and  
Trauma Surgery SM  
M.D. Rush Medical College, Chicago 1974
- WONG, KELVIN L. Assistant Professor, Department of  
Emergency Medicine SM  
M.D. University of Pittsburgh 2005
- WONG, KENNETH H. Assistant Clinical Professor,  
Department of Gynecology and Obstetrics SM  
M.D. Washington University, St. Louis 1991
- WONG, RAYMOND Y. Associate Professor, Department  
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M.D. Loma Linda University SM 1979
- WONG, SAMMY S. Assistant Professor, Department of  
Medicine SM  
M.D. Howard University, Washington, D.C. 1997
- WONG, SHIRLEY L. Instructor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of California, San Francisco 2010
- WONG, SIU-FUN. Professor, Department of  
Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of California, San Francisco 1986
- WONG, VALARIE Y. Assistant Professor, Department of  
Pediatrics SM  
M.D. Baylor College of Medicine, Houston, Texas  
1994
- WONGWORAWAT, AMNART A. Assistant Clinical  
Professor, Department of Plastic and Reconstructive  
Surgery SM  
M.D. Loma Linda University SM 1999
- WONGWORAWAT, M. DANIEL. Professor, Department  
of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1996
- WOO, MICHAEL K. Assistant Professor, Department of  
Medicine SM  
M.D. Albert Einstein College of Medicine, New York  
1998
- WOOD, BEVERLY PHYLLIS. Professor, Department of  
Radiology SM  
M.D. University of Rochester School of Medicine,  
New York 1965
- WOOD, DAVID LYMAN III. Assistant Clinical Professor,  
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M.D. Loma Linda University SM 1980
- WOOD, MICHAEL N. Assistant Clinical Professor,  
Department of Cardiovascular and Thoracic Surgery  
SM  
M.D. Loma Linda University SM 1981
- WOOD, VIRCHEL EDGAR, JR. Professor, Department of  
Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1960
- WOODHOUSE, ERNEST S. Assistant Professor,  
Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1974
- WOODS, V. DIANE. Assistant Research Professor,  
Department of Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 2005
- WOODSON, ALAN B. Assistant Professor, Department of  
Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1987
- WREN, DAVID G. Instructor, Department of Health  
Information Management AH  
M.H.A. Loma Linda University PH 1987

- WRESCH, ROBERT R. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1969
- WRIGHT, DOLORES. Associate Professor, School of  
Nursing SN  
D.N.Sc. Widener University, Pennsylvania 2000
- WRIGHT, EDWIN T. Emeritus Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1946
- WRIGHT, KENNETH R. Associate Professor, Department  
of Pathology and Human Anatomy SM  
Ph.D. Loma Linda University GS 1992
- WROE, ANDREW. Assistant Professor, Department of  
Radiation Medicine SM  
Ph.D. University of Wollongong, Australia 2007
- WU, PO-CHIN JOHN. Assistant Professor, Department of  
Anesthesiology SM  
M.D. Texas A&M College of Medicine 2002
- WU, SIDNEY S. C. Assistant Professor, Department of  
Pediatrics SM and Department of Medicine SM  
M.D. Loma Linda University SM 2000
- WURANGIAN-CAAN, NELIA C. Associate Librarian,  
University Libraries  
M.L.S. University of Western Ontario, Canada 1981
- WURSTEN, APRIL. Assistant Clinical Professor,  
Department of Psychiatry SM  
Ph.D. University of Arizona 1986
- WYCLIFFE, N. DAN. Associate Professor, Department of  
Radiology SM  
M.B.B.S. Dhaka Med, Bangladesh 1972
- WYLD, SAMUEL W. Instructor, Department of  
Cardiopulmonary Sciences AH  
B.S. Alameda University 2006
- XIAO, DALIAO. Assistant Research Professor,  
Department of Basic Sciences SM  
Ph.D. Loma Linda University GS 2004  
M.D. Jiangxi Agricultural University 1997
- XING, WEIRONG. Assistant Research Professor,  
Department of Medicine SM  
Ph.D. McGill University, Quebec, Canada 2002
- XU, HELEN X. Assistant Professor, Department of  
Otolaryngology and Head and Neck Surgery SM  
M.S. Zhejiang University, China 1991  
M.D. Zhejiang University, China 1986
- XU, ZHICE. Research Professor, Department of Basic  
Sciences SM  
Ph.D. University of Cambridge, England, UK 1996
- YACOUB, IGNATIUS I. Emeritus Professor, Department  
of Social Work and Social Ecology ST  
Ph.D. Claremont Graduate School 1976
- YAMADA, CHRIS. Assistant Clinical Professor,  
Department of Pharmacotherapy and Outcomes Science  
SP  
Pharm.D. University of Southern California 1999
- YAMADA, JASON MASAYOSHI. Assistant Professor,  
Department of Periodontics SD  
D.D.S. University of Southern California 1990
- YAMADA, ROBERT K. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. University of California, San Francisco 1985
- YAMANAKA, JEANINE N. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. University of California, San Francisco 1996
- YAMANISHI, J. FRANK. Assistant Clinical Professor,  
Department of General and Trauma Surgery SM  
M.D. Loma Linda University SM 1985
- YANEZ, GLORIA. Assistant Professor, Department of  
Pediatric Dentistry SD  
D.D.S. University of Texas Health Science Center, San  
Antonio School of Dentistry 2003
- YANG, GARY Y. Professor, Department of Radiation  
Medicine SM  
M.D. The Chicago Medical School 1995

- YANG, JOANNA JIEHONG. Clinical Instructor, School of Nursing SN  
M.S. Loma Linda University GS 1995
- YANG, LINDA L. Assistant Professor, Department of Pediatrics SM  
M.D. University of California, Irvine 1985
- YANNI, GEORGE S. Associate Professor, Department of Pediatrics SM  
M.D. Ain Shams University at Cairo, Egypt 1981
- YAO, FUNG K. Assistant Professor, Department of Pharmacotherapy and Outcomes Science SP  
Pharm.D. University of Southern California 1997
- YEE-HAMAI, KIM. Assistant Professor, Department of Pediatrics SM  
M.D. Jefferson Medical College 1997
- YEGGE, STEVEN R. Assistant Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Loma Linda University SM 1985
- YELLON, STEVEN M. Professor, Department of Physiology and Pharmacology SM  
Ph.D. University of Connecticut 1981
- YEO, ELIOT M. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. University of Missouri 1987
- YEOMAN, LELAND R. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 1968
- YHIP, SHERRIE D. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 1982
- YI, JOO-YOUN. Assistant Professor, Department of Restorative Dentistry SD  
D.D.S. Loma Linda University SD 2010
- YONG, PAMELA A. Instructor, Department of Nutrition and Dietetics AH  
M.P.H. Loma Linda University PH 1989
- YOO, PAUL H. S. Assistant Clinical Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2008
- YOON-FARRELL, PATRICIA S. Adjunct Assistant Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1997
- YOON, STUART S. Adjunct Assistant Professor, Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 1998
- YOUNG, EUGENE Y. Clinical Instructor, Department of Psychiatry SM  
D.O. Western University, Pomona, California 1994
- YOUNG, LILY L. Clinical Instructor, Department of Physical Therapy AH  
M.A. Hong Kong Union College, People's Republic of China 1976
- YOUNG, LIONEL W. Professor, Department of Radiology SM and Department of Pediatrics SM  
M.D. Howard University, Washington, D. C. 1957
- YOUNG, PETER SIU-YEE. Assistant Professor, Department of Restorative Dentistry SD  
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D.D.S. Loma Linda University SD 1985
- YOUNG, RONALD L. Assistant Professor, Department of Restorative Dentistry SD  
D.M.D. Fairleigh Dickinson University, New Jersey 1981
- YOUNG-SNODGRASS AMY D. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University 2001
- YOUNG, T. LORRAINE. Assistant Clinical Professor, Department of Psychology ST  
Ph.D. Loma Linda University GS 2003

- YOUNG, TIMOTHY P. Assistant Professor, Department of  
Emergency Medicine SM  
M.D. Loma Linda University SM 2004
- YOUNGBERG, WESLEY S. Clinical Professor, Department  
of Preventive Medicine SM and Department of Health  
Promotion and Education PH  
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- YOW, WARREN SHIUWING. Associate Professor,  
Department of Restorative Dentistry SD  
D.M.D. Washington University 1983
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Medicine SM  
Ph.D. University of New Hampshire 1992
- YU, JACK N. Associate Professor, Department of Family  
Medicine SM  
M.D. Boston University 1984
- YU, LEISURE. Associate Clinical Professor, Department of  
Orthopaedic Surgery SM  
M.D. State University of New York at Buffalo 1981
- YU, MINHO. Assistant Professor, Department of  
Medicine SM  
D.O. Western University of Health Sciences, Pomona,  
California 2004
- YUAN, YUAN. Assistant Professor, SM  
Ph.D. University of California, Riverside 2002  
M.D. Xu Zhou Medical College, China 1994
- YUHAN, ROBERT M. Assistant Clinical Professor,  
Department of General and Trauma Surgery SM  
M.D. Northwestern University Medical Center,  
Chicago 1990
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M.S. Loma Linda University GS 1976
- YUSUFALY, YASMIN A. Assistant Professor, Department  
of Medicine SM  
M.B.B.S. Dow Medical College,  
Pakistan 1984
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Pediatrics SM  
M.D. Loma Linda University SM 2000
- ZAHARAKIS, TOMMY. Assistant Professor, Department  
of Medicine SM  
M.D. New York Medical College 1998
- ZAHEER, SALMAN. Assistant Professor, Department of  
Cardiovascular and Thoracic Surgery SM  
M.B.B.S. Aga Khan University, Pakistan
- ZAK, PAUL J. Adjunct Professor, Department of  
Neurology SM  
Ph.D. University of Pennsylvania 1994
- ZALSMAN, HARVEY, JR. Assistant Professor,  
Department of Oral and Maxillofacial Surgery SD  
M.D. Loma Linda University SM 1990  
D.D.S. Loma Linda University SD 1983
- ZAMAN, MANILA. Assistant Professor, Department of  
Medicine SM  
M.D. Medical College of Virginia 1994
- ZAMORA, FRANCISS M. Assistant Professor,  
Department of Restorative Dentistry SD  
D.D.S. San Martin de Porres University, Lima, Peru  
1998
- ZAMORA, ZELNE LU. Assistant Professor, School of  
Nursing SN  
M.S.N Azusa Pacific University 1998
- ZAND, SARVENAZ. Assistant Professor, Department of  
Dermatology SM  
M.D. Harvard Medical School 2005
- ZANE, ERNEST SUI SUNG. Associate Professor,  
Department of Ophthalmology SM  
M.D. College of Medical Evangelists 1956
- ZANE, STEVEN E. Assistant Clinical Professor,  
Department of Ophthalmology SM  
M.D. Loma Linda University SM 1990

