LOMA LINDA UNIVERSITY

2014–2015

Catalog

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2014-2015

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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 is 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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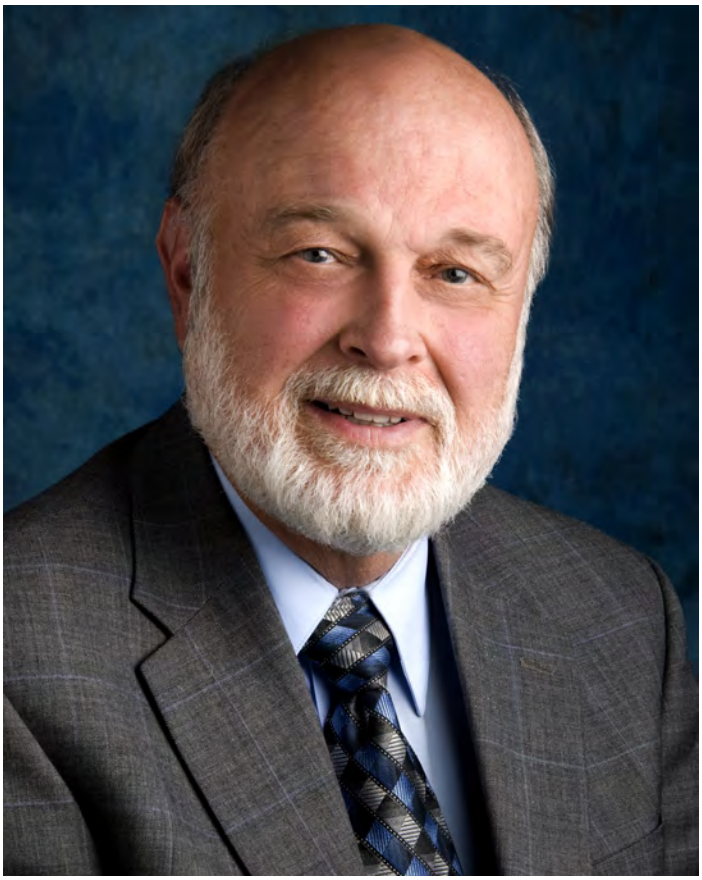
Introduction

Loma Linda University (LLU) (http://www.llu.edu) is a Seventh-day Adventist educational health-sciences institution with more than 4,000 students located in Southern California. Eight schools comprise the University organization. More than 55 programs are offered by the schools of Allied Health Professions (http://www.llu.edu/allied-health), Dentistry (http://www.llu.edu/dentistry), Medicine (http://www.llu.edu/medicine), Nursing (http://www.llu.edu/nursing), Pharmacy (http://www.llu.edu/pharmacy), Public Health (http://www.llu.edu/public-health), Religion (http://www.llu.edu/religion) and Behavioral Health (http://www.llu.edu/behavioral-health). Curricula offered range from certificates of completion and Associate in Science degrees to Doctor of Philosophy and professional doctoral degrees. Students from more than 80 countries around the world and virtually every state in the nation are represented in Loma Linda University's student body. LLU also offers distance education (http://www.llu.edu/central/academics/distance.page).

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 University at 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 44,000 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
BH	School of Behavioral Health
PH	School of Public Health
SD	School of Dentistry
SM	School of Medicine
SN	School of Nursing
SP	School of Pharmacy
SR	School of Religion
FGS	Faculty of Graduate Studies
IS	Interdisciplinary Studies (LLU diploma, across schools/ faculties)
UG	Undergraduate
PB	Postbaccalaureate
PD	Post-D.D.S. or Post-D.M.D.
PM	Post-master's
PMD	Post-M.D.
PP	Postprofessional
*	off-campus, Thailand
**	off-campus, Saudi Arabia
***	off-campus, Haiti

Program	School	Degrees/Certificates Offered
Anatomy	SM	M.S., Ph.D.
Biochemistry	SM	M.S., Ph.D.
Biology	SM	M.S., Ph.D.
Bioethics	SR	M.A., PB certificate
Biomedical Sciences	SD	PB certificate
Biomedical Sciences	SM	M.M.S.
Biostatistics	PH	M.P.H., M.S., PB certificate
Cardiac Electrophysiology Technology	AH	A.S. (on campus), Certificate (online)
Chaplaincy	SR	M.S.Chap.
Child Life Specialist	BH	M.S.
Clinical Mediation	BH	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.
Counseling	BH	M.S.
Counseling, Family	BH	PB certificate (See: Family Counseling)
Counseling, School	BH	PB certificate (See: School Counseling)
Criminal Justice	BH	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	A.S., B.S. (B.S. completion program online)
Dentistry, General	SD	D.D.S.
Dentist Program, International	SD	D.D.S.
Diagnostic Medical Sonography	AH	Certificate
Drug and Alcohol Counseling	BH	PB certificate
Earth Science	SM	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
Environmental and Occupational Health	PH	M.P.H.
Environmental Sciences	SM	B.S.
Epidemiological Research Methods	PH	PB certificate
Epidemiology	PH	M.P.H., Dr.P.H., Ph.D., PB certificate
Family Counseling	BH	PB certificate
Family Life Education	BH	PB certificate
Family Studies	BH	M.A., Ph.D.
Geology	SM	B.S., M.S.
Gerontology	BH	M.S.
Global Health	PH	M.P.H.
Health Care Administration	AH	B.S. (online)

Health Care Administration	PH	M.B.A.
Health Education	PH	M.P.H., Dr.P.H. (on campus and online)
Health Geoinformatics	PH	PB certificate (online)
Health Informatics	AH	M.S. (on campus and online)
Health Information Administration	AH	B.S. (HIT Progression online), PB certificate
Health Policy and Leadership	PH	M.P.H., Dr.P.H.
Health Professions Education	AH	M.S., PB certificate (on campus and online)
Health Promotion and Education	PH	(See: Health Education)
Health Science	IS	B.S.
Imaging Informatics	AH	Certificate (online)
Implant Dentistry, Advanced	SD	M.S., M.S.D., PD certificate
International Dentist Program	SD	(See: Dentist Program, International)
Lifestyle Intervention	PH	PB certificate (on campus and online)
Lifestyle Medicine	PH	M.P.H. (on campus and online)
Marital and Family Therapy	BH	M.S., D.M.F.T., Ph.D.
Maternal and Child Health	PH	M.P.H., PB certificate
Medical Dosimetry	AH	Certificate
Medical Family Therapy	BH	PM 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	SM	M.S.
Nuclear Medicine Technology	AH	B.S.
Nursing	SN	B.S., M.S.*, PM advanced certificates, D.N.P., Ph.D.
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. (online)
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.O.P.
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	D.P.T., D.Sc.
Physician Assistant	AH	M.P.A.
Physiology	SM	M.S., Ph.D.
Play Therapy	BH	PM certificate
Polysomnography	AH	Certificate
Population Medicine	PH	M.P.H. (online)
Preventive Care	PH	Dr.P.H.
Prosthodontics, Advanced	SD	M.S., M.S.D., PD certificate
Psychology, General	BH	M.A.
Psychology, Clinical	BH	Psy.D., Ph.D.
Radiation Sciences	AH	B.S. (on campus and online), M.S.R.S. (online)
Radiation Therapy Technology	AH	Certificate
Radiologist Assistant	AH	M.S.R.S. (online)
Rehabilitation Science	AH	M.S.R., Ph.D.
Rehabilitation Technician	AH	Certificate***
Religion and Health	SR	D.Sc.
Religion and Society	SR	M.A.
Respiratory Care	AH	B.S.**, M.S.R.C. (online)
Respiratory Care, Advanced Practitioner	AH	PP B.S.
School Counseling	BH	PM certificate, PPS credential
Social Policy and Social Research	BH	Ph.D.
Social Work	BH	M.S.W.
Special Imaging: CT and MRI	AH	Certificate

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 (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 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
Website: <http://www.wascweb.org>
E-mail: <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 Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics
- Accreditation Council for Occupational Therapy Education (ACOTE)
- Accreditation Council for Pharmacy Education (ACPE)
- Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA)
- American Registry of Radiologic Technology (ARRT)
- 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)
- Committee composed of the American Society of Cytopathology (ASC), College of American Pathologists (CAP), American Society for Clinical Pathology (ASCP), and American Society of Cytotechnology (ASCT), in collaboration with the Commission on Accreditation of Allied Health Education Programs (CAAHEP)
- Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA)
- Council on Accreditation (COA) of Nurse Anesthesia Educational Programs
- Council on Education for Public Health (CEPH)
- Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS), 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 Council on Medical Education of the American Medical Association (AMA)
- National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
- National Commission on Orthotic and Prosthetic Education (NCOPE), in collaboration with the Commission on Accreditation of Allied Health Education Programs (CAAHEP)

The following organizations approve specific University schools or programs:

- 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 Department of Public Health (CDPH) Laboratory Field Services (LFS)
- California Department of Public Health (CDPH) Radiologic Health Branch (RHB)
- California Board of Registered Nursing (BRN)
- Commission on Teacher Credentialing (CTC)

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
BH	Behavioral Health
SD	Dentistry
SM	Medicine
SN	Nursing
SP	Pharmacy
PH	Public Health
SR	Religion

2014

January

6	U	Winter Quarter begins
6	SD	Winter Quarter (DDS, IDP, DH) begins
12	SD	Clinic with a Heart (projected)
13-15	SD	Clinical Board Qualifying Examination
13-17	U	Week of Renewal
17	SM	First-, Second-year Summer/Autumn Quarter ends
20	SM	First-, Second-year Winter/Spring Quarter begins
21	U	Martin Luther King, Jr. holiday
21	SD	Winter Quarter last day to withdraw without record on transcript

February

3-5	SD	Winter midterm examinations
6-9	SD	54th Annual Alumni-Student Convention—Centennial Complex
7	SD	Student dedication service
14	SM	First-year family day and dedication service
17	U	President's Day holiday

March

3-April 1	SD	Dental Hygiene National Board Examination
3	SD	Winter Quarter last day to withdraw without a W grade or change units
3-24	SD	Spring Quarter registration for D1/D2/D3/DH/IDP; web registration closes April 7
7-10	SM	Alumni Postgraduate Convention
17-20	SD	Winter Quarter final examinations
17-21	SP	Final examinations
20	SD	Predoctoral and Dental Hygiene Winter Quarter ends
21	U	Winter Quarter ends
21	SD	Advanced Dental Education didactic Winter Quarter ends
21	SD	Faculty advance seminar
21	SM	Fourth-year Match Day
21-25	SD	Western Regional Examination Board
24	SD	Spring Quarter last day for financial clearance without a late fee
25	SD	Spring Quarter late registration ($50 late fee assessed) for DDS/DH/IDP students only
25	SD	Grades due from faculty
25-April 3	SD	Spring Quarter late registration ($50 late fee assessed) for D4 students only
21-30	U	Spring Quarter recess
21-30	SD	Predoctoral and Dental Hygiene Winter Quarter recess
28	SD	Advanced Dental Education clinical Winter Quarter ends
31	SD	D3 Restorative simulated board examination (projected)
31	SD	IDP students oreintation
31	SD	Spring Quarter (DDS, IDP, DH) begins
31	U	Spring Quarter begins

April

7-11	U	Week of Renewal
7-23	PH	National Public Health Week
9	SD	Spring Quarter last day to withdraw without record on transcript for D4 students only
11	SD	D3 Restorative simulated board examination
11	SD	D2 spring Restorative OSCE
12-14	PH	Pine Springs faculty/student retreat
14	U	Last day to drop without a "W"
15	U	Winter graduation list due to be submitted to University Records
18, 25, May 2, 9, 16	SD	D2 OSCE
17	SP	Honors and awards banquet
28-30	SD	Spring midterm examinations

May

1	U	Last day for schools to submit graduation petitions for Autumn Quarter graduates to University Records
7	PH	Awards chapel
7	U	University Faculty Council
12	SD	Spring Quarter last day to withdraw with a W grade for D4 students only
14	SD	D4 graduation banquet
14	SP	School of Pharmacy chapel
21	SD	IDP graduation banquet, Wong Kerlee International Conference Center
22	SP	Senior banquet
22	SD	Grades due from faculty for D4 students
23	SD	Awards chapel—Damazo Amphitheater, Centennial Complex (11:00 a.m.)
23	SD	Dental Hygiene pinning service—Campus Hill Church (6:00 p.m.)
23	SP	Hooding ceremony
23	SM	Consecration and hooding ceremony

24	SM, SP, SD	Baccalaureate services
25	SM, SP, SD	Conferring of degrees
26	U	Memorial Day holiday
27	SD	Spring Quarter last day to withdraw without record on transcript—DDS/DH/IDP students
27	U	Last day to withdraw (standard quarter courses); summer registration open
27-July 7	U	Summer Quarter registration; web registration closes July 8
30	SM	Second-year Winter/Spring Quarter ends

June

2-July 6	SD	National Board Dental Examination, Part 1
4	U	University Faculty Council
9-12	SD	Spring Quarter final examinations
9-12	SM	First-year Winter/Spring Quarter ends
9-13	SP	Final examinations
12	SD	Spring Quarter (DDS, IDP, DH) ends
12	PH	Graduation rehearsal dinner
12	SD	Predoctoral and Dental Hygiene Spring Quarter ends
12	AH	Nutrition and Dietetics pinning ceremony
13	BH	Town and Gown doctoral hooding ceremony
13	SP	Spring Quarter ends
13	SD	Faculty advance seminar
13	SM	Freshman Winter/Spring Quarter ends
13	SD	D2 National Board Qualifying Examination (required)
13	SD	Advanced Dental Education didactic Spring Quarter ends
13	U	Spring Quarter ends
13	AH, BH, SN, PH	Focus on Graduates vespers service
13-17	SD	Predoctoral and Dental Hygiene summer recess
13-17	SD	WREB for DDS students
13-July 6	PH	Doctoral candidates hooding ceremony
13-July 6	SD	National Board Examination, Part I
14	SD	Advanced Dental Education didactic Spring Quarter ends
14	AH, BH, SN, PH	Baccalaureate service
15	AH, BH, SN, PH	Conferring of degrees
16	SM	Third-year Winter/Spring Quarter ends
16-20	SM	Third-year orientation
17	SD	Grades due from faculty
17	SM	Fourth-year orientation; Summer/Autumn Quarter begins
16-July 4	SD	National Dental Board Examination, Part 1 (projected)
20-24	SD	Western Regional Examination Board (DH)
23	U	Summer Quarter begins
23	SM	Third-year Summer/Autumn Quarter begins
23-July 3	SD	Advanced Dental Education orientation and instruction begins
23-July 3	SD	Predoctoral and Dental Hygiene didactic remediation session
30	SD	Advanced Dental Education clinical Spring Quarter ends
30	SD	School of Dentistry instruction begins, except as indicated on calendar

July

1	SD	Advanced Dental Education orientation and instruction begins
4	U	Independence Day holiday
7	U	Last day to drop without a "W"
7	U	Last day to register with a late fee
8	U	Spring Quarter graduation list due at University Records
12-13	SD	Dental Hygiene California Board Examination (UCSF-July 25-27)
13	SD	Minorities in Dentistry workshop
13-16	SD	Careers in Dentistry workshop
29	U	1st 5-week summer session ends
30	U	2nd 5-week summer session ends
31	SD	D4 simulated board examination

August

1	U	Last day for students to submit graduation petitions to schools for Winter Quarter graduates
7-8	SM	First-year orientation
11	SM	First-year Summer/Autumn Quarter begins
18	U	Last day to withdraw (standard quarter courses)
25	U	Autumn Quarter registration open (standard quarter courses)
25	SM	Second-year orientation, Summer/Autumn Quarter begins
25-Sept. 17	SD	Autumn presession for D1 and Biomedical Sciences begins

September

1	U	Labor Day holiday
1	U	Last day for school to submit graduation petitions for Winter Quarter graduates to University
8	U	2nd 5-week summer session ends
10	U	Summer grades due (4:00 p.m.)
8-11	SD	Summer final examinations
11	SD	Predoctoral and Dental Hygiene Summer Quarter ends
12	SD	Faculty advance seminar
12	SD	Advanced Dental Education didactic Summer Quarter Ends
12	SD	Advanced Dental Education in Orthodontics and Endodontics program ends (2nd year only)
12-21	SD	Predoctoral and Dental Hygiene Summer Quarter recess

15-19	SP	Orientation week
18	U	University Autumn Quarter faculty colloquium
19	SD	Advanced Dental Education clinical Summer Quarter ends
22	SD	School of Dentistry instruction begins
22	SP	Autumn Quarter begins
22	U	University-wide orientation/Welcome back bash
24	SP	Chapel
26-28	SM	Pine Springs Ranch faculty/student retreat
29	U	Last day to register with late fee
30	U	Summer graduation list due for submission to University Records

October

1	U	Last day for schools to submit academic variances (Spring and Summer quarter graduates) to University Records
6	U	Last day to drop without a "W"
6-10	U	Week of Renewal
15-16	SD	D3 Restorative simulated board examination

November

3-5	SD	D4 Restorative simulated board examination
26-30	U	Thanksgiving recess
26-30	SM	First-, Second-year Thanksgiving recess
27-Jan. 4	SD	National Dental Board Examinations, Part II
28	SM	Fourth-year Summer/Autumn Quarter ends

December

1	SM	Fourth-year Winter/Spring Quarter begins
8-11	SD	Autumn Quarter final examinations
11	SD	Predoctoral and Dental Hygiene Autumn Quarter ends
12	SD	Advanced Dental Education didactic Autumn Quarter ends
12	SD	Faculty advance seminar
12	SM	Third-year Summer/Autumn Quarter ends
13-Jan. 4	SD	Predoctoral and Dental Hygiene Autumn Quarter recess
13-Jan. 4	SM	Fourth-year Christmas recess
15	SM	Third-year Winter/Spring Quarter begins
20-Jan. 4	SM	First-, Second-, Third-year Christmas recess
26	SD	Advanced Dental Education clinical Autumn Quarter ends

2015

January

5	SD	Winter Quarter instruction begins
11	SD	Clinic with a Heart
12-16	U	Week of Renewal
16	SM	First-, Second-year Summer/Autumn Quarter ends
19	U	Martin Luther King, Jr. holiday
19	SM	First-, Second-year Winter/Spring Quarter begins

February

5-8	SD	55th Annual Alumni-Student Convention, Centennial Complex
6	SD	Student dedication service
13	SM	First-year family day and dedication service
16	U	President's Day holiday

March

6-9	SM	Alumni Postgraduate Convention
2-31	SD	Dental Hygiene National Board Examination
16-19	SD	Winter Quarter final examinations
19	SD	Predoctoral and Dental Hygiene Winter Quarter ends
20	SD	Faculty advance seminar
20	SD	Advanced Dental Education didactic Winter Quarter ends
20	SM	Fourth-year Match Day
20-29	SD	Predoctoral and Dental Hygiene Winter Quarter recess
27	SD	Advanced Dental Education clinical Winter Quarter ends
30	SD	Spring Quarter instruction begins
30	SD	D3 Restorative simulated board examination

April

10	SD	D2 spring Restorative OSCE
24, May 1, 8, 15, 18	SD	D2 OSCE

May

13	SD	D4 graduation banquet
20	SD	IDP graduation banquet—Wong Kerlee International Conference Center
22	SD	Awards ceremony- Damazo Amphitheater, Centennial Complex
22	SD	Dental Hygiene pinning service, 6:00 p.m., Campus Hill Church
22	SM	Consecration and hooding ceremony
23	SM, SP, SD	Baccalaureate services
24	SM, SP, SD	Conferring of degrees
29	SM	Second-year Winter/Spring Quarter ends

June

8-11	SD	Spring Quarter final examinations
11	SD	Predoctoral and Dental Hygiene Spring Quarter ends
12-July 5	SD	National Board Dental Examinations, Part I
12-July 5	SD	Predoctoral and Dental Hygiene summer recess

12	SD	D2 National Board Qualifying Examination (required)
12	SD	Advanced Dental Education didactic Spring Quarter ends
12	SD	Faculty advance seminar
12, 14, 15, 16	SD	Western Regional Board Examination (DDS)
19, 21, 23, 24	SD	Western Regional Board Examination (DH)

July

11-12	SD	Dental Hygiene California Clinical Board (USC) (USCF July 25-26)
12	SM	First-year Winter/Spring Quarter ends
22	SM	Thrid-year Winter/Spring Quarter ends

About the University

University foundation

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, Behavioral Health, Dentistry, Pharmacy, Public Health, 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 which includes 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 (May 2013) indicate that the core of the combined faculties consists of 1,577 full-time teachers. Part-time and voluntary teachers (1,403—largely clinicians in the professional curricula) bring the total to 2,980. As of Autumn Quarter 2013, 753 students from 96 countries outside the United States are represented in the enrollment of 4,729.