- ZANINOVIC, PERIZA. Assistant Clinical Professor,  
Department of Dental Educational Services SD  
D.D.S. Loma Linda University SD 2000
- ZAPPIA, JANE NEWMAN. Instructor, Department of  
Clinical Laboratory Science AH  
B.S. University of Central Florida 1977
- ZASKE, MERLIN R. Associate Clinical Professor,  
Department of Pediatrics SM  
M.D. University of Washington 1960
- ZDROJEWSKI, JOHN F. Assistant Clinical Professor,  
Department of Dermatology SM  
M.D. SUNY Upstate College of Medicine, Syracuse,  
New York 1973
- ZHANG, JOHN H. Professor, Department of Basic  
Sciences and Neurosurgery SM and School of Nursing  
SN  
Ph.D. University of Alberta, Canada 1992  
M.D. Chongqing University of Medical Science,  
China 1983
- ZHANG, KANGLING. Associate Professor, Department  
of Basic Sciences SM  
Ph.D. University of the Pacific/University of  
California, San Francisco 2000
- ZHANG, LUBO. Professor, Department of Physiology and  
Pharmacology SM  
Ph.D. Iowa State University 1986
- ZHANG, WU. Professor, Department of Dental  
Educational Services SD  
M.D. Norman Bethane University of Medical  
Sciences, China 1977
- ZHANG, XIAO-BING. Assistant Research Professor,  
Department of Medicine SM  
Ph.D. East China University of Science and  
Technology 1999
- ZHAO, YAN S. Assistant Professor, Department of  
Medicine SM  
M.D. Beijing Medical University, China 1993
- ZHU, YONG H. Associate Research Professor,  
Department of Neurosurgery SM  
M.D. Shanghai First Medical College, China 1969
- ZIMMERMAN, GRENITH G. Professor, Department of  
Allied Health Studies AH and Department of  
Epidemiology and Biostatistics PH  
Ph.D. University of Minnesota 1970
- ZIMMERMAN, KIMBERLY R. Assistant Professor,  
Department of Emergency Medicine SM and  
Department of Pediatrics SM  
M.D. Bush Medical College, Chicago 1983
- ZOGRAFOS, KARA N. Adjunct Assistant Professor,  
Department of Health Promotion and Education PH  
Dr.P.H. Loma Linda University PH 2007
- ZOUROS, ALEXANDER. Associate Professor,  
Department of Neurosurgery SM and Department of  
Pediatrics SM  
M.D. Dalhousie University, Canada 1996
- ZUCCARELLI, ANTHONY J. Professor, Department of  
Biochemistry and Microbiology SM  
Ph.D. California Institute of Technology 1974
- ZUCKERMAN, LEE M. Assistant Professor, Department  
of Orthopaedic Surgery SM  
M.D. Albert Einstein College of Medicine 2003
- ZUMWALT, JANICE R. Assistant Professor, School of  
Nursing SN and Department of Global Health PH  
M.B.A. La Sierra University 1993
- ZUPPAN, CRAIG W. Professor, Department of Pathology  
and Human Anatomy SM  
M.D. Loma Linda University SM 1980

# VI

## GENERAL INFORMATION

University Board and Administration

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University Administration

School Administrations, Committees, and Affiliations

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School of Dentistry

School of Medicine

School of Nursing

School of Pharmacy

School of Public Health

School of Religion

School of Science and Technology

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## University Board and Administration

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Beverly J. Buckles, D.S.W.	Dean	School of Science and Technology
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Anthony J. Zuccarelli, Ph.D.	Dean	Faculty of Graduate Studies

## School Administrations, Committees, and Affiliations

### KEY TO CODES

AH	School of Allied Health Professions
SD	School of Dentistry
SM	School of Medicine
SN	School of Nursing
SP	School of Pharmacy
PH	School of Public Health
SR	School of Religion
ST	School of Science and Technology
FGS	Faculty of Graduate Studies

### SCHOOL OF ALLIED HEALTH PROFESSIONS

#### Administration—AH

##### General Administration

CRAIG R. JACKSON, J.D., M.S.W., Dean  
 JOYCE W. HOPP, Dean Emerita  
 IVOR C. WOODWARD, Dean Emeritus  
 GRENITH ZIMMERMAN, Ph.D., Associate Dean, Research  
 ERNEST SCHWAB, Ph.D., Associate Dean, Academic Affairs  
 EDD ASHLEY, Ph.D., Associate Dean, Student Affairs  
 EVERETT B. LOHMAN, D.Sc., Assistant Dean, Academic Affairs  
 ARTHUR W. KROETZ, Assistant Dean, Educational Support Services  
 KENT CHOW, M.B.A., Assistant Dean, Finance  
 HELEN R. MARTINEZ, M.A., Assistant Dean, Admissions  
 GAIL T. RICE, Ed.D., Coordinator, Continuing Education  
 G. CHARLES DART, JR., M.B.A., Director, Marketing and Retention  
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##### Computer Services

INTITHAR S. ELIAS, M.S., Director  
 RAJAE AREE

##### Cardiopulmonary Sciences

DAVID LOPEZ, Ed.D., Chair, Department of Cardiopulmonary Sciences  
 EHREN B. NGO, M.S. Program Director for Bachelor of Science, Emergency Medical Care  
 LINDSEY SIMPSON, B.S., Director of Clinical Education for Bachelor of Science, Emergency Medical  
 Care Program  
 N. LENNARD SPECHT, M.D., Medical Director for Respiratory Care Program

DAVID M. STANTON, M.S., Program Director for Entry-Level Bachelor of Science and for Certificate;  
and for Bachelor of Science, Respiratory Care

KATE GATTUSO, B.A., Director of Clinical Education for Bachelor of Science, Respiratory Care Program

### **Clinical Laboratory Science**

RODNEY M. ROATH, M.B.A., Chair, Department of Clinical Laboratory Science

KATHERINE G. DAVIS, M.S., Program Director for Bachelor of Science, Clinical Laboratory Science

MONIQUE K. GILBERT, B.S., Clinical Coordinator for Clinical Laboratory Science Program

TERI J. ROSS, M.S., Program Director for Certificate, Phlebotomy

PAUL C. HERRMANN, M.D., Medical Director for Clinical Laboratory Science Program

MARLENE M. OTA, B.S., Program Director for Certificate and for Bachelor of Science, Cytotechnology

DARRYL G. HEUSTIS, M.D., Medical Director for Cytotechnology Programs

PAMELA J. WAT, M.D., Medical Co-director for Cytotechnology Programs

### **Communication Sciences and Disorders**

#### **(formerly Speech-Language Pathology and Audiology)**

KEIKO KHOO, Ph.D., Chair, Department of Communication Sciences and Disorders

PAIGE SHAUGHNESSY, Ph.D., Program Director for Master of Science and Transitional

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SETH A. WIAFE, M.P.H., Acting Chair, Department of Environmental and Occupational Health

### **Health Information Management**

MARILYN H. DAVIDIAN, Ph.D., Chair, Department of Health Information Management; Program

Director for Health Information Systems and for Health Information Administration

DEBRA HAMADA, M.A., Program Coordinator for Certificate, Coding Specialist

PAULINE CALLA, M.B.A., Recruitment Coordinator for Health Information Administration Program

### **Nutrition and Dietetics**

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CINDY KOSCH, M.S., RD, Program Director for Bachelor of Science, Master of Science, and Master of

Public Health in Nutrition and Dietetics

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### **Occupational Therapy**

LIANE H. HEWITT, Dr.P.H., CHES, OTR/L, Chair, Department of Occupational Therapy; Program

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Therapy

HEATHER JAVAHERIAN, O.T.D., OTR/L, Program Director for Doctor of Occupational Therapy

JUDITH A. PALLADINO, M.A., OTR/L, Academic Coordinator for Fieldwork Education, Occupational  
Therapy Program

**Physical Therapy**

EDD J. ASHLEY, Ed.D., Chair, Department of Physical Therapy

HOWARD W. SULZLE, Ed.D., Associate Chair, Department of Physical Therapy

LAWRENCE E. CHINNOCK, Ed.D., Associate Chair, Department of Physical Therapy; Program Director for Entry-Level Doctor of Physical Therapy

EVERETT B. LOHMAN III, D.Sc., PT, OCS, Program Director for Postprofessional Master of Physical Therapy, Postprofessional Doctor of Physical Therapy, Postprofessional Doctor of Science, and Postprofessional Master of Science in Orthotics and Prosthetics

JEANNINE S. MENDES, M.P.T., Program Director for Associate in Science, Physical Therapist Assistant

**Entry-Level Doctor of Physical Therapy Program**

CAROL J. APPLETON, M.P.H., Assistant Program Director, Physical Therapist Assistant; Academic Coordinator of Clinical Education for Physical Therapist Assistant Program and for Entry-Level Doctor of Physical Therapy Program

**Physician Assistant Sciences**

DAVID LOPEZ, Ed.D., Interim Department Chair

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CHRISTY ESKES, M.P.A., PA-C., Program Director for Master of Physician Assistant Sciences

FRANK SIRNA, PA-C., Didactic Coordinator for Master of Physician Assistant Sciences

JULIE YANG, M.P.H., PA-C., C.H.E.S., Associate Didactic Coordinator for Master of Physician Assistant Sciences Program

GERALD A. GLAVAZ, M.P.A.S., PA-C., Clinical Coordinator for Master of Physician Assistant Sciences Program

GHINA KATRIB, M.P.A.S., PA-C., Associate Clinical Coordinator for Master of Physician Assistant Sciences

**Radiation Technology**

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CAROL A. DAVIS, M.A., Clinical Program Director for Certificate, Radiation Therapy Technology; Program Director for Medical Dosimetry

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ELOY SCHULZ, M.D., Medical Director for Certificate, Nuclear Medicine Technology Program

TIMOTHY SEAVEY, B.S., Program Director for Certificate in Imaging Informatics  
 JAMES M. SLATER, M.D., Medical Director for Radiation Therapy Technology Program  
 TERESE R. MOSLEY, B.S., Program Coordinator for Loma Linda University Programs, Fresno, California  
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### **Research and Statistics**

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 LYNDA DANIEL, M.D., Assistant Dean for Clinical Site Recruitment  
 LENOA EDWARDS, M.A., M.P.H., Assistant Dean for Admissions  
 DWIGHT C. EVANS, M.D., Assistant Dean for Veterans Affairs  
 LORETTA B. JOHNS, Ph.D., Assistant Dean for Program Development and Evaluation  
 MARTIE E. PARSLEY, Ph.D., Assistant Dean for Residency Curriculum  
 TREVA C. WEBSTER, M.B.A., RN, Assistant Dean for Development  
 M. DANIEL WONGWORAWAT, M.D., Assistant Dean for Career Advisement  
 RESA L. CHASE, M.D., Assistant to the Dean for Basic Science Curriculum  
 DAISY D. De LEON, Ph.D., Assistant to the Dean for Diversity Affairs  
 LINDA J. MASON, M.D., Assistant to the Dean for Medical Staff Affairs  
 RHODES L. RIGSBY, M.D., Assistant to the Dean for Administration  
 MARVALEE J. HOFFMAN, Director of Records and Student Services