A century of service

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

- six medical facilities, licensed for approximately 1076 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 and Surgical Hospital (LLUHSH), 2009;
  - Loma Linda University Behavioral Medicine Center (LLUBMC)—an acute psychiatric care facility—1991;
  - Loma Linda University Medical Center-Murrieta, 2011.
- ten Loma Linda University Health (LLUH) institutes, two LLUH-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, Behavioral Health, Dentistry, Medicine, Nursing, Pharmacy, Public Health, and Religion; 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
2012	School of Science and Technology closed
2012	School of Behavioral Health

Vision and Mission

Vision

Transforming lives through education, healthcare and research

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 of Loma Linda University

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.

Institutional Learning Outcomes

Loma Linda University's institutional learning outcomes (ILOs) for students are assessed throughout the degree programs within the University appropriate for the discipline and degree. The Office of Educational Effectiveness works with these programs to guide their

assessment. For more in-depth information about LLU's ILO assessment, please see: http://www.llu.edu/central/assessment

- **Critical thinking:** Students demonstrate critical thinking through examination of ideas and evidence before formulating an opinion or conclusion.
- **Information literacy**: Students demonstrate the ability to identify, locate, evaluate, utilize, and share information.
- **Oral communication**: Students demonstrate effective oral communication skills in English.
- **Quantitative reasoning**: Students demonstrate the ability to reason and develop evidence-based decisions using numerical information.
- **Written communication**: Students demonstrate effective written communication skills in English.

Mission-focused learning outcomes

Loma Linda University's three mission-focused learning outcomes (MFLOs) are firmly rooted in its mission, vision, and values (p. 19). Because mission-focused learning is LLU's culture, this academic year (2014-2015) the University is developing specialized assessment processes to ensure integration of these outcomes over time.

- **Wholeness**: Students apply the University's philosophy of wholeness into their personal and professional lives. Wholeness involves all aspects of one's existence unified through a loving relationship with God, resulting in inner rest that is expressed by: integrating mind/body/spirit, strengthening relationships, caring for creation, and healing the nations.
- **Wellness**: Students facilitate healthy lifestyles in self and others.
- **Values**: Students integrate LLU's Christ-centered values in their personal and professional lives.

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."

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 or 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.

University at Worship services

In keeping with the commitment of our mission, Loma Linda University students have special requirements, such as University at Worship attendance each Wednesday morning in the University Church. These 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 directed by the Global Health Institute (GHI). SIMS embodies the University's legacy and ongoing commitment to global service by providing inspiring and life-changing international service opportunities for students while simultaneously delivering much-needed assistance to disadvantaged global communities. In addition to coordinating several group trips each year to under-served areas in Africa, Asia, and Central and South America, SIMS also assists individual students with service-learning placements, mission electives, and international rotations at approximately forty partner mission hospitals and clinics 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 website at <lluglobal.com/sims (http://www.lluglobal.com/sims)>, or visiting the SIMS office at 24880 Prospect 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, dental, and behavioral health 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 <www.sachealthsystem.org (http://www.sachealthsystem.org)>.

Community-Academic Partners in Service (CAPS)

The mission of Community-Academic Partners in Service (CAPS) is to connect the passion for service and academics of Loma Linda University students, faculty, and staff with the local community in mutually beneficial and sustainable ways. 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. The CAPS office offers both short-term and long-term volunteering opportunities throughout the year.

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 2013, the Library had a total collection of 386,984 books and bound journals; 211,469 print and electronic books; and 8,206 currently received print and electronic journal titles.

For more detailed statistical information, consult the Library's Web site at <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 (http://catalog.llu.edu) provides access to all campus library collections. In addition to the collections of the Del E. Webb Memorial Library, 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 (http://csul.iii.com), 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 (http://www.llu.edu/library/speccolls/white.page) 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.

LLUH (Loma Linda University Health) institutes

- Loma Linda International Heart Institute
- Cancer Center (Institute)
- Transplantation Institute
- Rehabilitation, Orthopaedics, and Neurosciences Institute
- Behavioral Health Institute
- Global Health Institute
- Institute for Community Partnerships
- Institute for Health Policy and Leadership
- Lifestyle Medicine Institute
- Perinatal Institute

LLUH centers

- Center for Christian Bioethics
- Center for Spiritual Life and Wholeness

LLUMC centers

- James M. Slater, M.D., Proton Treatment and Research Center
- Spine Center

LLU centers

- Center for Biodiversity and Conservation Studies (School of Medicine)
- 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)
- Heritage Research Center (School of Religion)
- Neurosurgery Center for Research, Training, and Education (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 prior to applying. Once application is made to this University, the applicant has chosen to abide by these principles and practices.

In selecting students for entrance to programs in the schools, the admissions committees look for evidence of personal integrity, academic achievement, healthful 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.

Many 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.

Applications 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. Application procedures and the application can be found online at <www.llu.edu/apply>.

Application review process

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

Applicant's records

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

Application deferral

Applicants are accepted for a specified entering term. 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 defer 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 (p. 40).

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.

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).

Admission requirements

The following components of the application process are university admission requirements. Additional school and program specific admission requirements may be found in the program-specific pages of this CATALOG.

Online application

- The online application is available at <llu.edu/apply>.
- Application fee
- Statement of purpose

Letters of recommendation

Three letters of recommendation are required. Some programs specify individuals from whom these recommendations should come. For programs requiring specific recommenders, information can be found on the respective program pages of this CATALOG.

Official transcripts

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 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 must be submitted to the University immediately upon completion.

Applicants to undergraduate programs of the University are required to furnish evidence (transcripts, GED, CHSPE, or equivalent) of completion of high school in order to be granted admission. The final transcript must include the date of graduation. Applicants who hold an associate's 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. Applicants expecting an associate's degree to be awarded before matriculation at Loma Linda University must provide documentation (e.g., letter mailed from registrar to the University) showing expected degree completion. Otherwise, evidence of completion of high school will be required for acceptance.

Final transcripts showing the awarding of a bachelor's degree are required for applicants to programs that require a bachelor's degree. If the degree is not yet posted on the transcript the applicant must submit documentation (e.g., letter mailed from registrar to the University) verifying completion of bachelor's degree prior to matriculation. Subsequent enrollment is contingent upon the previous submission of all official final transcripts.

Applicants who have attended international schools are required to submit official transcripts (mark sheets) in the original language, which convey the grades and credits earned in each subject; and an English translation of their transcripts, if not already in English.

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 specified 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.

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. 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 <http://www.ets.org/toefl> for the most up-to-date information and examination registration.

Pre-entrance requirements

Some programs require official pre-entrance examination results. Specific instructions are available online.

Health care

Operating under the Loma Linda University Center for Health Promotion, Student Health Service is committed to providing quality health care to the students within our University community. Our physicians and staff are dedicated to promoting a lifestyle that encourages a balance of physical, spiritual, emotional, and social well being.

For needs that arise while a student is enrolled at Loma Linda University, Student Health Service is the primary source of care. Potential students will need to care for any routine medical and dental care and/or elective surgery needs prior to arriving on campus.

Pre-entrance health requirements

Prior to enrolling in classes, newly admitted students must fulfill specific health requirements as outlined on the New Student Portal. Loma Linda University is committed to protecting the health of our students, the University community, and our patient population. These health requirements not only promote health, but also accustom new students to the responsibilities of a health-care professional. A completed pre-entrance health requirements form (available on the web at http://www.llu.edu/central/studenthealth/new-students.page?), with all the necessary documentation, should be submitted at least three weeks prior to the beginning of registration in order to register or attend classes.

- MMR (measles, mumps, rubella): Documentation of two MMR vaccinations given after 1956, or submit positive blood titer reports for each disease (must be quantitative IgG antibody titers)
- TB/PPD skin test: Documentation of a negative skin test within six months prior to starting a program and/or classes, or provide *all* of the following:
  a. Date of the most recent positive PPD and results in mm
  b. Attached to documentation, a copy of a chest x-ray report taken within the past year
  c. Completed signs and symptoms form, available at <llu.edu/central/studenthealth>
- Tdap (tetanus, diphtheria, pertussis): A one-time dose of Tdap after age 18 *and* Td (tetanus/diptheria) booster shot (within ten years after Tdap)
- Varicella (chickenpox): Documentation of complete series (two immunizations required), or submit a positive blood titer report (must be quantitative varicella IgG antibody)
- Hepatitis B: Documentation of a complete series (three immunizations required), or submit positive blood titer report (must be quantitative hepatitis B surface antibody)

For further information, visit the Student Health Service Web site at <llu.edu/central/studenthealth> or contact Student Health Service at 909/558-8770. For additional information on the communicable diseases policy, consult the *Student Handbook*, University Policies: Communicable disease transmission-prevention policy.

Background check

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

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 all official postsecondary transcripts (or mark sheets) and degree certificates, official evaluations of non-U.S. course work, and English proficiency and admission examination requirements, as detailed below.

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 obtaining student visas, which includes providing evidence of their financial ability to meet estimated living expenses and all financial obligations to the University that will occur during their program. For questions, please contact International Student and Scholar Services at 909/558-4955.

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> 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 the Loma Linda University Financial Aid office and speak with a financial aid 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 fewer 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 fewer per week) during school breaks and summer vacations (if a student's program allows summer quarters off). For questions, please call 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-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 and internships). Degree-earning students are subject to study load requirements and are allowed limited on-campus employment.

The I-20 is issued after a student:

- has been accepted into a program and all official transcripts (mark sheets) have been received by the University,
- has paid the advance deposit, and
- 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 approved Exchange Visitor Program under the U.S. Department of State. This J-visa exchange program is authorized to sponsor/host degree-earning students, nondegree (continuing education) students, student interns, 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 either be 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 call 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, and Nursing. 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 that 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.

Course requirements

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, and 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.

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.

LLU courses

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

CMSD 217	Beginning Sign Language	3
DNHY 408	Professional Ethics	2
DNHY 409	Jurisprudence and Practice Management	2
Religion		
RELE 400	Current Issues in Religion and Society	1-4
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
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 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
EPDM 414	Introduction to Epidemiology	3
STAT 414	Introduction to Biostatistics I	3
STAT 415	Computer Applications in Biostatistics	1
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
ANTH 306	Language and Culture	4
ANTH 315	Cultural Anthropology	4
ANTH 448	Medical Anthropology	4
DNHY 414	Personal Finance	2
ENVH 422	Principles of Geographic Information Systems	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 177	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	3
AHCJ 464	Group Process and Dynamics	3
AHCJ 465	Seminars in Leadership	2
AHCJ 499	Directed Study	1-4
ENGL 300	Writing Seminar 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
PEAC 110	Independent Activities	0.5,1
PEAC 128	Recreation Swimming	1

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> 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."

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.This full-service facility serves to promote health and wellness to Loma Linda University students, staff, faculty, and the surrounding community.

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. to 5 p.m.; Friday, 8 a.m. to 1 p.m. Services are free to students who are signed up for Risk Management insurance.

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 be 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.
- LLUH 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 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 is shouldered by the plan 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 909/558-9534 or campus extension 39534. Full-time students receive up to nine free visits.

The University Student Counseling Center is located at the Behavioral Health Institute, 1686 Barton Road, Redlands, CA 92373.

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 Monday through Wednesday, 8 a.m. to 5 p.m., by calling on-campus extension 66050 or 909/558-6050; Thursday, 8 a.m. to 7 p.m.; Friday, 8 a.m. to 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, in Loma Linda.

Loma Linda University Student Health Service

Loma Linda University Student Health Service 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 Evans Hall, Suite 111. The hours of operation are Monday through Thursday, 8 a.m. to 12 noon., 1 p.m. to 5 p.m.; Friday, 8 a.m. to 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 of the school in which they are enrolled.

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 fewer 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 fewer 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 that 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.

Academic residence

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

Academic standing

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

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 of the school in which the student is enrolled 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.

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.

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.

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.

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 campus is authorized under FERPA to release directory information concerning students. The University has classified the following as student directory information that 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 be released only by the academic dean's office of the school in which the student is enrolled. Requests for directory

information received by other offices of the University will be transferred to the appropriate school office.

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.*

Transcripts

The University provides Loma Linda University 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.

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 when course work was attempted, but when minimum performance was not met.
FA/UA	0.0	Failure to attend (U/A for S/U graded courses)—given when a student discontinues attendance without withdrawing. Last date attended is to be noted on instructor grade report.
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 in which the student is enrolled. 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		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. 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. 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 20 percent of the course is completed. A student may withdraw only once from a named cognate course that s/he is failing at the time of withdrawal.
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 http://www.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 I notation 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.

Student level

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]).

Undergraduate students enrolled in nonblock programs are classified based on the transfer credits accepted that fulfill LLU degree requirements at the time of matriculation. Subsequent updates to classifications will include units earned at LLU. Undergraduate classifications are as follows:

0 - 44.9 quarter units	Freshman
45 - 89.9 quarter units	Sophomore
90 - 134.9 quarter units	Junior
135+ quarter units	Senior

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 ("Student Life") on the University Web page at <www.llu.edu/student>.

Academic credit

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.

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.

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.

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 of the school in which the student is enrolled.

Independent study

Independent study may be undertaken subject to the consent of the department chair and/or the office of the dean of the school in which the student is enrolled. The student is responsible for completion of the Directed/Independent Study Title Request (https://myllu.llu.edu/apps/studproc/istr/Start.php) 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 of the school in which the student is enrolled 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.

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. Griggs University (formerly Home Study International) is the officially affiliated correspondence school for Loma Linda University.

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.

Enrollment

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) (http://www.llu.edu/assets/central/ssweb/documents/regchange.pdf) 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 and for living expenses for aid-eligible students or to maintain immigration status for international students.

The primary faculty mentor who is primarily responsible for the student's research is required to sign the load validation form (electronic workflow) verifying that the student will be working on his/her research, thesis, or dissertation for a minimum of 18 hours per week (half-time status) or a minimum of 36 hours per week (full-time status). This is a projection each quarter. The faculty mentor before signing the load validation form for the current quarter must determine that the student indeed qualified for load validation in the previous quarter.

Attendance

Regular attendance at all appointments (class, clinic, laboratory, University at Worship) is required beginning with the first day of each term. A pattern of absence, excused and/or 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.

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).

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, with the intent to return. The appropriate program withdrawal form (https://myllu.llu.edu/

apps/studproc/pw/Start.php) is an online workflow. This form is to be 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 of the school in which s/he is enrolled 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 an Add/Drop Registration form (http://www.llu.edu/assets/central/ssweb/documents/regchange.pdf). 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 (https://myllu.llu.edu/apps/studproc/pw/Start.php) which is a workflow available on the University Web site. The Change of Program form or the Add/Drop Registration 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.

Satisfactory academic progress

For the purposes of financial aid eligibility, federal regulations governing Title IV HEA program funds require the University to establish a standard of satisfactory academic progress (SAP), and to monitor students' progress toward completion of a degree or certificate. Information relevant to the University's SAP standard is provided below.

Students' academic progress is evaluated at least once annually. For students in programs that are less than one academic year in length, academic progress is evaluated at the end of each enrollment period.

Failure to meet the University's satisfactory academic progress (SAP) standard requirements may result in financial aid suspension. Financial aid will be reinstated only after eligibility is re-established.

The satisfactory academic progress requirements below apply to all University students and are consistently applied, whether or not a student is receiving financial aid.

Evaluation measures

Satisfactory academic progress is evaluated based on three measures: qualitative, quantitative, and maximum time frame.

Qualitative. The qualitative measure specifies the grade point average (G.P.A.) that must be achieved at each evaluation. If the G.P.A. is not an appropriate qualitative measure, a comparable assessment measured against a norm will be used. Calculation of the G.P.A. does not include incompletes (I), withdrawals (W), or transfer courses; however, courses repeated for additional credit (such as seminars and research) will be included. Courses repeated for a better grade will include only the most recent grade in the G.P.A. calculation.

Quantitative. The quantitative measure specifies the pace at which a student should progress through his/her educational program in order to successfully complete a sufficient number of units at a rate that ensures program completion within the maximum time frame. The pace at which a student is progressing is calculated by dividing the cumulative number of units the student has successfully completed by the cumulative number of units the student has attempted. Units (credit hours) transferred from another institution that are accepted toward the student's educational program will be counted as both attempted and completed units.

Maximum time frame. The maximum time frame for an undergraduate program measured in units cannot exceed a period longer than 150 percent of the published length of the program. The maximum time for completion of a master's degree is five years; the maximum time for completion of a doctoral degree is seven years. Calculation of the time frame begins with the term in which the first LLU course applicable toward a degree or certificate is taken.

Program requirements

Undergraduate programs. Undergraduate students must maintain a cumulative G.P.A. of at least 2.0. They must also maintain a cumulative completion rate equal to or exceeding two-thirds (67 percent) of the units attempted. Maximum time for completion of an undergraduate program is a period no longer than 150 percent of the published length of the academic program, as measured in credit hours or in clock hours required and expressed in calendar time.

Graduate programs. Graduate students must maintain a cumulative G.P.A. of at least 3.0. They must also maintain a cumulative completion rate equal to or greater than two-thirds (67 percent) of the units attempted. For programs with a limited or no research component, the number of units per term needed to complete the program on time will be determined by dividing the total number of units required for completion by the length of the program—expressed in academic quarters (e.g., five years for a master's degree equals twenty academic quarters, etc.). Research-intensive programs will provide information regarding the number of units that must be completed by the midpoint and three-quarters point of the program. Maximum time for completion of a master's degree is five years; maximum time for completion of a doctoral degree is seven years—except in the case of block programs.

Professional practice doctorates. All professional practice doctoral degrees (D.P.T., Pharm.D., D.D.S., M.D.) are block programs requiring students to enroll full time. See specific programs below for SAP policy information.

Doctor of Physical Therapy (entry-level D.P.T.). Students must maintain a cumulative G.P.A. of 3.0—with no grade less than C (2.0) in any required course—and must demonstrate satisfactory clinical performance. In addition, they must receive a grade of B or better in AHCJ 510 Human Gross Anatomy (taken during the first quarter of the program). Students must maintain a cumulative completion rate equal to or greater than two-thirds (67 percent) of the units attempted. Students are expected to complete the program in three years; however, if a leave of absence

becomes necessary, the maximum allowable time to degree completion is seven years.

Doctor of Pharmacy (Pharm.D.). The G.P.A. required for graduation is 2.30. Students must maintain a cumulative completion rate equal to or exceeding two-thirds (67 percent) of the units attempted. In addition, students must hold a valid, nonprobationary intern pharmacist license. Six years is the maximum time allowed to degree completion, which is also the maximum time intern pharmacist licensure is granted by the California State Board of Pharmacy.

Doctor of Dental Surgery (D.D.S.). Students must maintain a cumulative G.P.A. of 2.0. They must also maintain a cumulative completion rate equal to or exceeding two-thirds (67 percent) of the units attempted. Students are expected to complete the program in four years; however, the maximum allowable time to degree completion is six years.

Doctor of Medicine (M.D.). In order to progress to the next academic year, students must not receive a U (Unsatisfactory) grade in any course. They must also maintain a cumulative completion rate equal to or exceeding two-thirds (67 percent) of the units attempted. Although students are expected to complete the program in four years, they are allowed to complete the first two years (basic sciences) within three years before progressing to the clinical years (third and fourth years of the program). The two clinical years must be completed within three years.

Loss of eligibility for financial aid

On the basis of the SAP evaluation, Title IV HEA program funds may be suspended for any of the following reasons:

- Student fails to achieve the required G.P.A.
- Student is not successfully completing his/her education program at the required pace.
- Student is unable to complete the program within the allotted time frame.

The student is suspended from federal financial aid eligibility only and may not receive additional financial aid funds. However, s/he may continue enrollment at this University either without any financial assistance or, if eligible, with the assistance of private loans. The Financial Aid Office can supply the student with additional information regarding these loans.

Suspension letter

A student who fails to meet the University's satisfactory academic progress standard will be informed in writing by the Financial Aid Office that financial aid has been suspended until such time as the student is again in compliance with SAP guidelines. The letter will include instructions regarding the appeal process.

Appeal process

Students may appeal loss of eligibility for financial aid. Instructions for submitting a Satisfactory Academic Progress Appeal are available on the Web for students wishing to have their aid reinstated. The appeal must be filed by the deadline specified in the letter of suspension, even if the student believes an error has been made in his/her case. The completed appeal must be submitted to the director of financial aid, who will present it to the Financial Aid Appeals Committee. The Financial Aid Office will notify the student in writing within five business days following the decision by the appeals committee.

The student is required to submit his/her appeal in writing. The appeal must include the following information:

- A full explanation of the circumstances that led to his/her inability to meet the minimum progress requirements.
- Supporting documentation verifying the circumstances.
- A personalized academic plan. With the assistance of his/her academic advisor, the student is expected to explore options available to eliminate the deficiencies; as well as to develop a realistic term-by-term listing of specific courses to be taken towards graduation; and noncourse requirements to be completed (e.g., advancement to candidacy, qualifying examinations, dissertation defense, etc.). This plan is designed to ensure that the student will be able to meet the satisfactory academic progress standard by a specified point in time. The academic plan is signed by the academic advisor, department chair, and school academic dean.

If the appeal is approved, the student will be expected to adhere to the units and courses specified in the academic plan portion of the appeal. The academic plan will be closely monitored by the Financial Aid Office staff. Failure to follow the courses and units outlined may constitute the basis for future denial of financial aid.

The progress of students on an academic plan will be reviewed at the end of one payment period, and then according to the academic plan; but not less frequently than the rest of the institution's population.

Financial aid eligibility reinstatement

A student who has failed to make satisfactory progress but who has appealed financial aid suspension and has had eligibility for aid reinstated is placed on financial aid probation. Clear financial aid eligibility will be regained when s/he is again in compliance with the satisfactory academic progress standard.

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>.

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 of the school in which the student is enrolled 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>).

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 circumstance. 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 (five units for School of Allied Health Professions) 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 refund policy.
5. LLU HEALTH 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.

Other fees

Late registration fee—1st week	$100
Late registration fee—2nd week	$200
Late payment fee (term)	$100
Returned check fee	$25
Lost 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 prior to registration, will be charged a 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 refund percentages and dates attached to individual courses).

Monthly statement

The amount of the monthly statement is due and payable in full upon presentation or notification of statement availability. 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 administrator 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 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.

Account charges

Students who are currently enrolled on campus in a degree or certificate program are allowed to charge items and services to their accounts. Campus services that permit student account charges include the Campus Store, Student Affairs, the food service locations on campus, and other providers.

Payments

Bankcard, ACH, check, wire transfer, International to US funds conversion, 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, a $25 returned item fee will be 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. (LLU HEALTH employees may present their employee ID cards in lieu of student ID.)

Account withdrawals

Students who have credit balances on their accounts after all University charges are covered may request a withdrawal of these funds. Each account withdrawal must be requested by the student. Withdrawals will be processed as checks or direct deposits; no cash withdrawals or automatic account withdrawal services are available.

Student withdrawal requests made in person at the Student Finance cashier's window, by fax during office hours, or online before midnight on Tuesday of each week will be processed on Thursday of that week. Students may also request rush withdrawal processing for next business day service. A $20 processing fee is charged.

Checks will be available for pickup after 11:00 a.m. at the Student Finance cashier's window each business day, or they can be mailed.

Direct deposit authorization and online account withdrawals can be initiated by logging in on <ssweb.llu.edu/llu/twbkwbis.P_WWWLogin> and going to the Student Finance menu. If direct deposit funds are returned to the University due to the entry of inaccurate bank account information, a fee will be charged. Direct deposits may take two days or more after processing to appear in bank accounts. It is the student's responsibility to verify the receipt and availability of direct deposit funds before initiating any transactions.

Students are cautioned to budget the use of withdrawn funds carefully because additional funds may be needed to cover education and living expenses for current and/or future terms. The Financial Aid Office should be contacted with questions about student budgeting and the use of funds available for withdrawal.

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 be prepared to provide an advance deposit and 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 final quarter's tuition and fees. 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.

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 an on-campus certificate or degree program may be covered by the Student Health Plan provisions. Nondegree students taking more than four units (five units for School of Allied Health Professions) may also be covered by the plan. Please view student registration portal for notice of coverage. 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 four 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 2014-2015 academic year (Summer Quarter through Spring Quarter), the student must complete a FAFSA. FAFSA applications are available online at <fafsa.ed.gov (http://www.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 (http://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.

School of Allied Health Professions

Dean's Welcome

We are excited that you are interested in our school! We believe that coming to Loma Linda University and the School of Allied Health Professions is more than a professional educational experience; it is a spiritual journey of self-reflection and personal growth. In addition to the exceptional professional education and training you will receive here, we offer an environment that focuses on service and mission; that fosters and nurtures spiritual development and an emphasis on service, whether in our local or international community.

Our programs attract students from diverse cultural and educational backgrounds and from 40 countries around the world. With more than 1,300 clinical affiliations throughout the United States, we offer a wide variety of experience options designed to develop a well-rounded, caring, and compassionate health-care professional.

In the School of Allied Health Professions, we are committed to your professional education and personal and spiritual development; and we believe this is what sets us apart.

Craig R. Jackson, J.D., M.S.W.
Dean, School of Allied Health Professions

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; physical therapist assistant, 1989; emergency medical care, 1993; 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; health professions education, 2010. 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 school wide.

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, the school seeks 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 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 continues 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.

Associate in Science degree program students complete 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. Submit an online application available at <llu.edu/central/apply>, accompanied by the $60 application fee.
2. Submit supporting documents required by the University.
3. Upon receipt of the notice of acceptance, return the required deposit and the card provided to confirm acceptance.

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 G.P.A. 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 G.P.A. 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, G.P.A.s 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.

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

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 makeup 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 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.

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
3.0	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, 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 to 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

Additional requirements

For additional policies governing Loma Linda University students, see general policies of the University (p. 36), 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.

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

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 (2014-2015)

(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	Per Unit
1	24	$15,624	$651

Health Care Administration—Bachelor of Science

Year	Units	Tuition	Per Unit
1	61	$25,742	$422

Health Professions Education—Master of Science—Units Vary (Online and Face-to-Face)

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

Year	Units	Tuition	Per Unit
Multi Year	48	$32,880	$685

Health Professions Education—Certificate—Units Vary (Online and Face-to-Face)

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

Year	Units	Tuition	Per Unit
Multi Year	27	$18,495	$685

Cardiopulmonary Science

Respiratory Care—Bachelor of Science

Year	Units	Tuition	Per Unit
1	53	$29,415	$555
2	59	$32,745	$555

Emergency Medical Care—Bachelor of Science

Year	Units	Tuition	Per Unit
1	42	$23,310	$555
2	41	$22,755	$555

Respiratory Care—Bachelor of Science (Advanced Practitioner)

Year	Units	Tuition	Per Unit
New	48	$26,640	$555
Cont	12	$6,660	$555

Respiratory Care—Certificate

Year	Units	Tuition	Per Unit
1	45	$24,975	$555
2	36	$19,980	$555

Cardiac Electrophysiology—Certificate

Year	Units	Tuition	Per Unit
1	Units vary	Varies	$416
2	Units vary	Varies	$416

Cardiac Electrophysiology—Associate in Science

Year	Units	Tuition	Per Unit
1	Units vary	Varies	$416
2	Units vary	Varies	$416

Respiratory Care—Master of Science Respiratory Care

Year	Units	Tuition	Per Unit
1	43	$29,756	$692
2	15	$10,380	$692

Polysomnography—Certificate

Year	Units	Tuition	Per Unit
1	36	$14,976	$416

Clinical Laboratory Science

Cytotechnology—Bachelor of Science

Year	Units	Tuition	Per Unit
1	51	$28,815	$565
2	50	$28,250	$565

Clinical Laboratory Science—Bachelor of Science

Year	Units	Tuition	Per Unit
1	63	$35,595	$565
2	63	$35,595	$565

Phlebotomy—Certificate

Year	Units	Tuition	Per Unit
1	5	$2,120	$424

Communication Sciences and Disorders

Communication Sciences and Disorders—Bachelor of Science

Year	Units	Tuition	Per Unit
1	47-60	$26,555-$33,900	$565
2	41-70	$23,165-$39,550	$565

Communication Sciences and Disorders—Masters of Science (transitional program)

Year	Units	Tuition	Per Unit
1	45	$31,725	$705
2	34	$23,970	$705
3	23	$16,215	$705

Communication Sciences and Disorders—Masters of Science

Year	Units	Tuition	Per Unit
1	33	$23,265	$705
2	23	$16,215	$705

Health Informatics and Information Management

Health Information Administration—Bachelor of Science

Year	Units	Tuition	Per Unit
1	53	$29,627	$559
2	47	$26,273	$559
Part-time	Units and tuition vary.		$559

Health Information Administration—Certificate

Year	Units	Tuition	Per Unit
Cert	Units may vary depending upon units transferred into Loma Linda University.		$559

Health Informatics—Master of Science

Year	Units	Tuition	Per Unit
1, 2	Units may vary depending upon units transferred into Loma Linda University.		$684

Coding Specialist—Certificate

Year	Units	Tuition	Per Unit
1	10	$2,260	$226
2	16	$3,616	$226
3	6	$1,356	$226

Nutrition and Dietetics

Nutrition and Dietetics—Bachelor of Science

Year	Units	Tuition	Per Unit
1	51	$28,764	$564
2	47	$26,508	$564

Nutrition and Dietetics—BS and MS (coordinated program)

Year	Units	Tuition	Per Unit
1	51	$28,764	$564
2	47	$26,508	$564
3	48	$33,840	$705

Nutrition Care Management—Master of Science

Year	Units	Tuition	Per Unit
1	18	$12,690	$705
2	25	$17,625	$705
3	5	$3,525	$705

Nutrition and Dietetics—Master of Science (DPD track)

Year	Units	Tuition	Per Unit
1	37	$26,085	$705
2	38	$26,790	$705
3	6	$4,230	$705

Nutrition and Dietetics—Master of Science (for those who have an RD)

Year	Units	Tuition	Per Unit
1	48	$33,840	$705

Nutrition and Dietetics—Master of Science (coordinated program for bachelor graduates in non-nutrition areas)

Year	Units	Tuition	Per Unit
1	48	$27,072	$564
2	48	$33,840	$705
3	32	$22,560	$705

Occupational Therapy

Occupational Therapy—Master of Occupational Therapy (entry level)

Year	Units	Tuition	Per Unit
1	61	$42,517	$697
2	4	$32,062	$697
3	30	$20,910	$697

Occupational Therapy—Doctor of Occupational Therapy

Year	Units	Tuition	Per Unit
1	18	$12,546	$697
2	21	$14,637	$697
3	14	$9,758	$697

Physical Therapy

Physical Therapist Assistant—Associate in Science

Year	Units	Tuition	Per Unit
1	57	$22,572	$396
2	6	$2,376	$396

Physical Therapist Assistant—Associate in Science (2-year track)

Year	Units	Tuition	Per Unit
1,2,3	Units may vary.		$396

Physical Therapy—Master of Physical Therapy (postprofessional) and Master of Science in Rehabilitation (postprofessional)

Year	Units	Tuition	Per Unit
1	33	$18,579	$563
2	12	$6,756	$563

Physical Therapy—Doctor of Physical Therapy (Entry Level)

Year	Units	Tuition	Per Unit
1	73	$38,033	$521
2	61	$31,781	$521
3	28	$14,588	$521

Physical Therapy—Doctor of Physical Therapy (postprofessional)

Year	Units	Tuition	Per Unit
1	36	$20,268	$563
2	9	$5,067	$563

Physical Therapy—Doctor of Physical Therapy (postprofessional 65-unit track)

Year	Units	Tuition	Per Unit
1	32	$18,016	$563
2	33	$18,579	$563

Physical Therapy—Doctor of Science (postprofessional)

Year	Units	Tuition	Per Unit
1	30	$16,890	$563
2	39	$21,957	$563
3	12	$6,756	$563
4	3	$1,689	$563

Orthotics and Prosthetics—M.S.O.P (Entry Level)

Year	Units	Tuition	Per Unit
1	52	$27,144	$522
2	64.5	$33,669	$522
3	40.5	$21,141	$522

Orthotics and Prosthetics—M.S.O.P. (postprofessional)

Year	Units	Tuition	Per Unit
1	33	$18,579	$563
2	12	$6,756	$563

Physician Assistant Sciences

Physician Assistant—Master of Physician Assistant

Year	Units	Tuition	Per Unit
1	59	$38,468	$652
2	54	$35,208	$652
3	12	$7,824	$652

Radiation Technology

Medical Radiography—Associate in Science

Year	Units	Tuition	Per Unit
New	37	$15,614	$422
Continuing	23	$9,706	$422

Radiation Sciences—Bachelor of Science

Year	Units	Tuition	Per Unit
1,2	Units may vary depending upon units transferred into Loma Linda University.		

Radiation Therapy—Certificate

Year	Units	Tuition	Per Unit
New	27	$19,386	$718
Continuing	5	$3,590	$718

Diagnostic Medical Sonography—Certificate

Year	Units	Tuition	Per Unit
New	18	$12,924	$718
Continuing 1	18	$12,924	$718
Continuing 2	3	$2,154	$718
New	20	$14,360	$718
Continuing	4	$2,872	$718

Medical Dosimetry—Certificate

Year	Units	Tuition	Per Unit
New (Track A Physics)	29	$20,822	$718
Continuing (Track A)	10	$7,180	$718
New (Track B Rad Therapist)	19	$13,642	$718
Continuing (Track B)	10	$7,180	$718

Nuclear Medicine Technology—Bachelor of Science (non-rad tech background)

Year	Units	Tuition	Per Unit
1	50	$28,250	$565
2	58	$32,770	$565
3	12	$6,780	$565

Nuclear Medicine Technology—Bachelor of Science (rad tech background)

Year	Units	Tuition	Per Unit
1	38	$21,470	$565
2	58	$32,770	$565
3	12	$6,780	$565

Special Imaging Technology: (CT and MRI)—Certificate

Year	Units	Tuition	Per Unit
New	16	$11,488	$718
Continuing	6	$4,308	$718

Special Imaging Technology: Computed Tomography (CT)—Certificate

Year	Units	Tuition	Per Unit
New	10	$7,180	$718

Special Imaging Technology: Magnetic Resonance Imaging (MRI)—Certificate

Year	Units	Tuition	Per Unit
New	6	$4,308	$718
Continuing	6	$4,308	$718

Radiation Sciences—Master of Science in Radiation Sciences

Year	Units	Tuition	Per Unit
1	18	$12,312	$684
2	24	$16,416	$684
3	7	$4,788	$684

Imaging Informatics—Certificate

Year	Units	Tuition	Per Unit
1	18	$7,596	$422
2	6	$2,532	$422

Radiologist Assistant—Master of Science in Radiation Sciences

Year	Units	Tuition	Per Unit
1	38	$25,992	$684
2	30	$20,520	$684

Radiography Advanced Placement—School Certificate

Year	Units	Tuition	Per Unit
Cert	9-13	$3,798 to $5,486	$422

NOTE: Tuition excludes enrollment fee.