### Committees—SM

Executive Committee  
 Basic Science Faculty Advisory Council  
 Clinical Science Faculty Advisory Council  
 Clinical Faculty Executive Committee  
 Basic Science and Translational Research Executive Committee  
 Dean's Administrative Council  
 Admissions Committee  
 Curriculum Committee  
 Academic Review Committee  
 Promotions Committee  
 Tenure Committee  
 Medical Affairs Collaborative Committee  
 Spiritual Life and Wholeness Committee

## SCHOOL OF NURSING

### Administration—SN

MARILYN M. HERRMANN, Ph.D., RN, Dean

ELIZABETH BOSSERT, D.N.S., Associate Dean, Academic Affairs and Graduate Nursing

DYNNETTE HART, Dr.P.H., Associate Dean, Student Affairs, Undergraduate Nursing

JEFF LEEPER, C.P.A., C.M.A., C.I.A., D.ABFA, Assistant Dean, Financial Affairs

HEATHER KRAUSE, Director, Admissions, Recruitment, and Marketing

PATRICIA S. JONES, Ph.D., Director, Office of International Nursing

ZELNE L. ZAMORA, M.S.N., Coordinator, Student Services, Undergraduate Nursing

### Councils and Committees—SN

#### International Nursing Council

PATRICIA S. JONES, Chair

Selected School of Nursing faculty and Medical Center nursing administrators

#### Faculty Council

Dean, Chair

All full-time and part-time faculty

Invitees: GFT and voluntary faculty

#### Graduate Faculty Council (master's and doctoral degree programs)

Associate Dean, Chair

All full-time and part-time graduate faculty

#### Undergraduate Faculty Council

Associate Dean, Chair

All full-time and part-time undergraduate faculty

#### Standing Faculty Committees

Admissions

Curriculum

Diversity

Faculty Affairs

Rank and Tenure

Research

Spiritual Life and Wholeness

Today's Nursing Technology (TNT)

### Clinical Facilities—SN

Ace Pediatrics, Hemet

ACTS, Loma Linda

Addus HealthCare, Inc., Riverside

Adventist Health, Roseville

Adventist Health System, Florida

Allied Professional Nursing Care, Upland  
Alvord Unified School District, Riverside  
American Primary Care Medical Clinic, Riverside  
Antelope Valley Community Clinic, Lancaster  
Arrowhead Regional Medical Center, Colton  
Asian American Resource Center, San Bernardino

Beaver Medical Clinic, Redlands  
Bradshaw, Dr. Tonda, Yucaipa

California State University–San Bernardino  
Carcamo, Dr. Mario, Riverside  
CareMore Health Plan, Cerritos  
Catholic Health Care, West, Pasadena  
Charter Hospice, Colton  
Children's Hospital of Orange, Orange  
Choice Medical Group, Apple Valley  
Citrus Valley Health Partners, Covina  
Citrus Valley Medical Association, Norco  
City of Colton Early Childhood Education, Colton  
Clinica Msr. Oscar Romero, Los Angeles  
Clinica Salud & Familia, Pomona  
Colton Joint Unified School District, Bloomington  
Community Health System, Moreno Valley  
Coram Specialty Infusion Services, Ontario  
Cornerstone Hospice, Inc., Colton  
Corona Regional Medical Center, Corona  
County of Riverside Department of Community Health, Riverside  
County of Riverside Human Resources Wellness, Riverside

DASH, The Other Place, Redlands  
Delta Hospice of California, Chino  
Desert Valley Hospital, Victorville

Eisenhower Hospital, Rancho Mirage  
Etiwanda School District, Etiwanda

Fontana Family Medical Center, Fontana  
Fontana Unified School District, Fontana  
Fort Irwin–Weed Army Community Hospital, Fort Irwin

Garden Pediatrics, Redlands  
Glendale Adventist Medical Center, Glendale  
G.R.I.T. (Gang Reduction Intervention Team), Redlands

Healthsouth Corporation, Birmingham, AL  
 Hemet Unified School District, Hemet  
 Heritage Gardens, Loma Linda  
 Hoag Memorial Hospital Presbyterian, Newport Beach  
 Hurwitz, Dr. Kathleen, Murrieta

In Your Best Interest, Redlands  
 Indio Emergency Medical Group, Indio  
 Inland Regional Center, San Bernardino  
 Inland Temporary Homes, Loma Linda  
 Inland Valley Hospice, Riverside  
 Inland Valley Medical Center, Wildomar  
 Inland Valley Urgent Care Clinic, Wildomar

Jefferson Transitional Program, Riverside  
 JFK Memorial Hospital, Indio  
 Johns Hopkins School of Nursing, Baltimore, MD  
 Jose Limon, M.D., Internal Medicine, Moreno Valley  
 Jurupa Unified School District, Riverside

Kaiser Permanente–Pasadena, Pasadena  
 Kaiser Permanente–Fontana, Fontana  
 Kaiser Permanente–Riverside, Riverside  
 Keen Medical Group, Victorville  
 Kim, Dr. Dong, Moreno Valley  
 Kindred Hospital, Ontario  
 Knotts Family & Parenting Institute for Child, San Bernardino

Lake Elsinore Family Care Center, Lake Elsinore  
 Limon, Dr. Jose, Internal Medicine, Moreno Valley  
 Loma Linda Child & Adolescent Clinic, Loma Linda  
 Loma Linda University Behavioral Medical Center, Redlands  
 Loma Linda University Children's Hospital, Loma Linda  
 Loma Linda University East Campus, Loma Linda  
 Loma Linda University Family Medical Group, Loma Linda  
 Loma Linda University Home Care Services, Loma Linda  
 Loma Linda University Medical Center Adult Day Health Services, Loma Linda  
 Loma Linda University Medical Center, Loma Linda  
 Loma Linda University Pediatrics, Loma Linda  
 Loma Linda Academy, Loma Linda  
 Lone Tree Family Practice, Lone Tree, CO

Mackey, Dr. Timothy, Riverside  
 Manvelyan, Dr. Marina, Pasadena  
 Mary's Mercy Center, Inc., San Bernardino  
 Mission Family Care, Fallbrook

Moreno Valley Urgent Care, Moreno Valley  
Mountains Community Hospital, Lake Arrowhead  
Muhtaseb, Dr. Talal, San Bernardino  
Mukergee, Dr. Kamana, Riverside  
Mukherjee, Dr. Ashis, San Bernardino

Naval Hospital–Camp Pendleton  
Naval Hospital–29 Palms, Twentynine Palms  
Naval School of Health Sciences–Bethesda, MD

Odyssey Health Care, San Bernardino  
Oyemade, Dr. Olusola, Inc., Rancho Cucamonga

Paradise Valley Hospital, National City  
Parent Care Management Services, Highland  
Parkview Adventist Medical Center, Brunswick  
Pomona Unified School District, Pomona  
Preschool Services Department, San Bernardino

Ramona VNA & Hospice Hemet, Hemet  
Rancho Paseo Medical Group, Banning  
Rancho Specialty Hospital, Rancho Cucamonga  
Reche Canyon Rehab & Health Care Inc., Colton  
Redlands Community Hospital, Redlands  
Redlands Health Care, Redlands  
Redlands Unified School District, Redlands  
Restora Home Health, Upland  
Rialto Unified School District, Rialto  
Riverside Center for Behavioral Medicine, Riverside  
Riverside Community Hospital, Riverside  
Riverside County Regional Medical Center, Moreno Valley  
Riverside Medical Clinic, Riverside  
Riverside Mission Pediatric Medical Group, Riverside  
Riverside/San Bernardino Indian Health, Inc., Banning  
Robinson, Dr. Magda, San Bernardino  
ROTC Department of the Army, Claremont

SAC Health System, San Bernardino  
San Antonio Community Hospital, Upland  
San Bernardino City Unified School District, San Bernardino  
San Bernardino County Department of Public Health, San Bernardino  
San Bernardino County Probation Department, San Bernardino  
San Gorgonio Memorial Hospital, Banning  
San Joaquin Community Hospital, Bakersfield  
Scripps Health, San Diego  
Sharp Healthcare, San Diego

Shriners Hospital for Children, Los Angeles  
 Silverlake Youth Services, Yucaipa  
 South Coast Medical Center, Laguna Beach  
 Southern California Occupational Health Services, San Bernardino  
 St. Joseph Heritage Medical Center, Santa Ana  
 St. Joseph Hospital, Orange  
 St. Mary's Medical Clinic, Riverside  
 Symonett Family Medical Center, Colton

Tenet Health System Desert Inc., Palm Springs  
 The Palms at Loma Linda, Loma Linda  
 The Village at University Park, Palm Desert  
 Totally Kids, Loma Linda  
 Tye, Dr. Kenneth, West Covina

VA Hospital, Loma Linda  
 VA Hospital Long Beach Health Care System, Long Beach  
 VA Medical Center West Los Angeles, Los Angeles  
 Vander Wall, Dr. Jacquelyn, Los Alamitos  
 Veronica's Home of Mercy, San Bernardino  
 Vista Community Clinic, Vista  
 Visiting Nurse Association of Inland Counties, Riverside  
 VNA of Southern California, San Bernardino

Webb, Dr. Harry, Colton  
 White Memorial Medical Center, Los Angeles

## **SCHOOL OF PHARMACY**

### **Administration—SP**

W. WILLIAM HUGHES, Ph.D., Dean  
 ERIC J. MACK, Ph.D., Associate Dean for Academic Affairs  
 NANCY E. KAWAHARA, Pharm.D., M.S.Ed., Associate Dean for Assessment and Professional Affairs  
 PAUL M. NORRIS, Pharm.D., Associate Dean for Clinical Affairs  
 ALAN C. CONNELLY, M.B.A., Assistant Dean for Finance  
 LINDA M. WILLIAMS, M.S., Assistant Dean for Student Affairs  
 RASHID MOSAVIN, Ph.D., Chair, Department of Pharmaceutical Sciences  
 S. REZA TAHERI, Chair, Department of Pharmacotherapy and Outcomes Science  
 HYMA P. GOGINENI, Pharm.D., Director of Outpatient Practice, Division of Experiential Education  
 JIM PINDER, J.D., M.B.A., Director, Development and Alumni Affairs

### **Committees—SP**

Academic Standing  
 Accreditation Oversight  
 Admissions  
 Continuing Professional Education

Curriculum  
Executive Council  
Faculty Search  
Honors and Awards  
International Pharmacy Outreach  
Program Assessment  
Promotion and Tenure

**Affiliated/Clinical Facilities—SP**

Aero Apothecary  
Allergan Sales, Irvine  
American Lung Association  
AmerisourceBergan  
Arcadian Health Plan  
Arrowhead Regional Medical Center, Colton

Cardinal Health, NPS  
Caremark, Inc.  
Catholic Health Care West  
Central Valley General Hospital  
Cherokee Indian Hospital  
Children's Hospital of Orange County  
Chino Valley Medical Center, Chino  
Citrus Valley Medical Center, Covina  
City of Hope, Duarte  
Consumer Health Information Corporation  
Corona Regional Medical Center  
Costco Wholesale Corporation  
County of Riverside Health Agency-CHA  
Covidien Radiopharmacy/Mallinckrodt  
CVS Pharmacy, Inc.