Supplies

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

Special tuition charges

$50	CMSD 589 Remediation/Advance Directed Teaching, 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.

$50	Technology Fee for PPMSR and PPDPT (Prior MS) charged in Year 1
$50	Technology Fee for Entry Level DPT, PPDPT (Prior BS in PT) and DSc charged in Year 1 and 2

Special charges

$60	Application
$30	Reapplication
$100	Acceptance depoist, non-refundable (applied on tuition)
$200	Acceptance deposit for CMSD MS and TM, non-refundable
$350	Acceptance deposit for D.P.T. degrees, non-refundable (applied on tuition)
$500	Acceptance deposit for M.P.A. degree, non-refundable (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 give 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

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.

Dean's Award

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

SAHP Endowment Scholarship

The SAHP Endowment Scholarship 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 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, who is in good standing with the department, and who 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 a senior respiratory care student 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 or 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 Scholarship 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 or 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.

Health Informatics and Information Management

Elizabeth M. Guerra Scholarship

The Elizabeth M. Guerra Student Aid Endowment Scholarship is given to a senior student 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, as determined by the faculty of the 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 student 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 student 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 junior students 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 junior students. 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 promise.

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 recognized 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 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 recognized 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 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

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 for Excellence Award 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: advancement of the physician assistant profession, entrepreneurship in invention or learning, noteworthy performance in research, outstanding community service, interest in mentoring patients, and contributions 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.

Departments

- Department of Allied Health Studies (p. 58)
- Department of Cardiopulmonary Sciences (p. 66)
- Department of Clinical Laboratory Sciences (p. 80)
- Department of Communication Sciences and Disorders (p. 89)
- Department of Health Informatics and Information Management (p. 97)
- Department of Nutrition and Dietetics (p. 103)
- Department of Occupational Therapy (p. 112)
- Department of Physical Therapy (p. 116)
- Department of Physician Assistant Sciences (p. 129)
- Department of Radiation Technology (p. 132)

Programs

- Cardiac Electrophysiology — A.S. (p. 66), Certificate (p. 66), Comparison (p. 69)
- Clinical Laboratory Science — B.S. (p. 80)
- Coding Specialist — Certificate (p. 97)
- Communication Sciences and Disorders — B.S. (p. 89), M.S. (p. 91)
- Cytotechnology — B.S. (p. 83), Certificate (p. 83), Comparison (p. 87)
- Diagnostic Medical Sonography — Certificate, Track 1 (p. 132); Certificate, Track 2 (p. 132); Comparison (p. 134)
- Emergency Medical Care — B.S. (p. 69)
- Health Care Administration — B.S. (p. 59)
- Health Informatics — M.S. (p. 98)
- Health Information Administration — B.S., Certificate (p. 99)
- Health Professions Education — M.S. (p. 62), Certificate (p. 62)
- Imaging Informatics — Certificate (p. 134)
- Medical Dosimetry — Certificate, B.S. in Physics Track (p. 135); Certificate, A.S. in Radiation Therapy Track (p. 135); Comparison (p. 137)
- Medical Radiography — A.S. (p. 137) Comparison (p. 140)
- Nuclear Medicine Technology — B.S. (p. 141) Comparison (p. 144)
- Nutrition and Dietetics — B. S (p. 107)., B.S. and M.S. (p. 108), M.S. (prior B.S.) (p. 106), M.S. (DPD) (p. 105), M.S. (prior R.D.) (p. 103), Comparison (p. 109)
- Nutrition Care Management — M.S. (p. 110)
- Occupational Therapy — M.O.T. (p. 112), O.T.D. (p. 114)
- Orthotics and Prosthetics — M.S.O.P., Entry Level (p. 117); M.S.O.P., Post-Professional (p. 117)
- Phlebotomy — Certificate (p. 87)
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- Physical Therapy (Postprofessional) — M.S.R. (p. 127), D.P.T. (45-unit track) and D.P.T. (65-unit track) (p. 125), D.Sc. (p. 126); Comparison (p. 128)
- Physician Assistant — M.P.A. (p. 129)
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- Radiation Sciences — B.S. (p. 145), M.S.R.S. (p. 148)
- Radiation Therapy Technology — Certificate (p. 149)
- Radiography Advanced Placement — Certificate (p. 150)
- Radiology Assistant — M.S.R.S. (p. 151)
- Rehabilitation Science — Ph.D. (p. 63)
- Rehabilitation Technician Training Program — Certificate (p. 64)
- Respiratory Care — B.S., Traditional (p. 73); B.S., Advanced Practitioner (p. 73); M.S.R.C. (p. 73)
- Special Imaging CT and MRI — Certificate (p. 152)
- Special Imaging CT — Certificate (p. 152), (Comparison) (p. 154)
- Special Imaging MRI — Certificate (p. 152), (Comparison) (p. 154)

Department of 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.

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 nonhealth-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. Candidates include 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 (http://www.llu.edu/assets/lifesupport-education/documents/ACLS-Pre-Test.pdf) 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 (http://www.llu.edu/assets/lifesupport-education/documents/ACLS-Pre-Test.pdf) 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 (http://www.llu.edu/assets/lifesupport-education/documents/ACLS-Pre-Test.pdf) 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

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

Prerequisite

For health-care and nonhealth-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 a 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. The American Association of Pediatrics provides NRP certification.

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.*

Primary faculty

Rafael Canizales

Kent Chow

Noha S. Daher

G. Charles Dart, Jr.

Intithar S. Elias

Craig R. Jackson

Arthur B. Marshak

Helen Martinez

Pamela Perez

Gail T. Rice

Borge Schantz

Ernest R. Schwab

Ardis E. Wazdatskey

Grenith J. Zimmerman

Adjunct faculty

Allan R. Handysides

Associated faculty

Lisa M. Beardsley-Hardy

Lee Berk

Kathryn M. Cockrill

Everett Lohman III

Donna Thorpe

Karla Lavin Williams

Emeritus faculty

Joyce W. Hopp

Advisory committee

Edd J. Ashley

Liane H. Hewitt

Craig R. Jackson

Programs

- Health Care Administration — B.S. (p. 59)
- Health Professions Education — Certificate (p. 62), M.S. (p. 62)
- Rehabilitation Science — Ph.D. (p. 63)
- Rehabilitation Technician Training Program — Certificate (p. 64)

Health Care Administration — B.S. (Online)

Program director
Karla Lavin Williams

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 health-care sustainability, information systems, accounting, finance, assessment, strategic and marketing plan development, personnel management, budget development and management, law and policy, and operations management.

Program outcomes

Upon completion of the B.S. degree program, the graduate should be able to demonstrate the following competencies:

1. Apply health-care management concepts and theory to sustainable decision-making practices, operations management, and strategic health-care administration.
2. Apply advanced skills in communicating with the 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.
5. Demonstrate advanced economic strategies in health-care management.
6. Develop advanced information systems skills applicable to the health-care environment.

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 (12 units minimum)

Anatomy and physiology (one quarter or semester)

Intermediate algebra. Two years of high school algebra with grades of C and above are acceptable.

Choose remaining units from: biology, chemistry, geology, mathematics, physics, and statistics.

Social sciences (12 units minimum)

Choose units from: anthropology, economics, geography, political science, psychology, and sociology.

The cultural diversity requirement is met by AHCJ 493 Senior Portfolio I and AHCJ 494 Senior Portfolio II, courses taken during the program.

Domain 3: Communications (9-13 quarter units)

English composition, complete sequence, must meet the baccalaureate degree requirements of a four-year college or university.

Oral communication (one course)

Computer (high school or waiver examination is acceptable)

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

Other

Medical terminology

Professional core

Health-care professional units may apply. Details will be discussed on a case-by-case basis with the program director.

Electives

Electives from any of the four domains may be selected to complete the general education minimum requirements of 68 quarter units. Some students may need to complete additional elective course work to bring their overall course unit total to a minimum of 192 quarter units while enrolled at Loma Linda University in order to meet graduation requirements.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Minimum of 96 quarter units (64 semester units) from an accredited college/university that are applicable to the degree program. (A maximum of 105 quarter units may transfer from a community/junior college. Units beyond 105 must come for a senior college/university.)
- Minimum of 2.5 G.P.A. for all transferable courses
- University general education (p. 28) requirements

Program requirements

Major		
AHCJ 475	Health-Care Research and Statistics	4
AHCJ 493	Senior Portfolio I	3
AHCJ 494	Senior Portfolio II	3
HCAD 305	Health-Care Communication	3
HCAD 316	Economics for Health-Care Managers	3
HCAD 328	Health-Care Organizational Behavior	3
HCAD 336	Legal Environment of Health Care	3
HCAD 359	Health-Care Marketing	3
HCAD 374	Health-Care Human Resources	3
HCAD 375	Health-Care Information Systems	3
HCAD 401	Health-Care Operations Management	3
HCAD 409	Principles of Health-Care Administration	3
HCAD 414	Sustainability for Health Care Management	3
HCAD 417	GIS for Health-Care Management	3
HCAD 446	Accounting for Health-Care Managers	3
HCAD 464	Health-Care Finance	3
HCAD 498	Health-Care Policy and Strategy	3
RTCH 387	Writing for Health-Care Professionals	3
Religion		
RELE 4__	Upper-division Ethics	3
RELR 4__	Upper-division Relational	3
Select one of the following:		3
RELT 406	Adventist Beliefs and Life	
RELT 423	Loma Linda Perspectives	
RELT 436	Adventist Heritage and Health	
RELT 437	Current Issues in Adventism	
Electives		32
Choose of the following		

AHCJ 225	History of Radiation and Imaging 1890-1940
AHCJ 226	History of Radiation and Imaging 1940-Present Day
AHCJ 228	Hispanic Culture for Allied Health Professionals
AHCJ 305	Infectious Disease and the Health-Care Provider
AHCJ 311	Medical Terminology
AHCJ 314	Managing Stress
AHCJ 324	Psychosocial Models and Interventions
ANTH 315	Cultural Anthropology
DTCS 300	Contemporary Nutrition
ENVH 414	Introduction to Environmental Health
ENVH 422	Principles of Geographic Information Systems
PEAC 110	Independent Activities
RTCH 464	Moral Leadership
RTED 476	Adult Learning Theory
RTII 354	Introduction to Informatics
Total Units	**96**

Normal time to complete the program

2 years at LLU) based on full-time enrollment

Health Professions Education — Certificate, M.S.

Program director
Arthur B. Marshak

Advisory committee
B. Lyn Behrens
Rafael Canizales
Marilyn Eggers
Robert Handysides
D. P. Harris
Joyce W. Hopp
Art Kroetz
Everett Lohman III
Christine Neish
W. P. Naylor
Doyle Nick
Gail Rice
Ernie Schwab
Tammi Thomas
Dolores Wright

The program

The 27-quarter-unit health professions education certificate and the 48-quarter-unit Master of Science degree are designed for health professionals 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. The certificate or master's degree programs may be taken online or in a face-to-face classroom setting.

Courses to complete the Master of Science degree include the required 24 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 required 24 units and a minimum of 9 units in 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.

Program outcomes

In addition to the stated institutional learning outcomes, Master of Science degree Health Professions Education Program graduates are expected to meet the following program and curriculum learning outcomes:

Outcome 1: Students will demonstrate teaching competence.

Performance indicators: students will be able to—

- construct learning modules that incorporate teaching and learning theory
- create learning activities that stimulate interaction and reflection
- apply current educational research in their teaching

Outcome 2: Students will demonstrate competence in program and curriculum assessment.

Performance indicators: students will be able to—

- produce curricular objectives and outcomes
- design educational experiences
- develop a curriculum and course assessment plan

Outcome 3: Students will exhibit competency in educational leadership.

Performance indicators: students will be able to—

- formulate their own personal philosophy of leadership
- apply leadership competency in managing change, developing policy, coaching, and mentoring

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Minimum of a baccalaureate degree from an accredited U. S. institution of higher education or an equivalent degree from an international degree-granting institution that is recognized by the appropriate government agency.
- Licensed (current), or eligible for licensure if international student (where country does not require licensure), to practice in a recognized health-care profession. The program director will advise on a case-by-case basis if the above categories are not definitive.
- Interview
- Note: Applicants should check with their respective professional, state, governmental (international students), and licensing requirements to determine if this degree program meets their professional needs.

Program requirements

- Health Professions Education — Certificate (p. 62), M.S (p. 62)

Health Professions Education — Certificate

Required		
AHCJ 506	Educational Evaluation and Clinical Assessment	3
AHCJ 509	Transformational Teaching and Learning	3
AHCJ 555	Writing for Health-Care Professionals	3
AHCJ 556	Administration in Higher Education (or other religion course chosen in consultation with program director)	3
RELE 524	Bioethics and Society	3
AHCJ 515	Curriculum Development in Higher Education	3
or NRSG 546	Curriculum Development in Higher Education	
Domain I electives		
Teaching, leading, assessment, and evaluation		
Choose from the following:		3-6
AHCJ 564	Collaborative Learning in Higher Education	
AHCJ 599	Directed Teaching	
AHCJ 600	Active Online Learning	
AHCJ 699	Directed Study	
HPED 504	Pedagogy and Technology	
HPED 535	Current Issues in Health Professions Education	
—	Elective (additonal courses may be chosen in consultation with the program director)	
Domain II electives		
Leadership electives		
Choose from the following:		3-6
AHCJ 539	Technology and Health-Care Organizations	
AHCJ 545	Legal and Ethical Issues in the Health Professions	
AHCJ 566	Theoretical Foundations of Leadership	
AHCJ 567	Personal Leadership	
AHCJ 699	Directed Study	
HADM 528	Organizational Behavior in Health Care	
HPED 517	History and Philosophy of Adventist Medical and Health Education	
HPED 561	Leadership in the Health Professions I	
RELR 525	Health Care and the Dynamics of Christian Leadership (May be used to satisfy the religion requirement for the program. May not double count.)	
—	Elective (additional courses may be chosen in consultation with the program director)	
Total Units		**27**

Normal time to complete the program

3 years based on less-than half-time enrollment

Health Professions Education — M.S.

Required		
AHCJ 506	Educational Evaluation and Clinical Assessment	3
AHCJ 509	Transformational Teaching and Learning	3
AHCJ 555	Writing for Health-Care Professionals	3
AHCJ 556	Administration in Higher Education	3
RELE 524	Bioethics and Society (Or other religion course chosen in consultation with program director)	3
AHCJ 515	Curriculum Development in Higher Education	3
or NRSG 546	Curriculum Development in Higher Education	
Capstone or Thesis		
Choose one option		6
Capstone option:		
HPED 581	Capstone Project in Health Professions Education I	
HPED 582	Capstone Project in Health Professions Education II	
Thesis option:		
HPED 551	Masters Thesis I	
HPED 552	Master's Thesis II	
Domain I electives		
Teaching, learning, assessment and evaluation		
Choose from the following:		6-18
AHCJ 564	Collaborative Learning in Higher Education	
AHCJ 599	Directed Teaching	
AHCJ 600	Active Online Learning	
AHCJ 699	Directed Study	
HPED 504	Pedagogy and Technology	
HPED 535	Current Issues in Health Professions Education	
—	Elective (Additional courses may be chosen in consultation with the program director.)	
Domain II electives		
Leadership electives		
Choose from the following:		6-18
AHCJ 539	Technology and Health-Care Organizations	
AHCJ 545	Legal and Ethical Issues in the Health Professions	
AHCJ 566	Theoretical Foundations of Leadership	
AHCJ 567	Personal Leadership	
AHCJ 699	Directed Study	
HADM 528	Organizational Behavior in Health Care	
HPED 517	History and Philosophy of Adventist Medical and Health Education	
HPED 561	Leadership in the Health Professions I (May be used to satisfy the requirement for the program.)	
—	Elective (Additional courses may be chosen in consultation with the program director.)	
Total Units		**48**

Normal time to complete the program

3 years based on half-time enrollment

Rehabilitation Science — Ph.D.

Program director
Grenith J. Zimmerman

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.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, 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).