Desert AIDS Project  
Desert Hospital Outpatient Pharmacy  
Desert Oasis Health Care  
Desert Regional Medical Center  
Desert Valley Hospital  
Dominguez Pharmacy

Feather River Hospital  
Federal Correction Facility  
Flintridge Pharmacy  
Florida Hospital, Maitland, FL  
Food and Drug Administration (FDA)

Gemmel Pharmacy, Ontario  
Glendale Adventist Medical Center, Glendale

Hanford Community Medical Center  
Health South Corporation, Anaheim  
Hi-Desert Medical Center, Yucca Valley

Indian Health Service (IHS), Morongo, Soboba  
Inland Empire Health Provider (IEHP)  
Inland Compounding Pharmacy, Loma Linda  
Irvine Medical Pharmacy, Irvine

Kettering Medical Center  
Kaiser Permanente - Southern California  
Kaiser Permanente-Northern California  
K-Mart

Loma Linda University Adventist Health Sciences Center, Loma Linda  
Loma Linda University Medical Center, Loma Linda  
Loma Linda Veterans Administration Health Care System, Loma Linda  
Long Beach Memorial Medical Center, Long Beach  
Longs Drugstores

MD Healthcare  
Med Specialties, Yorba Linda

National Institutes of Health (NIH), Bethesda, MD  
Naval Medical Center  
Newport Medical Plaza Pharmacy  
Nova Nordisk

OB Medical Supplies and Pharmacy, San Bernardino

Parkview Pharmacy  
Park Vista Pharmacy  
Pomona Valley Medical Center, Pomona  
Presbyterian Intercommunity Hospital  
Prescription Solutions  
Proctor and Gamble  
Professional Compounding Centers of America (PCCA), Houston, TX

Ralphs Grocery Stores - Student Agreement  
Redlands Community Hospital Pharmacy, Redlands  
Rite-Aid Corporation

Riverside Community Hospital, Riverside  
ROI Solutions Group

Salinas Valley Memorial Health Care System  
San Geronio Memorial Hospital, Banning  
San Joaquin Community Hospital  
Selma Community Hospital  
Share Our Selves (SOS)  
Shriners Hospital for Children, Los Angeles  
Sierra View District Hospital  
Social Action Community Health System (SACHS)–LLU Medical Center Affiliate, San Bernardino

Target Corporation

University of Florida

Valley View Medical Center, Inc.  
Vons Corporation

Wahiawa General Hospital  
Wal-Mart, Inc.  
Walgreens Corporation  
Watson Laboratories, Inc.  
White Memorial Medical Center, Los Angeles  
Womack Army Medical Center

Yucaipa Valley Pharmacy

## **SCHOOL OF PUBLIC HEALTH**

### **Administration—PH**

TRICIA PENNIECOOK, M.D., M.P.H. Dean  
HELEN HOPP MARSHAK, Ph.D., Associate Dean for Academic Affairs  
GORDON E. HEWES, M.B.A., Associate Dean for Finance  
DWIGHT BARRETT, Ed.D., Assistant Dean for Student Services  
JESSE BLISS, M.P.H., Assistant Dean, Office of Public Health Practice  
RAFAEL MOLINA, M.Ed, Director of Distance Learning  
WENDY SARAIVIA-GENOVEZ, M.S., Associate Director of Admissions and Academic Records  
PATRICIA MURDOCH, M.P.H., Director of Marketing and Recruitment

### **Department Chairs—PH**

ERIC ANDERSON, Ph.D, M.B.A., Chair, Health Policy and Management  
SYNNOVE M. F. KNUITSEN, M.D., Dr.P.H., Chair, Epidemiology and Biostatistics  
JAYAKARAN JOB, M.D., Dr.P.H., M.B.B.S., Chair, Global Health  
NAOMI N. MODESTE, Dr.P.H., Chair, Health Promotion and Education

SAMUEL SORET, Ph.D., Chair, Environmental and Occupational Health  
 JOAN SABATÉ, M.D., Dr.P.H., Chair, Nutrition

### **Committees—PH**

Admissions Committee  
 Administrative Committee  
 Dr.P.H. Advisory Committee  
 CHR Operating Committee  
 Continuing Professional Education Committee  
 Diversity Committee  
 e-Learning Futures Committee  
 Faculty Rank, Promotion, and Tenure Committee  
 Student Association Advisors  
 Marketing and Recruitment Committee  
 Policies and Procedures Committee  
 Scholarship Policy Committee  
 Wholeness Enhancement Committee

### **Administrative Committee**

Tricia Penniecook, Chair  
 Mary Haulk, Secretary  
 Eric Anderson  
 Dwight Barrett  
 Jesse Bliss  
 Wayne Dysinger  
 Wendy Saravia-Genovez  
 Daniel Handysides  
 Patti Herring  
 Gordon Hewes  
 Jayakaran Job  
 Synnove Knutsen  
 Helen Hopp Marshak  
 Naomi Modeste  
 Rafael Molina  
 Susanne Montgomery  
 Patricia Murdoch  
 Warren Peters  
 Joan Sabaté  
 Samuel Soret

### **Admissions Committee**

Dwight Barrett, Chair  
 Jimmie Banta  
 Larry Beeson  
 Juan Carlos Belliard  
 Wendy Saravia-Genovez

Daniel Handysides  
Helen Hopp Marshak  
Naomi Modeste  
Rafael Molina  
Ryan Sinclair  
Serena Tonstad  
Michelle Wien  
Loretta Wilber

**Academic Council**

Helen Hopp Marshak, Chair  
Gricelda Gomez, Secretary  
Eric Anderson  
Dwight Barrett  
Wendy Saravia-Genovez  
Ella Haddad  
Gordon Hewes  
Synnove Knutsen  
Naomi Modeste  
Rafael Molina  
David Penner  
Joan Sabaté  
Steve Serrao  
Samuel Soret  
Serena Tonstad  
Loreta Wilber  
Student representative

**Awards and Traineeship Committee**

Dwight Barrett, Chair  
Jim Banta  
Molly Dougherty  
Gordon Hewes  
Wendy Saravia-Genovez  
Hildemar dos Santos  
Sharon Rushing  
Sam Soret

**Clinical Facilities—PH**

Center for Health Promotion, Preventive Medicine Clinic  
Evans Hall, Loma Linda University  
Loma Linda, CA 92350  
909/558-4594

**Affiliated Institutions—PH**

Adventist Development and Relief Agency, Washington, DC

Adventist University of the Philippines, Putingkahoy, Silang, Cavite, Philippines

American Cancer Society (Inland Empire), Riverside

Asian Health Project, T.H.E. Clinic, Los Angeles

Atlantic Union College, South Lancaster, MA

Baptist Hospital, Care Unit Chemical Dependency Program and Center for Health Promotion,  
Nashville, TN

California Conference of Directors of Environmental Health, Cameron Park

California Department of Public Health, Sacramento

California State University, Health Science Department, San Bernardino

California State University, San Bernardino

Castle Medical Center, Kailua, HI

Centers for Disease Control and Prevention, Atlanta, GA

Centinela National Athletic Health Institute, Los Angeles

Clinica de Medicina Deportiva del Caribe, Santurce, Puerto Rico

Cooper Aerobic Center, In-Residence Program, Dallas, TX

County of Orange, Health Care Agency, Santa Ana

County of San Bernardino, Health Department, San Bernardino

County of San Diego, Department of Health Services, San Diego

Dine College, New Mexico

Drinking Driver Program Services, San Bernardino

Eisenhower Medical Center, Rancho Mirage

El Progreso del Desierto, Inc., Coachella

Foothill AIDS Project, San Bernardino

General Dynamics, Ontario

Guam SDA Clinic

Health Resources and Services Administration,

Hinsdale Sanitarium and Hospital, Hinsdale, IL

Inland Empire Health Plan

Inland AIDS Project, Riverside

Institute of Stress Medicine, Denver, CO

Inter-American Division of Seventh-day Adventists, Miami, FL

Jerry L. Pettis Memorial Veterans Administration Hospital, Loma Linda

Kahili Mountain School, Kauai, HI

Kaiser Foundation Hospitals (Southern California Kaiser Permanente Medical Center), Fontana

Loma Linda University Medical Center East Campus, Loma Linda

Loma Linda University Medical Center, Loma Linda

Los Angeles County Department of Health Services, Los Angeles

Martin Luther King, Jr./Charles Drew Medical Center, Los Angeles

Native American Coalition, Temecula

People's Choice, Inc., San Bernardino

Pomona Unified School District, Pomona

Portland Adventist Medical Center, Portland, OR

Redlands Community Hospital, Redlands

Riverside County, Department of Public Health, Riverside

Riverside-San Bernardino County, Indian Health, Inc.

San Bernardino County Department of Environmental Health Services, San Bernardino

San Bernardino County Medical Center, San Bernardino

San Bernardino County Public Health Department, San Bernardino

San Diego State University, San Diego

San Joaquin Hospital, Bakersfield

School of Public Health, Adventist University of the Philippines, Putingkahoy, Silang, Cavite, Philippines

Scripps Clinic and Research Foundation, Green Hospital, La Jolla

Sid Richardson Cardiovascular Rehabilitation Institute, Methodist Hospital, Houston, TX

St. Helena Hospital and Health Center, Deer Park

State of California, Department of Public Health, Sacramento

Taiwan Adventist Hospital, Taipei, Taiwan

University of California Berkeley, Berkeley

University of California Center for Health Promotion, Riverside

University of California Los Angeles, Los Angeles

University of Hawaii, Honolulu, HI

Washington Adventist Hospital, Takoma Park, MD

Westminster Medical Group, Westminster

World Vision, International, Monrovia

## SCHOOL OF RELIGION

### Administration—SR

JON PAULIEN, Dean

ROY BRANSON, Associate Dean; Interim Director, Center for Christian Bioethics

ROBERT ORR, Clinical Co-director, Center for Christian Bioethics

CARLA G. GOBER, Director, Center for Spiritual Life and Wholeness

### Committees—SR

#### Center for Christian Bioethics

Dean of School of Religion, Chair

Dean of School of Medicine, Vice chair

Dean of School of Allied Health Professions

Dean of School of Dentistry

Dean of Faculty of Graduate Studies

Dean of School of Nursing

Dean of School of Public Health

Dean of School of Pharmacy

Dean of School of Science and Technology

Chief executive officer, School of Medicine Faculty Practice Group

Representatives-at-large (2)

Theological co-director

Clinical co-director

*Ex officio officers:*

President of Loma Linda University

CEO of Loma Linda University Adventist Health Sciences Center

#### Center for Spiritual Life and Wholeness

LLUAHSC Vice President for Mission and Culture, Chair

Dean of the School of Religion, Vice chair

Director of the Center for Spiritual Life and Wholeness, Secretary

Associate Dean of the School of Religion

LLUAHSC Vice President for Educational Affairs

LLUAHSC Vice President for Research Affairs

Vice President for Enrollment and Student Services

Deans

School of Allied Health Professions

School of Dentistry

School of Medicine

School of Nursing

School of Pharmacy

School of Public Health

School of Science and Technology

Faculty of Graduate Studies

Director of LLUMC Chaplaincy Department  
 Director of LLUMC Employee Spiritual Care Department  
 Representative from the LLU School of Religion  
 Representative from the clinical area of medicine in a LLUAHSC health care entity  
 Representative from the clinical area of nursing in a LLUAHSC health care entity  
 Representative from the clinical area of allied health professions in a LLUAHSC health care entity  
 Representative(s) from the community

**M.A. in Bioethics**

James Walters, Chair  
 Ivan Blazen  
 Roy Branson  
 Mark Carr  
 Debra Craig  
 Andy Lampkin  
 David Larson  
 Jon Paulien  
 Richard Rice  
 Gerald Winslow

**M.A. in Clinical Ministry**

Siroj Sorajjakool, Chair  
 Mark Carr  
 Carla Gober  
 James Greek  
 Johnny Ramirez  
 Randy Roberts  
 David Taylor

**M.A. in Religion and the Sciences**

Richard Rice, Chair  
 Ivan Blazen  
 Ben Clausen  
 Ronald Carter  
 David Larson  
 James Walters  
 Gerald Winslow

**Rank and Tenure**

Richard Rice, Chair  
 Ivan Blazen  
 Mark Carr

**Dean's Council**

Dean, Chair  
 Associate Dean  
 Director of Center for Christian Bioethics

Director of Center for Spiritual Life and Wholeness  
 Director of Bioethics Program  
 Director of Clinical Ministry Program  
 Director of Religion and Sciences Program  
 Director of Humanities Division

#### **Admissions Committee**

Associate Dean, Chair  
 Director of Enrollment Management, Secretary  
 Director of Bioethics Program  
 Director of Clinical Ministry Program  
 Director of Religion and Sciences Program  
 Director of Student Services

## **SCHOOL OF SCIENCE AND TECHNOLOGY**

### **Administration—ST**

BEVERLY BUCKLES, D.S.W., Dean  
 \_\_\_\_\_, Assistant Dean for Administration  
 MIRIAM A. DOMINGO, M.B.A., Associate Dean for Finance  
 SUSAN A. WALTERS, M.Ed., Associate Dean for Academic Affairs

### **Department Chairs—ST**

BEVERLY BUCKLES, D.S.W., Chair, Social Work and Social Ecology  
 LEONARD BRAND, Ph.D., Chair, Earth and Biological Sciences  
 LOUIS JENKENS, Ph.D., Chair, Psychology  
 DANIEL K. KIDO, M.D., Chair, Biophysics and Bioengineering  
 COLWICK WILSON, Ph.D., Chair, Counseling and Family Sciences

### **Committees—ST**

#### **Academic Standards Committee**

Kevin Nick, Chair  
 Leonard Brand  
 Curtis Fox  
 Stephen Dunbar  
 Kimberly Freeman  
 Paul Haerich  
 Louis Jenkins  
 Henry Lamberton  
 Karen Lesniak  
 Carmen Knudson-Martin  
 Froylana Miller  
 Mary Moline  
 Cheryl Simpson  
 Susan Walters

David Vermeersch  
Ignatius Yacoub

**Administrative Council**

Beverly Buckles, Chair  
Leonard Brand  
Dana Carrington  
Richard Davidian  
Miriam Domingo  
Stephen Dunbar  
Marilyn Eggers  
Terry Forrester  
Kim Freeman  
Louis Jenkins  
Mary Moline  
Kevin Nick  
David Vermeersch  
Susan Walters  
Colwick Wilson

**Assessment**

Susan Walters, chair  
Adam Arechiga  
Beverly Buckles  
Leonard Brand  
Paul Buchheim  
Stephen Dunbar  
Ricky Escobar  
Curtis Fox  
Kim Freeman  
Paul Haerich  
Doug Huenergardt  
Carmen Knudson-Martin  
Froylana Miller  
Michelle Minyard-Widmann  
Mary Moline  
Kevin Nick  
Dianna Simon  
Cheryl Simpson  
Dave Vermeersch

**Executive Committe**

Beverly Buckles, Chair  
Leonard Brand  
Kim Freeman

Louis Jenkins  
Mary Moline

**Institutional Review Board (IRB)**

Kelly Morton, chair  
Curtix Fox  
Linda Halstead  
Rich Hartman  
Narineh Hartoonian (graduate student)  
Sigrid James  
Jason Owen

**Rank and Tenure Committee**

Doug Huenergardt, Chair  
Leonard Brand  
Paul Buchheim  
Ian Chand  
Kim Freeman  
Paul Haerich  
Louis Jenkins  
Synnove Knutsen  
Mary Moline  
Christine Neish  
Ignatius Yacoub

**Clinical Affiliates—ST**

Albany Psychology Internship Consortium, VA Albany Medical College  
Anaheim School, Anaheim  
Arroyo High School, San Bernardino  
Assessment and Treatment Services Center

Bilingual Family Counseling, Ontario  
Boys and Girls Club, Redlands

Canyon Ridge Hospital, Chino  
Casa Pacifica Clinical Services  
Catholic Charities Psychological Services  
Chaffey College, Rancho Cucamonga  
Cherokee Health System  
Child and Family Guidance Center, Northridge  
Child Welfare Training, Riverside  
Children's Hospital, Los Angeles  
Children's Hospital of Orange County  
Community Hospice of Victor Valley, Apple Valley

Doctors Hospital of West Covina, West Covina

East Valley SELPA

Family Services Association, Riverside  
Family Solutions Collaborative, Ontario  
Forest Institute of Professional Psychology  
Foster Family Network, San Bernardino

Growing Fit

Harbor-UCLA Medical Center, Los Angeles  
Health and Human Services Department of Aging, San Bernardino County, San Bernardino  
Hesperia Unified School District, Hesperia  
Highlander Children's Services, Riverside  
Huntington Memorial Hospital, Pasadena

Illinois School of Professional Psychology  
Inland Regional Center, Colton  
Inland Temporary Homes, Loma Linda

Jerry L. Pettis Memorial VA Medical Center, Loma Linda  
JFK Memorial Hospital, Indio  
Jurupa Unified School District, Riverside

Kaiser Permanente Hospital, Riverside  
Kaiser Permanente Medical Care Program, Psychiatry Department

Lackland Air Force Base, San Antonio, TX  
Loma Linda University Adult Day Services, Loma Linda  
Loma Linda University Marriage and Family Therapy Clinic,  
Loma Linda University Medical Chaplain's Office, Loma Linda  
Loma Linda University Neuropsychology Department, Loma Linda  
Loma Linda University Psychiatric Medical Group, Loma Linda  
Los Angeles City Department of Child Assessment Center  
Los Angeles County Child Services  
Los Angeles Department of Mental Health  
Lutheran Social Services, Apple Valley

Moreno Valley Community Hospital, Moreno Valley  
Morongo Inland Health, Banning

Oasis Counseling Center, Victorville  
Office of Aging, Riverside  
Office of Aging, San Bernardino

Ontario Montclair School District  
Orange County Department of Child Services

Pacific Clinics Institute  
Patton State Hospital, Highland  
Pediatric Neuroassessment Program

Redlands Community Hospital, Redlands  
Rim Family Services, Sky Forest  
River Oak County Adult Protection Service  
Riverside County Department of Mental Health, Riverside  
Riverside Department of Social Services, Riverside

SACH-Norton Mental Health Clinic,  
San Bernardino City Unified School District, San Bernardino  
San Bernardino County Department of Behavioral Health  
San Bernardino County Department of Mental Health, Colton  
San Bernardino Department of Social Services,  
San Bernardino  
San Bernardino Public Defender, San Bernardino  
San Diego Hospice and Palliative Care, San Diego  
Santa Ana College Health and Wellness Center Psychology Services, Santa Ana  
Senior Care Network, Glendora  
Serenity Infant Care Homes  
Sharper Future  
Shasta County Mental Health Services  
Southern Arizona VA Health Care System  
Spokane Mental Health Psychology Services  
St. Anne's Hospice, Glendale  
Su Casa, Artesia

University of Riverside  
USCD VA Psychology Internship Program

VA Los Angeles Ambulatory Care Center  
VA Sierra Nevada Health Care System  
Verdugo Hills Hospital, Glendale  
Veterans Affairs Hospital, Loma Linda  
Village of Child Hope, Beaumont  
Vitas Innovative Hospice Care, San Bernardino

Warm Springs Counseling Center, Boise, ID  
West End Valley Counseling, Ontario  
Western Youth Service, Fullerton  
Wilford Hall Medical Center, Lackland Air Force Base

Youth Service Center, Riverside  
Yucaipa Guidance, Redlands

## **FACULTY OF GRADUATE STUDIES**

### **Administration—GS**

ANTHONY J. ZUCCARELLI, Ph.D., Dean

RAFAEL A. CANIZALES, Ph.D., Associate Dean for Administrative Affairs

### **Committees—GS**

#### **Graduate Council**

Anthony J. Zuccarelli, Chair

Elizabeth Bossert

Bruce Currie

Carlos Casiano

Stephen Dunbar

Curtis Fox

Ella Haddad

Louis Jenkins

Everett Lohman

Patrick Naylor

Kevin Nick

Kerby Oberg

Janelle Pyke

Richard Rice

Ignatius Yacoub

Bruce Wilcox

Steven Yellon

Grenith Zimmerman

#### **Rank and Tenure**

Leonard Brand, Chair

Paul Buchheim

Beverly Buckles

Ian Chand

Paul Haerich

Louis Jenkins

Mary Moline

Christine Neish

Robert Teel

Ignatius Yacoub

## Accreditation Status

### THE UNIVERSITY

Founded as College of Evangelists 1905-06. Chartered as College of Medical Evangelists by the state of California December 13, 1909. Accredited by Northwest Association of Secondary and Higher Schools April 7, 1937. Accredited by WASC (Western Association of Schools and Colleges) (prior to January 1962, Western College Association) February 24, 1960. Became Loma Linda University July 1, 1961. Professional curricula started and approved as indicated.

### THE PROFESSIONS

#### Faculty of Graduate Studies

Started in 1954 as the Graduate School, with accreditation through the University accreditation; continued through 2004; restructured as the Faculty of Graduate Studies in 2005.

#### School of Allied Health Professions

CLINICAL LABORATORY SCIENCE (formerly, Medical Technology): Started in 1937. Approved by the Council on Medical Education of the American Medical Association since August 28, 1937. Currently accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Currently approved by the California Department of Public Health, Laboratory Field Services.