Program 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		
RESC 517	Profession Advocacy in Allied Health Professions	4
Choose 3 units minimum from the following:		3
HPRO 523	Maternal/Child Health: Policy and Programs	
NUTR 525	Nutrition Policy, Programs, and Services	
SPOL 613	Social Science Concepts I	
SPOL 615	Economic Theory and Social Policy	
SPOL 656	Organizational Theory and Policy	
Domain 2		
Theories and application in health care systems and delivery		
RESC 519	Rehabilitation Theories and Applications in Health Care	3
Choose 3 units minimum from the following:		3
AHCJ 539	Technology and Health-Care Organizations	
AHCJ 545	Legal and Ethical Issues in the Health Professions	
DTCS 525	Nutrition Care Marketing	
HADM 506	Principles of Health-Care Finance	
HADM 509	Principles of Health Policy and Management	
HADM 528	Organizational Behavior in Health Care	
HADM 555	Health-Care Delivery Systems	
HADM 559	Health-Care Marketing	
HADM 575	Management Information Systems in Health Care	
HADM 580	Foundations of Leadership	
OCTH 600	Occupational Science and Health Promotion	
OCTH 604	Health, Society, and Participation	
Domain 3		
Determinants of health behavior		
Choose 3 units minimum from the following:		3
GLBH 517	Cultural Issues in Health Care	
GLBH 548	Violence and Terrorism Issues	
GLBH 550	Women in Development	
HPRO 509	Principles of Health Behavior	
HPRO 588	Health Behavior Theory and Research	
Choose 3 units minimum from the following:		3
AHCJ 528	Lifestyle Health and Wholeness	
AHCJ 574	Behavioral Modification and Personal Change	
AHCJ 575	Couples, Families, and Disabilities	
EPDM 509	Principles of Epidemiology	
HPRO 515	Mind-Body Interactions and Health Outcomes	
HPRO 527	Obesity and Disordered Eating	
HPRO 542	Health and Dependency Counseling	
Domain 4		
Leadership and higher education		
Choose 3 units minimum from the following:		3
AHCJ 551	Professional Systems in Management I	
AHCJ 556	Administration in Higher Education	
AHCJ 566	Theoretical Foundations of Leadership	
OCTH 606	Leadership for Health Professionals	
Choose 3 units minimum from the following:		3
AHCJ 505	Educational Psychology for Health Professionals	
AHCJ 506	Educational Evaluation and Clinical Assessment	
AHCJ 509	Transformational Teaching and Learning	
AHCJ 515	Curriculum Development in Higher Education	
AHCJ 564	Collaborative Learning in Higher Education	
AHCJ 599	Directed Teaching	
OCTH 605	Education for Health Professionals	

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)		
AHCJ 519	Graduate Wholeness Portfolio	1
Choose 3 units minium from the following:		3
RELE 524	Bioethics and Society	
RELE 525	Ethics for Scientists	
RELE 564	Ethics and Health Disparities	
RELE 567	World Religions and Bioethics	
Choose 3 units minimum from the following:		3
RELR 525	Health Care and the Dynamics of Christian Leadership	
RELR 528	Christian Citizenship and Leadership	
RELR 535	Spirituality and Mental Health	
RELR 536	Spirituality and Everyday Life	
RELR 549	Personal and Family Wholeness	
RELR 584	Culture, Psychology, and Religion	
Choose 3 units minimum from the following:		3
RELT 527	The Bible and Ecology	
RELT 534	Anthropology of Mission	
RELT 539	Christian Understanding of God and Humanity	
RELT 540	World Religions and Human Health	
RELT 557	Theology of Human Suffering	
RELT 563	Health Care, Humanity, and God	
Research and dissertation		
Didactic course work (12 units minimum)		
PHTH 535	Research and Statistics I	3
PHTH 536	Research and Statistics II	3
RESC 697	Research	24
Choose 6 units minimum from the following:		6
AHCJ 605	Critical Analysis of Scientific Literature	
HPRO 589	Qualitative Research Methods	
STAT 515	Grant- and Contract-Proposal Writing	
STAT 535	Modern Nonparametric Statistics	
STAT 564	Survey and Advanced Research Methods	
STAT 568	Data Analysis	
Total Units		**71**

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/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 sections of this catalog for the University (p. 36) and the School of Allied Health Professions (p. 47).

Normal time to complete the program

4.5 years based on three-quarter-time enrollment

Rehabilitation Technician Training Program — Certificate

Program Directors
Everett B. Lohman III
Heather Thomas

The Rehabilitation Technician Training Program is designed to train rehabilitation technicians to serve as paraprofessionals to rehabilitate persons with disabilities back into Haitian society. The philosophy of the program is to graduate highly skilled, Christian-trained technicians to serve the underserved, disabled community in Haiti and to serve in a supporting role under the supervision of occupational and physical therapists.

Language of instruction

French (taught in English with French translation)

Student learning outcomes

In addition to the institutional learning outcomes (p. 19) (ILOs), the program will also assess the following programmatic SLOs: professional focus, compassionate care, clinical excellence, and whole patient care.

Associated faculty

Bruce D. Bradley

Timothy K. Cordett

Nicceta Davis

Henry A. Garcia

Susan M. Huffaker

Wesley R. Swen

Antonio Valenzuela

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Have at minimum a high school diploma (Bacclaureat I or Baccalaureat II)
- Have a 2.5 G.P.A or above
- Complete an interview
- Complete an application

Program requirements

Required		
RELE 155	Introduction to Christian Bioethics	3
RTTP 101	Orthopaedic Interventions I: Physical Therapy	4
RTTP 102	Orthopaedic Interventions II: Occupational Therapy	2
RTTP 104	Introduction to Rehabilitation Services	1.5
RTTP 108	Introduction to Orthotics and Prosthetics Services for Clinicians	2.5
RTTP 109	Psychosocial Aspects in Health Care	3
RTTP 110	Current Issues in Health Care: Haiti	3
RTTP 120	Therapeutic Modalities	2
RTTP 121	Neurological Interventions I : Physical Therapy	1.5
RTTP 122	Neurological Interventions II: Occupational Therapy	1.5
RTTP 124	Acute Care and Early Rehabilitation	1.5
RTTP 125	Cardiopulmonary Care	2
RTTP 126	Mobility, Transfers, and Accessibility	1
RTTP 127	Wound Care	1.5
RTTP 128	Community-Based Rehabilitation	1.5
RTTP 130	Hand and Upper Extremity Rehabilitation	1
RTTP 131	Pediatric Interventions I : Physical Therapy	1.5
RTTP 132	Pediatric Interventions II : Occupational Therapy	1.5
RTTP 134	Intervention Techniques for Independence in Self-Care	1.5
RTTP 135	Adaptation and Implementation of Devices	1.5
RTTP 141	Field Work I	4
RTTP 160	Documentation and Medical Terminology	4
RTTP 161	Essentials of Human Anatomy and Physiology	10
RTTP 162	Infectious Disease and the Health-Care Provider	4
RTTP 166	First Aid for the Rehabilitation Technician	1
RTTP 199	Clinical Competency Examination	0
RTTP 901	Rehabilitation Technician Affiliation I	12
RTTP 902	Rehabilitation Technician Affiliation II	12
RTTP 903	Rehabilitation Technician Affiliation III	12
Total Units		**97.5**

Department of Cardiopulmonary Sciences

The Department of Cardiopulmonary Sciences offers a full range of clinical and professional programs related to cardiac, pulmonary, sleep, and critical and emergency care. The department's goal is to offer excellence in education through small class sizes, access to expert faculty, and a faith-based educational environment. Our graduates go on to become advocates and leaders while serving as patient-care providers, researchers, and administrators.

Chair

David Lopez

Primary faculty

Alan Alipoon

Abdullah K. Alismail

Barbara J. Dickinson

Katherine M. Gattuso

Janelle M. Guerrero

David Lopez

Traci L. Marin

Ehren B. Ngo

Lindsay M. Simpson

Charles B. Spearman

David M. Stanton

Secondary and adjunct faculty

Stanley Baldwin

Arthur B. Marshak

Thurman A. Merritt

N. Lennard Specht

Clinical faculty

Khalid Alawam

Abdullah Alismail

Stan Baldwin

Thomas W. Taylor, Jr.

Leo M. Langga

Michael Lum

Richard D. Nelson

Ehren Ngo

Michael Osur

Mark S. Rogers

Loreen K. Scott

Associated faculty

Noha S. Daher

Grenith Zimmerman

Programs

- Cardiac Electrophysiology Technology — A.S. (p. 66), Certificate (p. 66) (Comparison (p. 69))
- Emergency Medical Care — B.S. (p. 69)
- Polysomnography — Certificate (p. 72)
- Respiratory Care — B.S. (Traditional) (p. 73), B.S. (Advanced Practitioner) (p. 73), M.S.R.C (p. 73).

Cardiac Electrophysiology Technology — A.S., Certificate

Program director
Alan Alipoon

Electrophysiology is a subspecialty of cardiology that focuses on treating heart rhythm abnormalities. The cardiac electrophysiology technologist assists 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.

CPR certification

Students are required to have current health-care provider cardiopulmonary resuscitation (CPR) certification (adult, child, and infant) for all scheduled clinical experience. Cardiopulmonary resuscitation 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.

Certification

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

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

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 (26 semester) units for the A.S. degree

Program requirements

- Cardiac Electrophysiology Technology — Certificate (p. 67), A.S. (p. 67), Comparison (p. 69)

Cardiac Electrophysiology Technology — A.S.

Autumn Quarter		Units
AHCJ 326	Fundamentals of Health Care	2
AHCJ 328	Wholeness Portfolio I	1
CEPT 245	Cardiovascular Anatomy and Physiology	3
CEPT 248	Cardiovascular Patient Assessment	2
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I	2
CEPT 258	Fundamentals of Biomedical Science	2
CEPT 261	Cardiac Electrophysiology Science I	3
CEPT 275	Cardiovascular Pharmacology	3
CEPT 321	Cardiac Electrophysiology Clinical Practicum I	0.5
Winter Quarter		
AHCJ 402	Pathology I	4
CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II	2
CEPT 262	Cardiac Electrophysiology Science II	3
CEPT 271	Cardiology Diseases and Therapeutics I	2
CEPT 281	Cardiac Electrophysiology Procedures I	3
CEPT 322	Cardiac Electrophysiology Clinical Practicum II	1.5
Spring Quarter		
AHCJ 305	Infectious Disease and the Health-Care Provider	1
CEPT 253	Cardiac Electrophysiology and Rhythm Recognition III	3
CEPT 263	Cardiac Electrophysiology Science III	3
CEPT 272	Cardiology Diseases and Therapeutics II	2
CEPT 282	Cardiac Electrophysiology Procedures II	3
CEPT 285	Cardiology	3
CEPT 323	Cardiac Electrophysiology Clinical Practicum III	1.5
Summer Quarter		
CEPT 324	Cardiac Electrophysiology Clinical Practicum IV	2
CEPT 345	Case Studies in Cardiac Electrophysiology	2
CEPT 348	Cardiac Electrophysiology Seminar	3
RELE 457	Christian Ethics and Health Care	3
REL_ 4__ (Religion elective)		2
	Total Units:	**62.5**

Normal time to complete the program

44 weeks (4 academic quarters) at LLU based on full-time enrollment

Cardiac Electrophysiology Technology — Certificate

Autumn Quarter		Units
CEPT 245	Cardiovascular Anatomy and Physiology	3
CEPT 248	Cardiovascular Patient Assessment	2
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I	2
CEPT 258	Fundamentals of Biomedical Science	2
CEPT 261	Cardiac Electrophysiology Science I	3
CEPT 275	Cardiovascular Pharmacology	3
CEPT 321	Cardiac Electrophysiology Clinical Practicum I	0.5
Winter Quarter		
AHCJ 402	Pathology I	4
CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II	2
CEPT 262	Cardiac Electrophysiology Science II	3
CEPT 271	Cardiology Diseases and Therapeutics I	2
CEPT 281	Cardiac Electrophysiology Procedures I	3

CEPT 322	Cardiac Electrophysiology Clinical Practicum II	1.5
Spring Quarter		
AHCJ 305	Infectious Disease and the Health-Care Provider	1
CEPT 253	Cardiac Electrophysiology and Rhythm Recognition III	2
CEPT 263	Cardiac Electrophysiology Science III	3
CEPT 272	Cardiology Diseases and Therapeutics II	2
CEPT 282	Cardiac Electrophysiology Procedures II	3
CEPT 285	Cardiology	3
CEPT 323	Cardiac Electrophysiology Clinical Practicum III	1.5
Summer Quarter		
CEPT 324	Cardiac Electrophysiology Clinical Practicum IV	2
CEPT 345	Case Studies in Cardiac Electrophysiology	2
CEPT 348	Cardiac Electrophysiology Seminar	3
REL_ 4 (religion elective)		2
	Total Units:	**55.5**

Normal time to complete the program

44 weeks (4 academic quarters) based on full-time enrollment

Cardiac Electrophysiology Technology — Certificate, A.S. Comparison

Autumn Quarter	Course Title	Certificate	AS
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
AHCJ 326	Fundamentals of Health Care		2.0
AHCJ 328	Wholeness Portfolio I		1.0
Totals		**15.5**	**18.5**
Winter Quarter	**Course Title**	**Certificate**	**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**
Spring Quarter	**Course Title**	**Certificate**	**AS**
AHCJ 305	Infectious Disease and the Health-Care Provider	1.0	1.0
CEPT 253	Cardiac Electrophysiology and Rhythm Recognition III	2.0	2.0
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		**15.5**	**15.5**
Summer Quarter	**Course Title**	**Certificate**	**AS**
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		3.0
Totals		**9.0**	**12.0**
Overall Totals		**55.5**	**61.5**

Emergency Medical Care — B.S.

Program director
Ehren Ngo

Advisory committee
Carrie Cobos
Jeff Covitz
William Diez
Mark Hartwig
Lisa Higuchi
Jim Holbrook
Ron Holk
Craig Jackson, ex officio
Tae Kim
David Lopez
Tom Lynch
Brendan Manning
Ehren Ngo
Chris Nollette
Michael Osur
Stacey Price
Lindsey Simpson

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.

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 Department of Cardiopulmonary Sciences administrative 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.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

Prerequisite/Corequisite (general program track)

Humanities. Choose a minimum of three areas from the following: *	20
History	
Literature	
Philosophy	
Foreign language	
Art/music appreciation/history	
Human anatomy, with laboratory **	
Human physiology, with laboratory **	
Chemistry one quarter/semester, with laboratory **	
Introductory physics, one quarter/semester **,***	
Microbiology with laboratory	
College algebra **,***	
General psychology **	
Cultural anthropology or an approved course dealing with cultural diversity **	
Select 4 more quarter units from the following:	4
Sociology	
Economics	
Geography	
Political science	
Psychology	
English composition, complete sequence **	
Personal health or nutrition	
Two physical activity courses	
Electives to meet 96 quarter units	

* Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

** Denotes EMC B.S. degree program prerequisites

*** Requirement may be waived based on review of previous course work completed

Prerequisite/Corequisite (pre-physician assistant track)

Humanities. Choose a minimum of three areas from the following: *	20
History	
Literature	
Philosophy	
Foreign language (Spanish language recommended)	
Art/music appreciation/history	
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	
Electives to meet 96 quarter units	

* Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

** Denotes EMC B.S. degree program prerequisites

Prerequisite/Corequisite (pre-medicine track)

Humanities. Choose a minimum of three areas from the following: *	20
History	
Literature	
Philosophy	
Foreign language (Spanish language recommended)	
Art/music appreciation/history	
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 the following:	4
Sociology	
Economics	
Geography	
Political science	
Anthropology	
Psychology	
Freshman English, complete sequence **	
Personal health or nutrition	
Two physical activity courses	
Electives to meet 96 quarter units	

* Included in this minimum, 4 units of religion per year of attendance at a Seventh-day Adventist college or university

** 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 Division of General Studies (p. 28).

Program requirements

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
AHCJ 426	Introduction to Computer Applications	2.0
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	3.0
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
RELT 423	Loma Linda Perspectives	2.0
RELT 416 or 440	God and Human Suffering	3.0

Senior Year

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	3.0
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
RELE 457	Christian Ethics and Health Care	3.0
RSTH 411	Advanced Cardiac Life Support	2.0
	Total Units:	**83**

Normal time to complete the program

2 years [6 academic quarters] based on full-time enrollment; part time permitted

Polysomnography — Certificate

Program director
Abdullah K. Alismail

The expansion of polysomnography (sleep studies) in the health-care industry has created a marked increase in demand for polysomnography technicians. Many polysomnography clinics are inundated with referrals —which may be deferred for months at a time due to inadequate staffing, resulting in delay of sleep disorder diagnoses and appropriate treatments. The Polysomnography Program certificate is designed for current respiratory care practitioners interested in specializing in sleep disorder studies. Both didactic theory and clinical application offered in the program will provide an avenue to gain knowledge, skills, and experience in the expanding discipline of polysomnography. Topics include sleep terminology, sleep structure and disorders, complete patient set-up and monitoring, data acquisition and scoring, and pharmacological and noninvasive interventions. The program is offered on campus and will include: laboratory/clinical rotations, online and classroom discussions, and a case study presentation. Graduates of this program are eligible to sit for the Sleep Diagnostic Specialist (SDS) examination by the National Board of Respiratory Care (NBRC) and/or the RPSGT examination by the Board of Registered Polysomnography Technologists (BRPT) after completion of 546 hours of clinical experience.

Program outcomes

After completion of the program, graduates will**:**

1. Be eligible to sit for the Sleep Diagnostic Specialist (SDS) examination by the National Board of Respiratory Care (NBRC) and/or the RPSGT examination by the Board of Registered Polysomnography Technologists (BRPT).
2. Possess skills to recognize and treat a variety of different sleep disorders.
3. Be able to effectively perform and interpret a polysomnogram.
4. Be able to communicate professionally with patients and staff members.
5. Have the skills and knowledge to educate patients about diseases and treatments.
6. Have the skills and knowledge to suggest and implement appropriate sleep disturbance interventions.

Program objectives

1. Identify basic sleep terminology, sleep structure, and sleep disorders.
2. Comprehend the effect of sleep-related breathing disorders on patients' physiology.
3. Perform and translate the International 10-20 system data acquisition (or equivalent) as it relates to sleep disorders testing.
4. Recognize the technology behind the monitoring devices utilized in sleep disorders testing and identify the locations used for patient monitoring.
5. Recognize the components of a computerized sleep acquisition system and describe the adjustments necessary to produce a quality/valid study.
6. Recognize the components of a sleep report and demonstrate proper application of continuous positive airway pressure (CPAP), bi-level ventilation, and oxygen therapy to patients with sleep-related breathing disorders.
7. Demonstrate the process of a patient set-up, sleep stage, and event scoring.
8. Identify cardiac dysrhythmias and physiologic events and their clinical significance during the sleep evaluation.
9. Independently perform the patient set-up for a sleep study and begin the data acquisition process, data interpretation, and troubleshooting.
10. Demonstrate professional behavior towards patients and staff.
11. Illustrate professional behavior towards patients with home CPAP for sleep by educating them about its use and effect with reference to their sleep disorder.

Professional examination and certification eligibility

Graduates of this program are eligible to sit for the Sleep Diagnostic Specialist (SDS) examination by the National Board of Respiratory Care (NBRC) and/or the RPSGT examination by the Board of Registered Polysomnography Technologists (BRPT) after completion of a minimum of 546 hours of clinical experience. NBRC inquiries can be made to 18000 West 105th Street, Olathe, KS 66061; telephone, 913/895-4900; fax, 913/895-4650; or Web site, <http://www.nbrc.org>. BRPT inquiries can be made to 8400 Westpark Drive 2nd Floor McLean, VA 22102; (703) 610-9020, fax: (703) 610-0229; Web site <http://brpt.org>.

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- Applicant must be a graduate from an accredited Respiratory Care Program by the Commission on Accreditation of Respiratory Care (CoARC) and acceptable by Loma Linda University. 1248 Harwood Road, Bedford, TX 76021–4244; telephone, 817/283-2835; list of approved programs can be found at <http://www.coarc.com>.
- Post Associate Degree in Respiratory Care or the equivalent, i.e., graduate of an entry level BS respiratory care program.
- Current Basic Life Support certification from the American Heart Association.
- Minimum of 2.5 G.P.A.
- Interview with program faculty.
- Complete the subject requirements noted as prerequisites (students who have not completed a small minimum number of prerequisites requirements may be accepted on a provisional basis).