COMMUNICATION SCIENCES AND DISORDERS (formerly SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY): Approved by the American Speech-Language-Hearing Association June 1, 1991.

CYTOTECHNOLOGY: Started in 1982. Initial approval January 20, 1983, by the Commission on Accreditation of Allied Health Education Programs in collaboration with the Cytotechnology Programs Review Committee.

DIAGNOSTIC MEDICAL SONOGRAPHY: Started in 1976 as diagnostic medical sonography. Approved by the Joint Review Committee on Education in Diagnostic Medical Sonography October 24, 1985.

DIETETIC TECHNOLOGY: Started in 1988. The Dietetic Technology Program is currently granted continuing accreditation by the Commission on Accreditation for Dietetics Education of the American Dietetic Association April 25, 1988.

EMERGENCY MEDICAL CARE: Started in 1993 as a baccalaureate degree program for paramedics, respiratory therapists, and other allied health professionals desiring education, science, or management credentials in emergency medical services.

HEALTH INFORMATION MANAGEMENT: Started as medical record administration in 1963. Approved by the Council on Medical Education of the American Medical Association since December 1, 1963. Currently approved by the Commission on Accreditation of Allied Health Education Programs in collaboration with the American Health Information Management Association.

MEDICAL RADIOGRAPHY: Started in 1941 as radiological technology. Approved by the Council on Medical Education of the American Medical Association November 19, 1944. Currently approved by the Joint Review Committee on Education in Radiologic Technology and the California State Department of Public Health.

NUCLEAR MEDICINE TECHNOLOGY: Started in 1970. Approved by the Council on Medical Education of the American Medical Association June 23, 1973. Currently approved by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology.

**NUTRITION AND DIETETICS:** Started in 1922 as a certificate program; baccalaureate degree conferred 1932-54; M.S. in nutrition and dietetics began in 2008; graduate program offered since 1954. Internship program continuously approved by The American Dietetic Association from 1957 through 1974; reestablishment of baccalaureate degree program authorized October 1971. Since 1974 the Coordinated Program in Dietetics has been granted accreditation by the Commission on Accreditation for Dietetics Education of the American Dietetic Association.

**OCCUPATIONAL THERAPY:** Started in 1959. Initial approval by the Council on Medical Education of the American Medical Association June 10, 1960. Full approval March 30, 1962. Currently approved by the Accreditation Council for Occupational Therapy Education.

**OCCUPATIONAL THERAPY ASSISTANT:** Started in 1988. Approved by the Commission on Accreditation of Allied Health Education Programs in collaboration with The American Occupational Therapy Association (AOTA) April 13, 1989. Currently accredited by the Accreditation Council for Occupational Therapy Education of the AOTA.

**PHLEBOTOMY:** Started in 1994. Accredited/Approved April 1997 by the California Department of Public Health (CDPH), Laboratory Field Services (LFS).

**PHYSICAL THERAPIST ASSISTANT:** Started in 1989. Currently approved by the American Physical Therapy Association via the Commission on Accreditation in Physical Therapy Education (CAPTE).

**PHYSICAL THERAPY:** Started in 1941. Initial approval by the Council on Medical Education of the American Medical Association June 6, 1942. Currently approved by the American Physical Therapy Association.

**PHYSICIAN ASSISTANT SCIENCES:** Started in 2000. Provisional accreditation granted October 20, 2000, by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Effective January 1, 2001, CAAHEP was succeeded by the Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA). Accredited March 2002 by ARC-PA.

**RADIATION THERAPY:** Approved by the Council on Medical Education of the American Medical Association December 1, 1974. Currently approved by the Joint Review Committee on Education in Radiologic Technology.

**RESPIRATORY CARE:** Started in 1971. Initial approval by the Council on Medical Education of the American Medical Association September 1972. Full approval June 1973. Currently approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in collaboration with the Committee on Accreditation for Respiratory Care (CoARC) (formerly known as Joint Review Committee for Respiratory Therapy Education [JRCRTE]).

Programs offered through the School of Allied Health Professions in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

### **School of Dentistry**

**DOCTOR OF DENTAL SURGERY:** Started in 1953. Approved by the Commission on Dental Accreditation of the American Dental Association since May 23, 1957.

**DENTAL HYGIENE:** Started in 1959. Approved by the Commission on Dental Accreditation of the American Dental Association since September 7, 1961. Degree Completion Program began January 7, 2008.

**ENDODONTICS:** Started in 1967. Approved by the Commission on Dental Accreditation of the American Dental Association since December 1969.

**ORAL AND MAXILLOFACIAL SURGERY:** Started in 1964. Approved by the Commission on Dental Accreditation of the American Dental Association since 1967.

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS: Started in 1960. Approved by the Commission on Dental Accreditation of the American Dental Association since May 1965.

PEDIATRIC DENTISTRY: Started in 1993. Approved by the Commission on Dental Accreditation of the American Dental Association since December 1993.

PERIODONTICS: Started in 1961. Approved by the Commission on Dental Accreditation of the American Dental Association since December 1967.

PROSTHODONTICS: Started in 1993. Approved by the Commission on Dental Accreditation of the American Dental Association since February 1995.

Programs offered through the School of Dentistry in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

### **School of Medicine**

Started in 1909. Approved by the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association since November 16, 1922.

Programs offered through the School of Medicine in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

### **School of Nursing**

Hospital school started at Loma Linda in 1905. Hospital school added at Los Angeles in 1924. Collegiate program in nursing organized in 1948. Accredited by the National Nursing Accrediting Service December 10, 1951, with approval continuing under the National League for Nursing until 2001. Initial 1917 approval of the California State Board of Health extended until college program approved July 1, 1952, by the California Board of Registered Nursing. California Board of Registered Nursing approval since 1952. Public health nursing preparation recognized in 1959. School accredited by the Commission on Collegiate Nursing Education (CCNE) since 1999.

Programs offered through the School of Nursing in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

### **School of Pharmacy**

Started in 2002. Approved by the Accreditation Council for Pharmaceutical Education since June 23, 2007.

### **School of Public Health**

Started in 1948; reorganized in 1964. Approved by the American Public Health Association June 23, 1967. Currently accredited by the Council on Education for Public Health.

### **School of Religion**

Started in 1961 as the Division of Religion; organized as School of Religion (1987-1990), Faculty of Religion (1990-2006), School of Religion 2007. Programs accredited through University accreditation.

### **School of Science and Technology**

Started in 2004, combining programs established one to five decades ago. Programs accredited through the University accreditation and/or through their professional accrediting bodies.

Programs offered through the School of Science and Technology in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

## Accrediting Agencies

### THE UNIVERSITY

Loma Linda University is accredited by WASC: Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges.

985 Atlantic Avenue, Suite 100  
Alameda, CA 94501  
Phone: 510/748-9001  
FAX: 510/748-9797  
Web site: <wascweb.org>  
Email: <wascsr@wascsenior.org>

WASC is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Post-secondary Accreditation.

All entry-level degrees are accredited by their respective professional accrediting associations. In addition to WASC, the following agencies accredit specific University schools or programs\*:

### SCHOOL OF ALLIED HEALTH PROFESSIONS

#### Cardiopulmonary Sciences

##### Respiratory Care

Committee on Accreditation for Respiratory Care (CoARC)  
1248 Harwood Road  
Bedford, TX 76021-4244  
Phone: 800/874-5615 or 817/283-2835  
FAX: 817/354-8519 or 817/252-0773  
Web site: <coarc.com>  
Email: <richwalker@coarc.com>

#### Clinical Laboratory Science

##### Phlebotomy Certificate

California Department of Public Health (CDPH)  
Laboratory Field Services (LFS)  
Northern California Office  
850 Marina Bay Parkway  
Building P, 1st Floor  
Richmond, CA 94804-6403  
Phone: 510/620-3800  
Web site: <cdph.ca.gov>

**Clinical Laboratory Science (formerly medical technology)**

National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)  
5600 North River Road, Suite 720  
Rosemont, IL 60018  
Phone: 773/714-8880  
FAX: 773/714-8886  
Web site: <naacls.org>  
Email: <naacclsinfo@naaccls.org>

California Department of Public Health (CDPH)  
Laboratory Field Services (LFS)  
850 Marina Bay Parkway  
Building P, 1st Floor  
Richmond, CA 94804-6403  
Phone: 510/620-3800

**Cytotechnology**

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
35 East Wacker Drive, Suite 1970  
Chicago, IL 60601-2208  
Phone: 312/553-9355  
FAX: 312/553-9616  
Web site: <caahep.org>  
Email: <caahep@caahep.org>

**Communication Sciences and Disorders (formerly Speech-Language Pathology and Audiology)**

Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA)  
of the American Speech-Language-Hearing Association (ASHA)  
2200 Research Boulevard  
Rockville, MD 20850-3289  
Phone: 301/296-5700  
FAX: 301/571-0457  
Web site: <asha.org>  
Email: <accreditation@asha.org>

**Health Information Management****Health Information Administration**

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
35 East Wacker Drive, Suite 1970  
Chicago, IL 60601-2208  
Phone: 312/553-9355  
FAX: 312/553-9616  
Web site: <caahep.org>  
Email: <caahep@caahep.org>

## **Nutrition and Dietetics**

**Nutrition and Dietetics Program–B.S.**

**Nutrition and Dietetics Program–M.S.**

**Nutrition Care Management Online Program–M.S.**

Commission on Accreditation for Dietetics Education (CADE)  
of the American Dietetic Association  
120 South Riverside Plaza, Suite 2000  
Chicago, IL 60606-6995  
Phone: 312/899-0040, ext. 5400; or 800/877-1600, ext. 5400  
FAX: 312/899-4817  
Web site: <eatright.org/cade>  
Email: <education@eatright.org>

## **Occupational Therapy**

The Accreditation Council for Occupational Therapy Education (ACOTE)  
P.O. Box 31220  
Bethesda, MD 20824-1220  
Phone: 301/652-2682 or toll free 800/377-8555  
FAX: 301/652-7711  
Web site: <aota.org>  
Email: <accred@aota.org>

## **Physical Therapy**

Commission on Accreditation in Physical Therapy Education (CAPTE)  
1111 North Fairfax Street  
Alexandria, VA 22314  
Phone: 703/706-3245  
FAX: 703/838-8910  
Web site: <apta.org>  
Email: see Web site

## **Physician Assistant Sciences**

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA)  
Medical Education Department 1R6  
1000 North Oak Avenue  
Marshfield, WI 54449-5778  
Phone: 715/389-3785  
FAX: 715/387-5163  
Web site: <arc-pa.org>  
Email: <mccartyj@mfldclin.edu>

## **Radiation Technology**

### **Medical Radiography–A.S.**

The American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155

### **Radiation Therapy Technology–Certificate**

Joint Review Committee on Education in Radiologic Technology (JRCERT)  
20 North Wacker Drive, Suite 900  
Chicago, IL 60606-2901  
Phone: 312/704-5300  
FAX: 312/704-5304  
Web site: <[www.jrcert.org](http://www.jrcert.org)>