Prerequisites

- Human anatomy and physiology or general biology with laboratory, complete sequence or the equivalent from a COARC approved program.
- Microbiology with laboratory.

- Introductory chemistry with laboratory, complete sequence; or general chemistry with laboratory, complete sequence or the equivalent from a COARC approved program.
- High school-level physics or introductory physics, one quarter/semester in college; or general physics, one quarter/semester in college or the equivalent from a COARC approved program.
- 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.

Recommended course work

- Speech
- Sociology

Basic Life Support

Since this program will have a clinical rotations and patient contact, students are required to have a cardiopulmonary resuscitation (CPR)/BLS card certification. This certification has to be current and obtained from an authorized American Heart Association training center. BLS course is offered at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

Program requirements

Autumn Quarter		**Units**
AHCJ 328	Wholeness Portfolio I	1
EMMC 314	ECG Interpretation and Analysis	2
RSPS 210	Foundation of Polysomnography and Sleep Medicine	3
RSPS 227	Neuroanatomy and Physiology of Sleep	3
RSPS 230	Polysomnography Science Methodology	3
Winter Quarter		
RSPS 234	Polysomnography Patient Education and Safety	2
RSPS 256	Polysomnography Monitoring and Scoring	3
RSPS 274	Polysomnography Diseases	3
RSPS 295	Polysomnography Practicum I	4
Spring Quarter		
EMMC 316	12-Lead ECG Interpretation	2
RELR 475	Art of Integrative Care	3
RSPS 286	Polysomnography Case Study	3
RSPS 296	Polysomnography Practicum II	4
	Total Units:	**36**

Clinical Rotations

The polysomnography program offers clinical practicum course at an affiliated clinical sites. Thus, students will commute to a 12 hours clinical rotation on every assigned clinical day; this might include day and night shifts. Therefore, each student is responsible for their own transportation to each clinical site. The program will assign clinical instructors for each site to assess student learning and competency check-offs.

Normal time to complete the program

34 weeks (3 academic quarters) based on full-time enrollment

Respiratory Care — B.S., M.S.R.C.

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.

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.

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 <http://www.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, <http://www.csrc.org" target=>.

Programs

- Respiratory Care — B.S. (Traditional) (p. 75), M.S.R.C. (p. 78)
- Advanced Practitioner Respiratory Care (Postprofessional) — B.S. (p. 74)

Advanced Practitioner Respiratory Care (Postprofessional) — B.S.

Program director
David Lopez

Loma Linda University offers two Bachelor of Science degree curricula in respiratory care. The advanced practitioner respiratory care 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 one-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.

Advanced Practitioner Respiratory Care—B.S. (Postprofessional/Clinical track)

The clinical track of the Advanced Practitioner Respiratory Care Program is open only to students who completed the Loma Linda University entry-level Bachelor of Science degree program in respiratory care in Riyadh, Saudi Arabia. This program was designed to meet the requirements of the new Saudi Arabian regulations as decreed by King Abdullah bin Abdulaziz.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- Be a graduate of a CoARC-approved or provisionally approved, or CoARC-approved advanced practitioner associate degree (or the equivalent) program in respiratory care;
- Complete the subject requirements noted as prerequisites (students who have not completed these requirements may be accepted on a provisional basis); and,
- 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

Natural sciences—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

Social Science—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

Communication—English composition, complete sequence

Speech

Health and Wellness—Personal health or nutrition

Two physical activity courses

Electives to meet minimum total requirement of 96 quarter units

For total unit requirements for graduation, LLU General Education Requirements (p. 28).

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.

Program requirements

Postprofessional

Senior Year		
Autumn Quarter		**Units**
AHCJ 328	Wholeness Portfolio I	0
AHCJ 465	Seminars in Leadership	2
AHCJ 471	Statistics and Research for Health Professionals I	3
AHCJ 498	Wholeness Portfolio II	0
RELT 406, 423, or 436	Adventist Beliefs and Life	3
RSTH 301	Advanced Respiratory Therapy Science I	3
RSTH 434	Advanced Patient Assessment	2
Winter Quarter		
AHCJ 328	Wholeness Portfolio I	0
AHCJ 402	Pathology I	4
AHCJ 472	Statistics and Research for Health Professionals II	3
AHCJ 498	Wholeness Portfolio II	0
RSTH 424	Exercise Physiology and Pulmonary Rehabilitation	3
RSTH 431	Senior Project I	2
RSTH 466	Advanced Diagnostic Techniques	2
RSTH 485	Evidenced-Based Medicine in Respiratory Care	4
Spring Quarter		
AHCJ 328	Wholeness Portfolio I	1
AHCJ 403	Pathology II	3
AHCJ 498	Wholeness Portfolio II	1
EMMC 315	Cardiology	3
EMMC 316	12-Lead ECG Interpretation	2
RELE 4__	Upper-division ethics	2
RSTH 401	Cardiopulmonary Intensive Care	2
RSTH 432	Senior Project II	2
RSTH 486	Evidenced-Based Medicine in Respiratory Care II	4
Summer Quarter		
RSTH 315 or 422	Pediatric Perinatal Respiratory Care	2
RSTH 433	Senior Project III	2
RSTH 451	Respiratory Care Affiliation I	2
RSTH 471	Instructional Techniques I	2
RSTH 487	Evidenced-Based Medicine in Respiratory Care III	4
	Total Units:	**63**

Normal time to complete the program

1 year [4 academic quarters] at LLU based on full-time enrollment

Postprofessional/Clinical track

Senior Year		
Autumn Quarter		**Units**
RELE 4__	Upper-division ethics	2
RSTH 301	Advanced Respiratory Therapy Science I	3
RSTH 451	Respiratory Care Affiliation I	2
RSTH 462	Management Practicum II	3
RSTH 491	Education Practicum I	3
Winter Quarter		
RSTH 431	Senior Project I	2
RSTH 452	Respiratory Care Affiliation II	4
RSTH 463	Management Practicum III	3
RSTH 485	Evidenced-Based Medicine in Respiratory Care	4
RSTH 492	Education Practicum II	3
Spring Quarter		
RSTH 401	Cardiopulmonary Intensive Care	2
RSTH 432	Senior Project II	2
RSTH 453	Respiratory Care Affiliation III	4
RSTH 486	Evidenced-Based Medicine in Respiratory Care II	4
RSTH 493	Education Practicum III	3
Summer Quarter		
RELE 4__		3
RSTH 411	Advanced Cardiac Life Support	2
RSTH 433	Senior Project III	2
RSTH 454	Respiratory Care Affiliation IV	5
RSTH 487	Evidenced-Based Medicine in Respiratory Care III	4
	Total Units:	**60**

Normal time to complete the program

1 year [4 academic quarters] at LLU) based on full-time enrollment

Respiratory Care (Traditional) — B.S.

Program director
David M. Stanton

Director of clinical education
Katherine Gattuso

Medical director
N. Lennard Specht

Loma Linda University offers two Bachelor of Science degree curricula in respiratory care. The traditional curriculum is for students who have had no previous education in respiratory care and who have completed the program prerequisites listed below. The postprofessional 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.

Those electing to study on a part-time basis must complete the junior and senior years within a four-year period.

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), which is required for on-time graduation.

Accreditation

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, <http://www.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 3750 Rosin Court, Suite 100, Sacramento, CA 95834; telephone, 916/999-2190; fax, 916/263-7311; or Web site, <http://www.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, <http://www.nbrc.org>.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- Complete the subject requirements noted as prerequisites (students who have not completed these requirements may be accepted on a provisional basis); and
- 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 Science—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

High school-level computers or introductory 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 (p. 28) (Section II).

Program requirements

Junior Year		
Autumn Quarter		
AHCJ 311	Medical Terminology	2
AHCJ 326	Fundamentals of Health Care	2
AHCJ 328	Wholeness Portfolio I	0
RSTH 304	Cardiopulmonary Anatomy and Physiology	4
RSTH 331	Pharmacology I	2
RSTH 334	Patient Assessment	2
RSTH 341	Respiratory Therapy Science I	5
Winter Quarter		
AHCJ 328	Wholeness Portfolio I	0
AHCJ 402	Pathology I	4
RSTH 332	Pharmacology II	2
RSTH 342	Respiratory Therapy Science II	5
RSTH 366	Diagnostic Techniques	3
RSTH 381	Cardiopulmonary Diseases I	2
RSTH 391	Respiratory Care Practicum I	2
Spring Quarter		
AHCJ 305	Infectious Disease and the Health-Care Provider	1
AHCJ 328	Wholeness Portfolio I	1
AHCJ 403	Pathology II	3
RELE 457[1]	Christian Ethics and Health Care	2
RSTH 323	Pulmonary Function Methodology	3
RSTH 343	Respiratory Therapy Science III	4
RSTH 382	Cardiopulmonary Diseases II	2
RSTH 392	Respiratory Care Practicum II	2
Senior Year		
Summer Quarter		
EMMC 316	12-Lead ECG Interpretation	2
RELT 406, 423, or 436 (Choose one course)	Adventist Beliefs and Life	2
RSTH 393	Respiratory Care Practicum III	4
RSTH 404	Critical Care	4
Autumn Quarter		
AHCJ 465	Seminars in Leadership	2
AHCJ 471	Statistics and Research for Health Professionals I	3
AHCJ 498	Wholeness Portfolio II	0
RSTH 354	Case Studies in Adult Respiratory Care	2
RSTH 421	Perinatal and Pediatric Respiratory Care	2
RSTH 434	Advanced Patient Assessment	2
RSTH 441	Respiratory Therapy Science IV	3
RSTH 494	Respiratory Care Practicum IV	2
Winter Quarter		
AHCJ 472	Statistics and Research for Health Professionals II	3
AHCJ 498	Wholeness Portfolio II	0
RELR 475[2]	Art of Integrative Care	2
RSTH 422	Advanced Perinatal and Pediatric Respiratory Care	2
RSTH 424	Exercise Physiology and Pulmonary Rehabilitation	3
RSTH 444	Case Studies in Neonatal/Pediatric Respiratory Care	2
RSTH 466	Advanced Diagnostic Techniques	2
RSTH 495	Respiratory Care Practicum V	2
Spring Quarter		
AHCJ 498	Wholeness Portfolio II	1
EMMC 315	Cardiology	3
RELT 416[3]	God and Human Suffering	2
RSTH 464	Case Management in Respiratory Care	2
RSTH 471	Instructional Techniques I	2
RSTH 474	Cardiopulmonary Health Promotion and Disease Prevention	2
RSTH 496	Respiratory Care Practicum VI	3
	Total Units:	**112**

A minimum of 192 quarter units is required for the Bachelor of Science degree in respiratory care.

1 May substitute with another RELE course

2 May substitute with another RELR course

3 May substitute with another REL_ course

Normal time to complete the program

2 years [7 academic quarters] at LLU) — full-time enrollment required

Respiratory Care — M.S.R.C.

Program director
Traci Marin

Respiratory care practitioner students will receive didactic and clinical knowledge to advance their expertise in the areas of education, leadership, clinical, industry, and management in the respiratory care sciences from a medical evidence perspective. This one-year program is designed to be either a face-to-face, on-campus, or online format. Courses will be a combination of discussion, projects, case studies, and Web-based learning. The online program students will be required to schedule an online orientation one week prior to the beginning of their courses.

An optional two-quarter, advanced practice clinical practicum is also included that requires the consent of the program director, the department chair, and the medical director—along with the approval and acceptance of a physician preceptor agreement form on file.

Program objectives

1. Graduate competent, advanced practitioners 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.

Program outcomes

In addition to the stated institutional learning outcomes, the professional Master of Science Respiratory Care degree graduates are expected to meet the following program and curriculum learning outcomes:

1. Demonstrate evidence-based and advanced knowledge in respiratory care.
   - Apply evidence-based 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).
   - Perform evidence-based, advanced patient assessment; as well as diagnostic skills for the cardiopulmonary patient.
2. Demonstrate advanced leadership skills.
   - Develop fundamental skills in leadership.
   - Graduate leaders who engage in activities that advance the respiratory care profession.
   - Develop fundamental skills in topic presentation to health-care professionals and the patient-care community.
3. Apply research, statistical methods, and current technology to evaluate and better serve the medical community.
   - Continue the development of skills to conduct and interpret research in the health-care arena.
   - Apply research skills to clinical and theoretical situations.
4. Demonstrate advanced knowledge and clinical skills in respiratory care practice.
   - Apply advanced clinical skill to the cardiopulmonary patient.
   - Apply problem-solving skills in the areas of advanced pulmonary and cardiology physiology and related diagnostics to cardiopulmonary patients.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- A baccalaureate degree from an accredited or recognized institution of higher education recognized by Loma Linda University. Preference will be given for those with a baccalaureate degree in health care.
- A registered respiratory therapist credential from the National Board for Respiratory Care, and to be licensed in his/her state of residence or the equivalent.
- A minimum of two years of full-time, consecutive work experience in respiratory care practice.
- Current AHA CPR certification and AHA certification in the applicant's area of professional practice (ACLS, PALS, NRP, etc).

Program requirements

Autumn Quarter		**Units**
AHCJ 519	Graduate Wholeness Portfolio	0
AHCJ 571	Statistics and Research for Health Professionals I	3
RELE 524	Bioethics and Society	3
RSTH 501	Advanced Cardiopulmonary Anatomy and Physiology I	3
RSTH 580	Research Concept in Respiratory Care Sciences	3
RSTH 591	Capstone Project in Respiratory Care I	2
Winter Quarter		
AHCJ 519	Graduate Wholeness Portfolio	0
AHCJ 572	Statistics and Research for Health Professionals II	3
RSTH 502	Advanced Cardiopulmonary Anatomy and Physiology I	3
RSTH 541	Advanced Concepts in Critical Care I	3
RSTH 550	Advanced Procedures in Cardiopulmonary Science	2
RSTH 560	Advanced Cardiopulmonary Assessment, Diagnostics, and Monitoring	2
RSTH 592	Capstone Project in Respiratory Care II	2
Spring Quarter		
AHCJ 519	Graduate Wholeness Portfolio	1
AHCJ 566	Theoretical Foundations of Leadership	3
RSTH 542	Advanced Concepts Critical Care II	3
RSTH 571	Advanced Pathophysiology of Cardiopulmonary Diseases I	3
RSTH 593	Capstone Project in Respiratory Care III	2
RSTH 596	Advanced Clinical Practice in Respiratory Care I	3
Summer Quarter		
AHCJ 545	Legal and Ethical Issues in the Health Professions	3
RSTH 572	Advanced Pathophysiology of Cardiopulmonary Diseases II	3
RSTH 585	Current Issues in Respiratory and Health Care Policy	3

RSTH 594	Capstone Project in Respiratory Care IV	2
RSTH 597	Advanced Clinical Practice in Respiratory Care II	3
	Total Units:	**58**

Normal time to complete the program

1 year (4 academic quarters) — full-time enrollment required

Department of Clinical Laboratory Science

The Clinical Laboratory Sciences Department is home to the programs associated with laboratory medicine: Clinical Laboratory Science (a.k.a. Medical Technology or Medical Laboratory Science), Cytotechnology (a.k.a. Cytology), and Phlebotomy (a.k.a. Venipuncture). Whether testing blood or body fluids, analyzing cells and cell patterns, or collecting patient samples, the laboratory professional is integral to the health-care team and patient care.

The goals of the Clinical Laboratory Sciences Department are as follows:

1. To provide opportunities, instruction, and guided experiences enabling the student to acquire the basic knowledge and attain technical ability essential to the practice of his/her chosen profession.
2. To help the student accept responsibility for integrity, ethical relationships, and empathic attitudes that 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 professional growth.
5. To engender and nurture in the student the desire to serve mankind and, in particular, to serve as needed in medical centers in the United States and abroad sponsored by the Seventh-day Adventist Church.

Chair

Rodney M. Roath

Primary faculty

Craig E. Austin

Grace T. Baker

Nove Basical-Oliver

James A. Brandt

Linda S. Buckert

Louis J. Cota, Jr.

Katherine G. Davis

Monique K. Gilbert

J. Kapua Hollands

Susie M. Johnson

Jasmine H. Kaloshian

Brad D. Koontz

Tuyhoa T. Le

Claro Y. Masangcay

Thuan H. Nguyen

Marlene M. Ota

Elde M. B. Paladar

Desiree L. Palafox

Rodney M. Roath

Teri H. Ross

Linda J. Shain

Margaret A. Tavares

Patricia A. Williams

Jane N. Zappia

Secondary faculty

Paul C. Herrmann

Darryl G. Heustis

Edward H. Rowsell

Pamela J. Wat

Associated faculty

John E. Lewis

James M. Pappas

Programs

- Clinical Laboratory Science — B.S. (p. 80)
- Cytotechnology — B.S. (p. 83), Certificate (p. 83) (Comparison (p. 87))
- Phlebotomy — Certificate (p. 87)

Clinical Laboratory Science — B.S.

Program director
Katherine G. Davis

Clinical coordinator
Monique K. Gilbert

Medical director
Paul C. Herrmann

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 2018, 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 14 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 regionally 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. 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 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 comprises 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.

Program objectives

The Clinical Laboratory Science Program endeavors to present a complete educational experience that culminates in the 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.

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

Loma Linda University Medical Center
Murrieta, 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

Redlands Community Hospital
Redlands, 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. A special calendar schedule different from the University academic calendar is followed.

Professional certification and licensure

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

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.

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.

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 (U) in any segment of a clinical practicum is automatically placed on clinical probation. Continued enrollment for the next quarter, term, or rotation segment of a student on probation or clinical probation 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.

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; e-mail: <naaclsinfo@naacls.org>; website: <http://www.naacls.org>.

The program also satisfies the requirements in medical laboratory science of the American Society of Clinical Pathologists' Board of Certification for Medical Laboratory Science, 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; website: <http://www.cdph.ca.gov/programs/lfs/Pages/default.aspx>.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- A minimum G.P.A. of 2.75 for science is required.
- 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. Prerequisites and transfer patterns may be viewed at <llu.edu/allied-health/sahp/transfer>.
- projected course work that will be completed before beginning the program will be considered in the application process.

Application deadlines

Applications to the Clinical Laboratory Science Program are accepted beginning January 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.