### **Diagnostic Medical Sonography–Certificate**

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
35 East Wacker Drive, Suite 1970  
Chicago, IL 60601-2208  
Phone: 312/553-9355  
FAX: 312/553-9616  
Web site: <[caahep.org](http://caahep.org)>  
Email: <[caahep@caahep.org](mailto:caahep@caahep.org)>

Joint Review Committee on Education in Diagnostic Medical Sonography (JRCE-DMS)  
1248 Harwood Road  
Bedford, TX 76021-4244  
Phone: 817/685-6629  
FAX: 817/354-8519  
Web site: <[jrcdms.org](http://jrcdms.org)>  
Email: <[sharonworthing@coarc.com](mailto:sharonworthing@coarc.com)>

### **Nuclear Medicine Technology–Certificate**

California Department of Public Health Radiologic Health Branch  
P.O. Box 997414, MS 7610  
Sacramento, CA 95899-7414  
Phone: 916/327-5106  
FAX: 916/440-7999  
Web site: <[cdph.ca.gov/programs/Pages/RadiologicHealthBranch.aspx](http://cdph.ca.gov/programs/Pages/RadiologicHealthBranch.aspx)>  
Email: <[RKubiak@dhs.ca.gov](mailto:RKubiak@dhs.ca.gov)>

**SCHOOL OF DENTISTRY**

Commission on Dental Accreditation (CODA)  
of the American Dental Association (ADA)  
211 East Chicago Avenue  
Chicago, IL 60611  
Phone: 800/621-8099  
FAX: 312/440-2915  
Web site: <ada.org>  
Email: <accreditation@ada.org>

**SCHOOL OF MEDICINE**

Liaison Committee on Medical Education (LCME)  
of the Association of American Medical Colleges  
2450 N Street NW  
Washington, DC 30037  
Phone: 202/828-0596  
FAX: 202/828-1125  
Web sites: <lcme.org>; <aamc.org>  
Email: <lcme@aamc.org>

**SCHOOL OF NURSING**

Commission on Collegiate Nursing Education (CCNE)  
One Dupont Circle NW, Suite 530  
Washington, DC 20036-1120  
Phone: 202/887-6791  
FAX: 202/887-8476  
Web site: <www.aacn.nche.edu/accreditation>

Council on Accreditation of Nurse Anesthesia Educational Programs (COA)  
of the American Association of Nurse Anesthetists (AANA)  
222 South Prospect Avenue, Suite 304  
Park Ridge, IL 60068-4001  
Phone: 847/692-7050  
FAX: 847/692-6968  
Web site: <aana.com>  
Email: <info@aana.com>

**SCHOOL OF PHARMACY**

Accreditation Council for Pharmacy Education (ACPE)  
20 North Clark Street, Suite 2500  
Chicago, IL 60602-5109  
Phone: 312/664-3575  
FAX: 312/664-4652  
Email: <info@acpe-accredit.org>

## SCHOOL OF PUBLIC HEALTH

Council on Education for Public Health (CEPH)  
800 Eye Street NW, Suite 202  
Washington, DC 20001-3710  
Phone: 202/789-1050  
FAX: 202/789-1895  
Web site: <ceph.org>  
Email: <jconklin@ceph.org>

### **Nutrition**

Nutrition Commission on Accreditation for Dietetics Education (CADE)  
of the American Dietetic Association  
120 South Riverside Plaza, Suite 2000  
Chicago, IL 60606-6995  
Phone: 312/899-0040, ext. 5400 or 800/877-1600, ext. 5400  
FAX: 312/899-4817  
Web site: <eatright.org/cade>  
Email: <education@eatright.org>

## SCHOOL OF SCIENCE AND TECHNOLOGY

### **Counseling and Family Sciences**

#### **Marital and Family Therapy**

Commission on Accreditation for Marriage and Family Therapy Education  
of the American Association for Marriage and Family Therapy (AAMFT)  
1133 15th Street NW, Suite 300  
Washington, DC 20005-2710  
Phone: 202/467-5111 or 452-0109  
FAX: 202/223-2329  
Web site: <aamft.org>  
Email: <coamfte@aamft.org>

#### **Pupil Personnel Services Credential**

California Commission on Teacher Credentialing (CTC)  
California State Department of Education

#### **Psychology**

Committee on Accreditation (COA)  
of the American Psychological Association (APA)  
750 First Street NE  
Washington, DC 20002-4242  
Phone: 202/336-5500  
FAX: 202/336-5978  
Web site: <apa.org>  
Email: <education@apa.org>

**Social Work**

Commission on Accreditation (COA)  
of the Council on Social Work Education (CSWE)  
Division of Standards and Accreditation  
1600 Duke Street, Suite 500  
Alexandria, VA 22314-3457  
Phone: 703/683-8080  
FAX: 703/683-8099  
Web site: <[cswe.org](http://cswe.org)>  
Email: <[info@cswe.org](mailto:info@cswe.org)>

## Alumni Associations

### SCHOOL OF DENTISTRY

Graduates of the School of Dentistry organized the Alumni Association in 1957. Membership is extended to those who have earned degrees at this school. Student membership is extended to students of the school.

The primary purposes of the association are to promote the interests of the school, to secure unity among alumni, to foster alumni attachment to alma mater, to enlist members as continuing participants in the association and as active participants in Christian activities and interests, to aid members in attaining to the highest ethical and scientific standards in the practice of their profession, and to aid in general charitable and educational purposes. Major interests of the association include:

1. Hosting the Alumni-Student Convention, including continuing education programs, class reunions, and spiritual events.
2. Advancing the Century Club. Members include alumni and others of the dental profession who contribute a qualifying amount annually to promote and support interests of the alumni and the school.
3. Preparing and distributing alumni and school news to faculty, staff, students, donors, and alumni via the biannual *Dentistry Journal*, the monthly *Dentalgram*, the *Biennial Report*, and continuous electronic media; such as, the Internet and email communications.

The School of Dentistry Alumni Association has made an ongoing commitment to students at the school by supporting a student loan fund and a scholarship endowment fund, both of which are administered by the University.

### SCHOOL OF MEDICINE

Graduates of the School of Medicine organized their Alumni Association in 1915 when only two classes totaling eighteen members had been graduated, and the organization has functioned continuously since that time. Membership is extended to alumni who have graduated with the Doctor of Medicine degree from this University and to graduates of the American Medical Missionary College, operated by Seventh-day Adventists in Battle Creek, Michigan, from 1895 to 1910. Associate membership is extended to students of the School of Medicine, and affiliate membership is extended to faculty who have earned degrees from other institutions. During the 1986-1987 school year, membership was extended to the basic science faculty.

#### Statement of mission and purpose

The Alumni Association of the School of Medicine of Loma Linda University is a nonprofit organization composed both of alumni and affiliate members. The association is organized to support the school, to promote excellence in worldwide health care, and to serve its members in the following ways:

1. EDUCATION—To encourage continuing education among its members by organizing and offering graduate education and related programs at the Annual Postgraduate Convention and at other health care seminars.
2. COMMUNICATION—To publish newsworthy, factual information about alumni and developments at the School of Medicine in the alumni journal, in the annual directory, and in journals of organizations under the umbrella of the association.

3. **HEALTH CARE**—To foster improved health care and preventive medicine throughout the world by conducting postgraduate seminars, demonstrations, and people-to-people, health care interactions with Christian concern and compassion.
4. **PHILANTHROPY**—To encourage the contribution of funds for the support of undergraduate and graduate education at the school, including funds for student loans, research, and professorial chair endowments; and funds to provide for improvement in the school's physical plant. To encourage donations of money, equipment, and supplies for educational centers and health care facilities in areas of need worldwide.
5. **MEDICAL RESEARCH**—To support medical research among the faculty and students of the school, thereby enhancing the association's ability to respond to the needs of its alumni and to advance medical knowledge.
6. **FRATERNITY**—To promote and provide gatherings, in an atmosphere of Christian and professional friendship, which foster unity and advance the foregoing objectives.

## **SCHOOL OF NURSING**

The Loma Linda University School of Nursing Alumni Association (LLUSNAA) has an office in West Hall. A board of officers and directors carries out the goals and ongoing activities of the association. At the time of graduation, new graduates are welcomed into the association. Associate membership may be extended to graduates of other accredited schools who are members of the profession in good standing and who share the interests, ideals, and purposes of the alumni association.

### **Purpose**

The purpose of the LLUSNAA is to foster alumni unity, mobilize their support, and assist in an organized fashion to encourage continued interest in and commitment to the programs of the School of Nursing. The association promotes the missions of the Seventh-day Adventist Church, the School of Nursing, and the University. The goals of the association are to:

1. Promote communication among alumni of the School of Nursing and nursing majors in programs in conjunction with the Faculty of Graduate Studies.
2. Foster the advancement of education and science within the programs of the School of Nursing.
3. Support alumni nurses in mission programs at home and abroad.

## To Communicate with LLU

### MAIL:

Loma Linda University  
11060 Anderson Street  
Loma Linda, CA 92350

### PHONE:

Switchboard: 909/558-1000, 909/558-4300  
Area code: 909/

### WORLDWIDE WEB:

<llu.edu>

For information about LLU: 1/800/422-4LLU  
Dialing from Canada: 1/800/548-7114

Phone:			Fax:	
Off-campus	On-campus		Off-campus	On-campus
558-4540	44540	President	558-0242	80242
558-4787	44787	Diversity	558-0140	80140
558-4510	44510	Student Affairs, student welfare, housing, visas	558-4879	44879
558-4955	44955	International Student Services	558-4879	44879
558-4520	44520	Student Finance	558-7904	87904
558-4509	44509	Student Financial Aid	558-4879	44879
558-4508	44508	University Records	558-4879	44879
558-8770	88770	Student Health Service	558-0433	80433
558-6028	66028	Student Counseling	558-6090	66090
558-6050	66050	Student Assistance Program Spiritual Counseling	558-6051	66051
558-8348	88348	Campus Chaplain/Campus Ministries	558-0347	80347
558-4570	44570	University Church	558-4186	44186
809-1049	44270	Campus Hill Church	796-1992	
558-9200	39200	LLU Behavioral Medicine Center	558-9243	39243

### Faculty of Graduate Studies

558-1800	81800	Admissions	558-4528	44528
558-9485	83374	Dean	558-0908	80908

### The Schools

#### Allied Health Professions

558-4599	44599	Admissions	558-4291	44291 attn. Admissions
558-4545	44545	Dean	558-4291	44291 attn. Dean
558-4932	44932	Cardiopulmonary Sciences	558-4701	44701 attn. CPSC