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 10 quarter units from 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 LLU General Education Requirements (p. 28).

*Students planning to apply to advanced degree programs should verify current admission requirements.

Program requirements

First Year		
AHCJ 328	Wholeness Portfolio I	1
AHCJ 418	Physiology I	4
CLSM 105	Procedures in Phlebotomy	4

CLSM 303	Urine and Body Fluid Analysis I	1
CLSM 307	Medical Parasitology	3
CLSM 309	Quantitative Analysis (Chemical)	4
CLSM 321	Hematology I	4
CLSM 322	Hematology II	4
CLSM 325	Clinical Immunology	3
CLSM 327	Clinical and Pathogenic Microbiology I	5
CLSM 328	Clinical and Pathogenic Microbiology II	5
CLSM 331	Biochemistry	5
CLSM 332	Clinical Chemistry I	4
CLSM 333	Clinical Chemistry II	4
CLSM 341	Immunohematology I	3
CLSM 342	Immunohematology II	3
CLSM 396	CLS Junior Seminar	2
RELE 457	Christian Ethics and Health Care	2
RELT 423	Loma Linda Perspectives	2
Second Year		
AHCJ 498	Wholeness Portfolio II	1
CLSM 411	Urine and Body Fluid Analysis II	1
CLSM 413	Diagnostic Microbiology	6
CLSM 414	Clinical Parasitology	2
CLSM 422	Hematology III	6
CLSM 434	Clinical Chemistry III	5
CLSM 435	Immunoassay and Molecular Diagnostic Techniques	3
CLSM 442	Immunohematology III	3
CLSM 451	Clinical Laboratory Management I	2
CLSM 452	Clinical Laboratory Management II	2
CLSM 453	Clinical Laboratory Management III	2
CLSM 455	Special Procedures	4
CLSM 471	Clinical Practicum I	6
CLSM 472	Clinical Practicum II	6
CLSM 473	Clinical Practicum III	6
CLSM 496	Clinical Laboratory Science Seminar I	1
CLSM 497	Clinical Laboratory Science Seminar II	1
CLSM 498	Clinical Laboratory Science Seminar III	2
REL_ 4__	Upper-division Religion	2
REL_ 4___	Upper-division religion	2
Total Units		**126**

Normal time to complete the program

2 years (20 months) at LLU — full-time enrollment required

Cytotechnology — B.S., Certificate

Program director
Margaret A. Tavares

Medical director
Darryl G. Heustis

Medical codirector
Pamela J. Wat

Cytotechnology is a specialty within the broad field of clinical laboratory sciences. 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.

Closed to admissions

The LLU cytotechnology certificate and Bachelor of Science degree programs are unavailable for student applications for the 2014-2015 academic year in order to implement program improvements. Student applications will reopen on January 1, 2015, for the 2015-2016 academic year. For more information, please contact the Clinical Laboratory Science Department at 909/558-4966.

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 programs

The Cytotechnology Program leads either to a certificate or to a Bachelor of Science degree. The certificate program requires prior completion of a baccalaureate degree from a regionally accredited college or university while the Bachelor of Science program requires completion of two years of prerequisites at an accredited college or university. The programs of study begin in August. The certificate is awarded at the completion of twelve months of study. Those electing to continue are awarded the Bachelor of Science degree upon completion of an additional six months of study. With the certificate in cytotechnology and a baccalaureate degree, the student is eligible to take a national examination and become a registered cytotechnologist.

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.

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 test accuracy.
4. Comprehend and apply sound principles of scientific research.
5. Adhere to rules and regulations, regarding patient and workplace safety.

Clinical affiliations

Multiple clinical affiliations enrich the student's clinical training by providing exposure to different specimen types in the clinical environments. 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

Professional registration

Upon completion of the certificate curriculum (twelve continuous months of study) and the completion of a baccalaureate degree, the student is eligible to take the certifying examination given by the Board of Certification 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.

Academic progression

A minimum grade of C (2.0) is required for all courses in the program. C- grades are not acceptable. A grade of less than C in any academic course that is part of the professional program, or an Unsatisfactory in clinical performance, will be cause for academic disqualification from the program for the remaining academic year. Readmission to the program will require reapplication.

Accreditation

The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP)—1361 Park Street, Clearwater, Fl 33756, phone: 727/210-2350; fax: 727/210-2354—in collaboration with the Cytotechnology Programs Review Committee, which is sponsored by American Society of Cytopathology (ASC); American Society for Clinical Pathology (ASCP); American Society for Cytotechnology (ASCT), and the College of American Pathologists (CAP). Information regarding cytotechnology accreditation status can be obtained from the CPRC at the American Society for Cytopathology, 100 West 10th Street, Suite 605, Wilmington, DE 19801; telephone: 302/543-6583, fax: 302/543-6597; email: dmacintyre@cytopathology.org.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- 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. Please note: Grades of C- are not transferable for credit.

Application deadlines

Applications to the Cytotechnology Program are accepted beginning January 1. Early submission of application is recommended. Applications continue to be reviewed and accepted until July 1 or until program is filled. Preference will be given to applicants whose completed application and transcripts are received by March 1. The certificate curriculum begins in August and the B.S. degree curriculum begins in September.

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 LLU General Education Requirements (p. 28).

Program requirements

- Cytotechnology — Certificate (p. 86), B.S. (p. 85), Comparison (p. 87)

Cytotechnology — B.S.

First Year		
AHCJ 328	Wholeness Portfolio I	1
AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	4
CLSC 341	Gynecologic Cytology	12
CLSC 351	Respiratory Cytology	7
CLSC 353	Urinary Tract and Prostate Cytology	3
CLSC 357	Gastrointestinal Tract Cytology	2
CLSC 361	Body Cavity and Miscellaneous Secretions Cytology	8
CLSC 363	Bone Biopsy Cytology	1
CLSC 365	Breast Cytology	1
CLSC 371	Cytopreparation Techniques	3
CLSC 373	Histotechnology Techniques	1
RELE 457	Christian Ethics and Health Care	2
RELT 423	Loma Linda Perspectives	2
Second Year		
AHCJ 331	Human Resource Management	3
AHCJ 498	Wholeness Portfolio II	1
CLSC 301	Introduction to Radiographic Procedures I	2
CLSC 302	Introduction to Radiographic Procedures II	2
CLSC 367	Cytogenetics	1
CLSC 404	General Histology	5
CLSC 405	Pathology	5
CLSC 424	Hematology	3
CLSC 431	Advanced Specialties	3
CLSC 432	Current Research Techniques	3
CLSC 481	Supervised Cytology Research Project I	4
CLSC 483	Supervised Hematology Research Project	2
CLSC 491	Cytology Affiliation I	6
CLSC 492	Cytology Affiliation II	6
REL_ 4__	Upper division religion	0
Total Units		**97**

Microscope rental fees and usage-and-replacement fees are required throughout the program.

Normal time to complete the program

2 years (18 months) at LLU) — full-time enrollment required

Cytotechnology — Certificate

First Year		
AHCJ 328	Wholeness Portfolio I	1
AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	4
CLSC 341	Gynecologic Cytology	12
CLSC 351	Respiratory Cytology	7
CLSC 353	Urinary Tract and Prostate Cytology	3
CLSC 357	Gastrointestinal Tract Cytology	2
CLSC 361	Body Cavity and Miscellaneous Secretions Cytology	8
CLSC 363	Bone Biopsy Cytology	1
CLSC 365	Breast Cytology	1
CLSC 371	Cytopreparation Techniques	3
CLSC 373	Histotechnology Techniques	1
RELE 457	Christian Ethics and Health Care	2
RELT 423	Loma Linda Perspectives	2
Second Year		
CLSC 367	Cytogenetics	1
CLSC 481	Supervised Cytology Research Project I	4
CLSC 491	Cytology Affiliation I	6
CLSC 492	Cytology Affiliation II	6
REL_ 4__	Upper division religion	0
Total Units		**68**

Microscope rental fees and usage-and-replacement fees are required throughout the program.

Normal time to complete the program

4 quarters at LLU — full-time enrollment required

Cytotechnology — B.S., Certificate Comparison

First Year	Course Title	Certificate	BS
AHCJ 328	Wholeness Portfolio I	1.0	1.0
AHCJ 402	Pathology I	4.0	4.0
AHCJ 403	Pathology II	4.0	4.0
CLSC 341	Gynecologic Cytology	12.0	12.0
CLSC 351	Respiratory Cytology	7.0	7.0
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	8.0	8.0
CLSC 363	Bone Biopsy Cytology	1.0	1.0
CLSC 365	Breast Cytology	1.0	1.0
CLSC 371	Cytopreparation Techniques	3.0	3.0
CLSC 373	Histotechnology Techniques	1.0	1.0
RELE 457	Christian Ethics and Health Care	2.0	2.0
RELT 423	Loma Linda Perspectives	2.0	2.0
Totals		**51.0**	**51.0**
Second Year	**Course Title**	**Certificate**	**BS**
CLSC 367	Cytogenetics	1.0	1.0
CLSC 481	Supervised Cytology Research Project I	4.0	4.0
CLSC 491	Cytology Affiliation I	6.0	6.0
CLSC 492	Cytology Affiliation II	6.0	6.0
REL_ 4__ Upper-division Religion			
AHCJ 331	Human Resource Management		3.0
AHCJ 498	Wholeness Portfolio II		1.0
CLSC 301	Introduction to Radiographic Procedures I		2.0
CLSC 302	Introduction to Radiographic Procedures II		2.0
CLSC 404	General Histology		5.0
CLSC 405	Pathology		5.0
CLSC 424	Hematology		3.0
CLSC 431	Advanced Specialties		3.0
CLSC 432	Current Research Techniques		3.0
CLSC 483	Supervised Hematology Research Project		2.0
Totals		**17.0**	**46.0**
Overall Totals		**68.0**	**97.0**

Phlebotomy — Certificate

Program Director
Teri H. Ross

Procedures in phlebotomy is 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 provided at Loma Linda University Medical Center and other medical affiliates, allowing participants to achieve proficiency in the health-care setting.

School certificate

Students registering in this certificate program 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 University Records Office maintains a record of registration but not the certificate. Record 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.

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 West Monroe, Suite 1600, Chicago, IL 60603; telephone, 800/267-2727; Web site: <http://www.ascp.org>; or others recognized by the state of California.

Approval

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; website: <http://www.cdph.ca.gov/programs/lfs/Pages/default.aspx>.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- be 18 years of age or older
- 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.

Program requirements

Required		
AHCJ 105	Procedures in Phlebotomy	5
Total Units		**5**

Department of Communication Sciences and Disorders

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 (SLPAs) include working under the supervision of a speech-language pathologist. Although SLPAs work primarily in schools, there are also employment opportunities in hospitals and private clinics. 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 <http://www.nsslha.org>. Students are also encouraged to become student members of the California Speech-Language-Hearing Association (CSHA). Information about membership and participation in CSHA events can be found at <http://www.csha.org>.

Chair

Terry D. Douglas

Primary faculty

Melissa K. Backstrom-Gonzales

Janine G. Benner

Christina V. Bratlund

Terry D. Douglas

Karen J. Mainess

Brian D. Sharp

Jennifer St. Clair

Keith Wolgemuth

Darin Woolpert

Emeritus faculty

Jean B. Lowry

Programs

- Communication Sciences and Disorders — B.S. (p. 89), M.S. (traditional and transitional) (p. 91) (Comparison (p. 96))

Communication Sciences and Disorders — B.S.

Coordinator, clinical education
Jennifer St. Clair

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.

Full-time enrollment in the graduate program is required; therefore, one of the considerations for acceptance into the bachelor's degree program is the student's ability to manage a full load of course work. There is no option to enter the program on a part-time basis; neither will a student be allowed to change from full-time to part-time status at any time during program progression. Courses are completed sequentially—with prerequisite courses offered in a given quarter, followed by subsequent courses in a later quarter.

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 Speech-Language Pathology Assistant 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 University outcomes (p. 19).

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 and swallowing disorders.
3. Demonstrate introductory knowledge of assessment procedures for the major types of human communication and swallowing disorders.
4. Demonstrate introductory knowledge of assessment and intervention procedures for the major types of human communication and swallowing disorders.
5. Demonstrate a commitment to ethical and compassionate service.
6. Demonstrate introductory knowledge of processes used in discipline-related research.

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 AHCJ 328 Wholeness Portfolio I during the junior year and AHCJ 498 Wholeness Portfolio II 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

Students must maintain a G.P.A. of 3.0 to maintain regular standing in the program. If the student's G.P.A. drops below 3.0 by the end of an academic quarter, s/he will be placed on academic probation for the following quarter. If the student's G.P.A. does not increase to at least 3.0 by the end of that quarter, s/he will be dismissed from the program. 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).

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

Application deadline

Applications for the Bachelor of Science degree close June 1.

Prerequisites

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):

Required course work is as follows:

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.

Statistics: One course in introductory or basic statistics is required

One physical science required (must be physics or chemistry)

One biological science required (must be anatomy and/or 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 unit

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 to bring their overall course unit total to a minimum of 96 quarter units while enrolled at this University in order to meet graduation requirements.

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Program 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 Speech-Language Pathology Assistant Fieldwork (2 units), offered at Loma Linda University.

Students generally make arrangements to register for CMSD 267 Speech-Language Pathology Assistant Fieldwork in their last year of undergraduate study (senior year). Further information about SLPA registration can be obtained on the web at <http://www.speechandhearing.ca.gov>. Select "Applicants," then "SLP Assistants."

Junior Year

		Units
AHCJ 305 (Can be taken junior or senior year)	Infectious Disease and the Health-Care Provider	1
CMSD 217	Beginning Sign Language	3
CMSD 284	Introduction to Speech-Language Pathology and Audiology	3
CMSD 314	Language Analysis for Speech-Language Pathology	4
CMSD 318	Transcription Phonetics	3
CMSD 324	Language Disorders of Children	4
CMSD 334	Speech Sound Disorders in Children	4
CMSD 376	Anatomy of Speech-Hearing Mechanism	4
CMSD 388	Communication across the Lifespan	4
CMSD 426	Behavior Management Applications with Special Populations	4
CMSD 445	Techniques for ESL and Accent Modification	2
CMSD 485	Clinical Methods in Speech-Language Pathology	4
CMSD 486	Diagnostic Methods in Speech-Language Pathology	4
PSYC 460	The Exceptional Individual	3
Cognates		
AHCJ 328	Wholeness Portfolio I	1
RELE 457	Christian Ethics and Health Care	2
Choose one course		
RELT 406, 423, 436, or 437	Adventist Beliefs and Life	2-3

Senior Year

CMSD 304	Hearing Science	4
CMSD 417	Acoustic and Physiological Phonetics	4
CMSD 424	Adult Language Pathology	4
CMSD 434	Disorders of Fluency	2
CMSD 435	Voice Disorders	2
CMSD 444	Organic Speech Disorders	4
CMSD 454	Introduction to Audiology	4
CMSD 464	Introduction to Aural Rehabilitation	4
CMSD 467	Speech-Language Pathology and Audiology Practicum	1
CMSD 477	Bilingualism and Biculturalism II	2
CMSD 488	Autism Spectrum Disorders	4
Cognates		
AHCJ 471	Statistics and Research for Health Professionals I	3
AHCJ 472	Statistics and Research for Health Professionals II	3
AHCJ 498	Wholeness Portfolio II	1
RELR 4__		2-4
	Total Units:	**96-99**

Normal time to complete the program

2 years (6 academic quarters) at LLU — full-time enrollment required

Communication Sciences and Disorders — M.S.

Program director
Karen Mainess

The Master of Science degree in communication sciences and disorders offers preparation for careers in the professional practice of speech-language pathology. It provides a basis for graduate study and research at a more advanced level and encourages growth towards independence. The clinical services of the department, Loma Linda University Medical Center, and affiliated practicum sites provide opportunity for supervised clinical experiences that represent the breadth and depth of the profession in a variety of settings.

Upon completion of the Master of Science degree, graduates are eligible to:

- receive the preliminary speech-language pathology services credential (California Commission on Teacher Credentialing)
- receive the temporary license in speech-language pathology (California Department of Consumer Affairs)
- 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).

Two tracks lead to the Master of Science degree:

- Individuals who have completed a bachelor's degree in speech-language pathology or in communicative disorders may apply for admission to the two-year master's degree program. Postbaccalaureate foundational 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, foundational course work completed at California state schools where undergraduate courses in communication sciences and disorders are required is acknowledged. Prior to admission or within the first quarter of study (see Program of Study below), CBEST scores are required.

- 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 and who meet minimum requirements may apply for admission to the transitional three-year Master of Science degree curriculum.

The program

The curriculum consists of completing required graduate-level courses, supervised clinical practice, and comprehensive examinations. The traditional Master of Science degree curriculum is two years in length. Full-time students will complete the curriculum in seven quarters, including the summer between the first and the second years. Students begin the curriculum in the Autumn Quarter and go through the program as a cohort. Classes are scheduled in the late afternoon or early evening, and on one Friday per month. During the Winter Quarter and Spring Quarter of the second year, students take the full-time public school and medical fieldwork. *Note: Students may be required to go out of state for their full-time fieldwork and, therefore, should be prepared financially.

Students enrolled in the three-year transitional master's degree curriculum will begin their program in the Autumn Quarter and go through as a cohort. During the first year, students complete course work that provides the necessary foundation for the second- and third-year disorders courses and clinical practice. In the summer following the first year, all students may be required to take the clinical practicum. Beginning with the second year, the transitional master's degree students join the cohort of new students in the two-year master's degree program; and the two groups complete the remaining two years simultaneously.

The Master of Science degree curriculum in communication sciences and disorders is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA).

Any concerns about the program's compliance with accreditation standards may be submitted to: The Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA), 2200 Research Boulevard, Rockville, MD 20850; telephone: 301/897-5700 or 800/498-2071; TTY: 301/571-0481.

The curriculum is also accredited by the California Commission on Teacher Credentialing (CTC) and is approved by the California Department of Consumer Affairs' Speech-Language Pathology and Audiology and Hearing Aid Dispenser's Board (SLPAHADB).

University student learning outcomes

Students who graduate with a Master of Science degree in communication sciences and disorders will meet the University outcomes (p. 19).

Program-specific student learning outcomes

Students will also meet the following program-specific outcomes:

1. Demonstrate knowledge of human communication disorders and differences and swallowing disorders.
2. Demonstrate skill in assessment and intervention for human communication disorders and differences and swallowing disorders.
3. Demonstrate knowledge of the role of the school-based speech-language pathologist.
4. Demonstrate knowledge of processes used in discipline-related research.
5. Demonstrate knowledge of counseling principles and practices applied to the practice of speech-language pathology with diverse populations and across the lifespan.