Phone:			Fax:	
Off-campus	On-campus		Off-campus	On-campus
558-4966	44966	Clinical Laboratory Science	558-0458	80458 attn. CLSC
558-4998	44998	Communication Sciences and Disorders (formerly Speech-Language Pathology/Audiology)	558-4291	44291 attn. SPPA
558-4976	44976	Health Information Management	558-0404	80404 attn. HLIN
558-7389	87389	Health Science (B.S., Japan only)	558-0982	80982 attn. HSCI
558-4593	44593	Nutrition and Dietetics	558-4291	44291 attn. DTCS
558-4628	44628	Occupational Therapy	558-0239	80239 attn. OOTH
558-4948	44948	Occupational Therapy Assistant	558-0239	80239 attn. OCTA
558-4632	44632	Physical Therapy	558-0459	80459 attn. PHTH
558-4634	44634	Physical Therapist Assistant	558-0459	80459 attn. PTA
558-7295	87295	Physician Assistant Sciences	558-0495	80495 attn. PAST
558-4931	44931	Radiation Technology	558-4291	44291 attn. RTCH
558-4998	47224	Speech-Language Pathology Assistant	558-4291	44291 attn. SLPA
<b>Dentistry</b>				
558-4222	44222	Dentistry	558-0730	80730
558-4621	44621	Admissions	558-0195	80195
558-4683	44683	Dean	558-0483	80483
558-8624	88624	Advanced Dental Education Programs	558-0632	80632
558-4621	44621	Dentistry Program	558-0195	80195
558-4621	44621	Dental Hygiene Program	558-0195	80195
558-4621	44621	International Dentist Program	558-0195	80195
558-4790	44790	SD Student Affairs	558-0150	80150
558-4601	44601	SD Academic Affairs	558-0730	80730
<b>Medicine</b>				
558-4462	44462	Medicine	558-4146	44146
558-4467	44467	Admissions	558-0359	80359
558-4481	44481	Dean	558-4146	44146

Phone:			Fax:	
Off-campus	On-campus		Off-campus	On-campus
<b>Nursing</b>				
558-1000	44360	Nursing	558-4134	44134
558-4923	44923	Admissions	558-0175	80175
558-4517	44517	Dean	558-0225	80225
558-8061	88061	Graduate	558-0719	80719
558-8060	88060	Undergraduate	558-0643	80643
558-7122	87122	International Nursing	558-0224	80224
<b>Pharmacy</b>				
558-1300	41300	Pharmacy	558-4859	44859
558-1300	41300	Admissions	558-4859	44859
558-4745	44745	Dean	558-7973	87973
<b>Public Health</b>				
558-4546	44546	Public Health	558-4087	44087
558-4918	44918	Addiction Medicine Fellowship	558-4087	44087
558-8776	88776	Admissions/Academic Records	558-4087	44087 attn. Admissions
558-4578	44578	Dean	558-4087	44087 attn. Dean
558-8750	88750	Environmental and Occupational Health	558-0493	84493 attn. ENVH
558-8750	44590	Epidemiology and Biostatistics	558-0326	80326 attn. EPDM/ STAT
558-4902	44902	Global Health	558-0389	80389 attn. GLBH
558-4573	44573	Health Policy and Management	558-0469	80469 attn. HADM
558-4741	44741	Health Promotion and Education	558-0471	80471 attn. HPRO
558-4575	44741	Maternal and Child Health	558-0471	
558-4598	44598	Nutrition	558-4095	44095 attn. NUTR
558-4918	44918	Occupational Medicine Residency Program	558-4087	44087
558-4918	44918	Preventive Medicine Residency Program	558-4087	44087 attn. PMR

Phone:			Fax:	
Off-campus	On-campus		Off-campus	On-campus
<b>Religion</b>				
651-5952	15952	Admissions and Marketing	558-4856	44856
558-8434	88434	Dean	558-4856	44856
651-5952	15849	Student Services	558-4856	44586
651-5952	15952	Bioethics M.A. Program	558-4856	80336
558-4956	15952	Center for Christian Bioethics	558-0336	80336
558-7786	87786	Center for Spiritual Life and Wholeness	558-7988	87988
651-5952	15952	Clinical Ministry M.A. program	558-4856	44856
651-5952	15952	Religion and the Sciences M.A. program	558-4856	44856
651-5097	15097	Division of Humanities	558-4856	44856
<b>Science and Technology</b>				
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558-4528	44528	Dean	558-0441	80441
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<b>Faculty of Graduate Studies</b>		<llu.edu/science-technology/grad>	<azuccarelli@llu.edu>	
<b>Admissions</b>		<llu.edu/science-technology/grad>	<admissions.gs@llu.edu>	
<b>The Schools</b>				
<b>Allied Health Professions</b>		<llu.edu/allied-health>		
Admissions			<admissions@sahp.llu.edu> attn. Admissions	
Cardiopulmonary Sciences			<admissions@sahp.llu.edu> attn. CPSC	
Clinical Laboratory Science			<clin.sahp@llu.edu> attn. CLSC	
Communication Sciences and Disorders			<admissions@sahp.llu.edu> attn. SPPA	
Health Information Management			<admissions@sahp.llu.edu> attn. HLIN	
Nutrition and Dietetics			<nutrition@llu.edu> attn. DTCS	

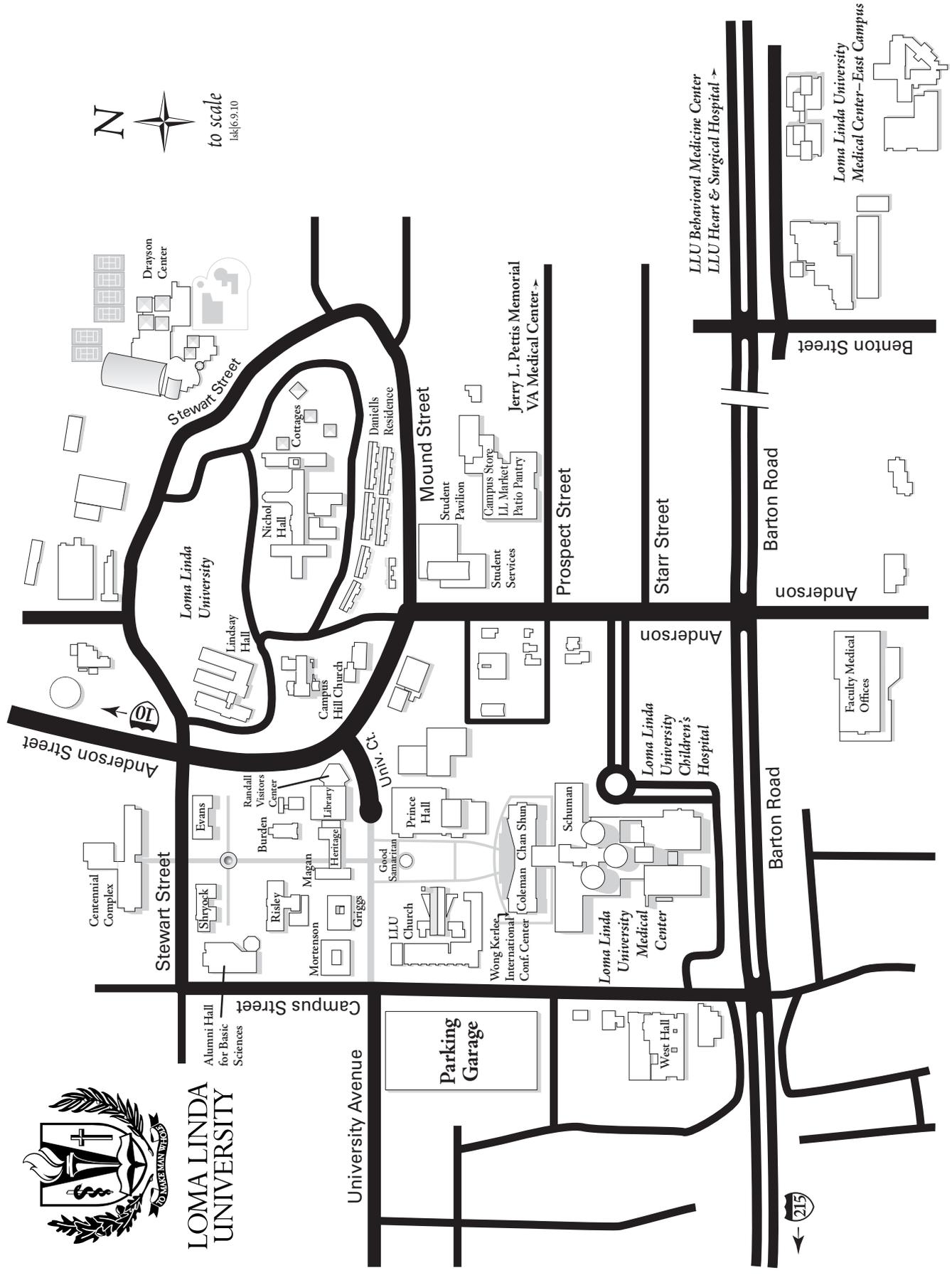
	Web site	Email
Occupational Therapy		<admissions@sahp.llu.edu> attn. OCTH
Physical Therapy		<admissions@sahp.llu.edu> attn. PHTH
Physical Therapy Assistant		<admissions@sahp.llu.edu> attn. PTA
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Graduate Programs	<llu.edu/dentistry/ gradprograms>	<advanceddentaledu@llu.edu>
Anesthesiology	<llu.edu/dentistry/anesthesia/ graduateprogram.page>	<advanceddentaledu@llu.edu>
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Implant Dentistry	<llu.edu/dentistry/implant/ graduateprogram.page>	<advanceddentaledu@llu.edu>
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Orthodontics	<llu.edu/dentistry/ortho/ graduateprogram.page>	<advanceddentaledu@llu.edu>
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Periodontics	<llu.edu/dentistry/perio/ graduateprogram.page>	<advanceddentaledu@llu.edu>
Prosthodontics	<llu.edu/dentistry/prostho/ graduateprogram.page>	<advanceddentaledu@llu.edu>
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Admissions		<admissions.sp@llu.edu>
<b>Public Health</b>	<llu.edu/public-health>	
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Center for Christian Bioethics	<llu.edu/central/bioethics>	<bioethics@llu.edu>
Center for Spiritual Life and Wholeness	<llu.edu/wholeness>	
Director, Division of Humanities		<rhyman@llu.edu>
<b>Science and Technology</b>	<llu.edu/science-technology>	<admissions.sst@llu.edu>



# LOMA LINDA UNIVERSITY

Alumni Hall  
for Basic  
Sciences



Centennial Complex

Stewart Street

Anderson Street

University Avenue

Stewart Street

Anderson Street

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Drayson Center

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Nichol Hall

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Daniels Residence

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Student Services

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Student Pavilion

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Campus Store

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LL Market

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Patisserie

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Jerry L. Pettis Memorial VA Medical Center

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LLU Behavioral Medicine Center

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LLU Heart & Surgical Hospital

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Loma Linda University Medical Center-East Campus

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LLU Heart & Surgical Hospital

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Loma Linda University Medical Center-East Campus

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