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 <http://www.cbest.nesinc.com/>.

Praxis examination

The Praxis (administered by a national testing service) is a multiple choice examination 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. A passing score of 600 must be achieved, and the test may be taken multiple times. Information about the Praxis may be obtained by going to <http://www.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. The department provides a preparation workbook, which all students are required to review prior to taking the examination.

Remediation

Alumni and graduate students who do not achieve a passing score on the Praxis 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 the clinical courses CMSD 567 Clinical Practice in Speech-Language Pathology and Audiology, Advanced, CMSD 586 Educational Fieldwork I, CMSD 588 Educational Fieldwork II, CMSD 596 Medical Fieldwork I, or CMSD 597 Medical Fieldwork II will be required to repeat the clinical experience and to register for CMSD 589 Remediation/Advanced Directed Teaching and/or CMSD 599 Remediation/Externship, 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. In addition, each cohort meets with the graduate advisor: as a group, twice yearly; individually, at least once a year; and on an as-needed basis.

Accreditation

The Master of Science degree curriculum in communication sciences and disorders is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA).

Any concerns about the program's compliance with accreditation standards may be submitted to: The Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA), 2200 Research Boulevard, Rockville, MD 20850; telephone: 301/897-5700 or 800/498-2071; TTY: 301/571-0481.

The curriculum is also accredited by the California Commission on Teacher Credentialing (CTC) and is approved by the California Department of Consumer Affairs' Speech-Language Pathology and Audiology and Hearing Aid Dispenser's Board (SLPAHADB).

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

Acceptable undergraduate preparation includes a bachelor's degree in speech-language pathology or in communicative disorders. Postbaccalaureate foundational 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, foundational course work completed at California state schools where undergraduate courses in communication sciences and disorders are required is acknowledged. Prior to admission or within the first quarter of study (see Program of Study below), CBEST scores are required.

The admissions committee considers the following qualifications in making admission decisions: personal statement or writing sample, overall G.P.A., G.P.A. for last 96 quarter units, professional potential, personal interview, on-site writing sample, and letters of recommendation.

Regular admission may be granted to applicants who (1) submit a literate personal statement that addresses professional motivation and reasons for selecting Loma Linda University; (2) complete a writing sample that demonstrates appropriate grammar, style, and critical thinking; (3) submit three letters of recommendation (preferably academic); (4) demonstrate professional potential and present well during the interview; (5) have no undergraduate deficiencies; and (6) meet the scholarship requirements for admission (minimum G.P.A. of 3.3). *Note: The required minimum G.P.A. for consideration is 3.3; however, this is not a guarantee of admission.

Alternate status may be granted to qualified applicants who are not accepted in the first round of selection.

Denial of admission indicates that the applicant did not meet one or more of the admission requirements, that the application was incomplete, or that the application deadline was not met.

Application deadlines

Online applications open October 1. Applications close December 15 for the two-year master's and on March 1 for the three-year transitional master's.

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.

Programs

- Communication Sciences - M.S. (p. 93)
- Communication Sciences - M.S. (Transitional) (p. 94)
- Communication Sciences - Comparison (p. 96)

Communication Sciences — M.S.

Students who have been accepted into the Master of Science degree curriculum in communication sciences and disorders 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 to courses, degree requirements include:

1. A minimum of one quarter in residence as a graduate student.
2. Minimum G.P.A. of B (3.0), with no course grade below C (2.0).
3. Religion (3 units minimum).
4. Completion of the California Basic Education Skills Test (CBEST).

First Year

		Units
CMSD 511	Graduate Portfolio I	2
CMSD 523	Seminar in Early Childhood Language Disorders	3
CMSD 525	Seminar in School-Aged Child Language Disorders	3
CMSD 554	Swallowing Disorders	3
CMSD 567	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	1
CMSD 575	Instrumentation in Speech and Hearing	1
CMSD 586	Educational Fieldwork I	1
CMSD 596	Medical Fieldwork I	1
CMSD 598	Research Methods and Professional Literature in Communication Sciences and Disorders	3

CMSD 679	Seminar: Motor Speech Disorders/Augmentative Communication	3
CMSD 682	Seminar: Traumatic Brain Injury	3
CMSD 684	Seminar: Adult Language Disorders	3
CMSD 685	Seminar: Stuttering	3
CMSD 688	Seminar: Speech Sound Disorders - Advanced	3
Second Year		
CMSD 567, 586, or 596[1]	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	1
CMSD 512	Graduate Portfolio II	1
CMSD 535	Voice Disorders	3
CMSD 545	Issues in School Speech-Language Pathology	3
CMSD 564	Seminar: Aural Rehabilitation and Cochlear Implants/Hearing Aids	3
CMSD 576	Instrumentation II	1
CMSD 587	Counseling in Communication Disorders	3
CMSD 588	Educational Fieldwork II	8
CMSD 597	Medical Fieldwork II	8
CMSD 687[2]	Seminar: Open Seminar	4
CMSD 697	Research	1
REL_ 5__		3
	Total Units:	**72**

1 Choose one course

2 One unit each time seminar is taken

Normal time to complete the program

2 years (7 academic quarters) — full-time enrollment required

Communication Sciences — M.S. (Transitional)

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 to courses, degree requirements include:

1. A minimum of one quarter in residence as a graduate student.
2. Minimum G.P.A. of 3.3 for foundational course work during the first year.
3. Minimum G.P.A. of B (3.0), with no course grade below C (2.0), for years 2 and 3 of the master's degree program; a minimum of 45 quarter units of foundational courses, including the following completed during the first year.
4. Religion (3 units minimum).
5. Completion of the California Basic Education Skills Test (CBEST).

Transitional Year		
		Units
CMSD 514	Anatomy of Speech-Hearing Mechanism	4
CMSD 515	Transcription Phonetics	3
CMSD 520	Communication across the Lifespan	4
CMSD 521	Language Disorders of Children	4
CMSD 522	Organic Speech Disorders	4
CMSD 529	Adult Language Pathology	4
CMSD 533	Language Analysis for Speech-Language Pathology	4
CMSD 534	Speech Sound Disorders in Children	4
CMSD 537	Clinical Methods in Speech-Language Pathology	4
CMSD 538	Diagnostic Methods in Speech-Language Pathology	4
CMSD 539	Introduction to Audiology	4
CMSD 577	Bilingualism and Biculturalism II	2
First Year		
CMSD 511	Graduate Portfolio I	2
CMSD 523	Seminar in Early Childhood Language Disorders	3
CMSD 525	Seminar in School-Aged Child Language Disorders	3
CMSD 554	Swallowing Disorders	3
CMSD 567	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	2
CMSD 575	Instrumentation in Speech and Hearing	1
CMSD 586	Educational Fieldwork I	1
CMSD 596	Medical Fieldwork I	1
CMSD 598	Research Methods and Professional Literature in Communication Sciences and Disorders	3
CMSD 679	Seminar: Motor Speech Disorders/Augmentative Communication	3
CMSD 682	Seminar: Traumatic Brain Injury	3
CMSD 684	Seminar: Adult Language Disorders	3
CMSD 685	Seminar: Stuttering	3
CMSD 688	Seminar: Speech Sound Disorders - Advanced	3
Second Year		
CMSD 567, 586, or 596[1]	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	1
CMSD 512	Graduate Portfolio II	1
CMSD 535	Voice Disorders	3
CMSD 545	Issues in School Speech-Language Pathology	3
CMSD 564	Seminar: Aural Rehabilitation and Cochlear Implants/Hearing Aids	3
CMSD 576	Instrumentation II	1
CMSD 587	Counseling in Communication Disorders	3
CMSD 588	Educational Fieldwork II	8
CMSD 597	Medical Fieldwork II	8
CMSD 687[2]	Seminar: Open Seminar	4
CMSD 697	Research	1
REL_ 5__ (Graduate-level religion elective)		3
	Total Units:	**118**

[1] Choose one course

[2] One unit each time seminar is taken

Normal time to complete the program

3 years (11 academic quarters) — full-time enrollment required

Communication Sciences — M.S., M.S. (Transitional) Comparison

Transitional Year	Course Title	MS (Transitional)	MS
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	Speech Sound Disorders in Children	4.0	
CMSD 537	Clinical Methods in Speech-Language Pathology	4.0	
CMSD 538	Diagnostic Methods in Speech-Language Pathology	4.0	
CMSD 539	Introduction to Audiology	4.0	
CMSD 577	Bilingualism and Biculturalism II	2.0	
Totals		**45.0**	
Master's First Year	**Course Title**	**MS (Transitional)**	**MS**
CMSD 567	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	2.0	1.0
CMSD 511	Graduate Portfolio I	2.0	2.0
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 575	Instrumentation in Speech and Hearing	1.0	1.0
CMSD 586	Educational Fieldwork I	1.0	1.0
CMSD 596	Medical Fieldwork I	1.0	1.0
CMSD 598	Research Methods and Professional Literature in Communication Sciences and Disorders	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: Speech Sound Disorders - Advanced	3.0	3.0
Totals		**34.0**	**33.0**
Master's Second Year	**Course Title**	**MS (Transitional)**	**MS**
Choose from the following:		1.0	1.0
CMSD 567	Clinical Practice in Speech-Language Pathology and Audiology, Advanced		
CMSD 586	Educational Fieldwork I		
CMSD 596	Medical Fieldwork I		
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	Seminar: Aural Rehabilitation and Cochlear Implants/Hearing Aids	3.0	3.0
CMSD 576	Instrumentation II	1.0	1.0
CMSD 587	Counseling in Communication Disorders	3.0	3.0
CMSD 588	Educational Fieldwork II	8.0	8.0
CMSD 597	Medical Fieldwork II	8.0	8.0
CMSD 687	Seminar: Open Seminar (One unit each time seminar is taken)	4.0	4.0
CMSD 697	Research	1.0	1.0
REL_ 5__		3.0	3.0
Totals		**39.0**	**39.0**
Overall Totals		**118.0**	**72.0**

Department of Health Informatics and Information Management

Health informatics and information management (HIIM) professionals provide the leadership necessary to provide quality information that supports clinical and nonclinical decision making in real time to the health-care industry. Transforming data into health intelligence, while governing and respecting the privacy rights of patients and providers, is a challenge all health-care delivery systems face. The profession aims to improve patients' experiences with respect to quality and satisfaction, to improve the health of populations, and to improve the per capita costs of health care. Professionals trained in HIIM possess the necessary leadership, as well as the technological, administrative, legislative, analytical, and decision-making skill sets to ensure a competent workforce to the health-care industry.

Chair

Debra L. Hamada

Primary faculty

Pauline J. Calla

Kimberly A. Caraig

Jere E. Chrispens

Marilyn H. Davidian

Jennifer L. Guerrero

Debra L. Hamada

Diana S. Medal

Brenda Muniz Taylor

Linda M. Palmer

Terri L. Rouse

Audrey J. Shaffer

Douglas F. Welebir

Associated faculty

Noha S. Daher

Intithar S. Elias

Rodney Roath

Programs

- Coding Specialist — Certificate (p. 97)
- Health Informatics — M.S. (p. 98)
- Health Information Administration — B.S. (p. 99), Certificate (p. 99)

Coding Specialist — Certificate

Program director
Braden Tabisula

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-10 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—HLCS 961 Coding Practicum I and HLCS 962 Coding Practicum 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.

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-10, 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.

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.

Special course work/credit

Credit for life experience may be offered through waiver or equivalency examination.

Approval

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).

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirement:

- high school graduation/GED

Program requirements

Corequisite

The following prerequisites/courses must be completed at an accredited college or university:

- Human anatomy and physiology (must be completed before Summer Quarter of first year)
- Medical terminology
- Introduction to computer applications (must be completed before HLCS 961 Coding Practicum I)
- Essentials of human diseases (must be completed before Fall Quarter of second year)

Required

HLCS 236	Pharmacology	3
HLCS 239	Introduction to Health Records Science	3
HLCS 242	Coding I	4
HLCS 243	Coding II	4
HLCS 245	Coding III	4
HLCS 254	Evaluation and Management Coding for Billing and Reimbursement	3
HLCS 257	Coding Special Topics	3
HLCS 291	Computer Applications in Health Care I	1
HLCS 292	Computer Applications in Health Care II	1
HLCS 961	Coding Practicum I	2
HLCS 962	Coding Practicum II	2
RELE 457	Christian Ethics and Health Care	2
Total Units		**32**

A minimum grade of C (2.0) is required for all courses in the program.

Normal time to complete the program

2.5 years based on less than half-time enrollment

Health Informatics — M.S.

Program director
Debra L. Hamada

Advisory committee
Chris Albini, chair
Pauline Calla
Kirk Campbell
Kent Chow
Jere Chrispens
Elisa Cortez
Marilyn Davidian
Debra L. Hamada
David P. Harris
Joyce Hopp
Craig Jackson
Art Kroetz
Jennifer Miller
Rodney Roath
Richard Swafford
Braden Tabisula
Steve Vodhanel
David Wren
Mark Zirkelbach

The dynamics within the health-care industry are creating an information-intensive environment that professionals must navigate as they deliver health care to patients. Clinical and nonclinical professions in this industry will be required to be knowledgeable and proficient in the development and use of information technology. The future success or failure of health-care organizations will be predicated on their abilities to effectively and efficiently manage the valuable asset of information. This curriculum blends the topics of leadership, system theory and management, technology, data management, and regulatory constraints in order to prepare graduates for critical leadership roles in health-care organizations. As informatics leaders, graduates will assist in developing information systems in health care that positively impact patient care at individual, local, and national levels.

Opportunities

As the health-care industry develops under vastly expanding regulatory mandates, there is a need for information systems that will meet the needs of all stakeholders. The demand for informatics professionals is steadily increasing as health-care organizations look for greater numbers of skilled workers. There is a projected need for more than 50,000 new information technology workers in the coming years. Health informatics professionals 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.

Student learning outcomes

Outcome 1	Students will demonstrate competence in information systems, specifically information system analysis, design, implementation, and management.
Outcome 2	Students will demonstrate a keen understanding of informatics with respect to structure, function, and transfer of information; sociotechnical aspects of health computing; and human computer interaction.
Outcome 3	Students will demonstrate a thorough understanding of information technology, including but not limited to computer networks, databases and system administration, security, and programming.
Outcome 4	Students will demonstrate the ability to effectively communicate verbally and in writing.
Outcome 5	Students will demonstrate the ability to facilitate successful project management.

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

Admissions

In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

Admission requirements

- Provide evidence of completion of a bachelor's degree from an accredited U.S. college or university or the foreign equivalent of a bachelor's degree
- Provide three letters of recommendation that indicate a strong academic background and professional readiness
- Interview, if deemed necessary
- Minimum G.P.A. of 3.0. The Graduate Record Examination (GRE) may be requested and considered for G.P.A.s less than 3.0.

Program requirements

Required		
AHCJ 555	Writing for Health-Care Professionals	3
HLIF 510	Health-Care Information Systems	4
HLIF 515	The U.S. Health-Care System	3
HLIF 520	Data Management: Modeling and Development	3
HLIF 525	Management of Data and Information	3
HLIF 530	Data Analytics and Decision Support	3
HLIF 532	Financial Management in Health Care	2
HLIF 540	Leadership Perspectives and Practice	3
HLIF 545	System Design, Implementation and Management	3
HLIF 555	Health-care Vendor and Project Management	2
HLIF 560	Policy Development for Privacy and Security in Health Care Systems	3
HLIF 565	Technical Structures in Health Informatics	3
HLIF 570	Professional Portfolio	2
HLIF 574	Capstone I: Project and Special Topics in Health Informatics	1
HLIF 575	Capstone II: Project and Special Topics in Health Informatics	2
HLIF 580	Health-Care Policy	2
RELT 563	Health Care, Humanity, and God	3
Total Units		**45**

Noncourse requirements

An LLU G.P.A. of 3.0 must be maintained throughout the program.

A minimum grade of C (2.0) is required for all courses in the program.

Normal time to complete the program

2 years (7 academic quarters) based on three-quarter-time enrollment

Health Information Administration — B.S., Certificate

Program director
Debra L. Hamada

Clinical coordinator, recruitment coordinator
Pauline Cally

Advisory committee
Felicia Chao
Deborah Critchfield
Sue Dowis, chair
Cynthia Doyon
Cynthia Giltner
Craig Jackson, ex officio
Margaret Jackson
Arthur Kroetz
Beena Nair
Brenda Taylor

The health information administrator (HIA) manages health information systems that serve the needs of patients, the health-care team, and the administration staff. Health information administrators have opportunities to assist in the development and implementation of health information systems for quality patient care, financial reimbursement, medical research, health-care planning, and health-care quality evaluation. Other responsibilities include privacy, security, and data governance.

Health information management has assumed increased importance with the advent of prospective payment, health-care privacy legislation, corporate compliance, and the electronic health record. It is an excellent career choice for the person who would like to have a profession in health care that combines interests in computer science, business, management, informatics, law, and medicine. This unique mixture provides the HIA with great opportunities in a variety of different settings and job titles along with substantial income.

One of the many career options chosen by HIAs is the management of a health information department. In this position, managers evaluate and motivate employees, provide leadership in department planning and organizing, determine department policies, and budget department resources. Managers are also involved in decision making and health-care committees.

The health information 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.

The health information administration curriculum is offered in two pathways:

1. Bachelor's degree completion program
2. Postbaccalaureate degree certificate program (for applicants already holding a bachelor's degree).

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.

Opportunities

Health information administration provides job flexibility for the person seeking work in a variety of settings. Many are employed by hospitals and medical centers in large urban areas. Others work in small community hospitals in rural settings.

The job market is rapidly expanding outside of hospitals. New openings are available in home health agencies, long-term care facilities, outpatient care, mental health facilities, private medical practices and clinics, insurance companies, health management organizations, commercial and industrial firms, government agencies, legal offices, software vendors, and education.

Job positions include, but are not limited to: director of HIM, privacy officer, security officer, chief compliance officer, EHR implementation specialist, data application or system analyst, data integrity analyst, consultant, cancer registrar, medical office administrator, HIM revenue cycle auditor, revenue cycle manager, REC/HIE exchange director, meaningful use specialist, data quality manager, documentation and coding specialist, and coding manager.

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.

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 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 either the B.S. degree or the certificate, 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).

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.

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.

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.

Admission

In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

Health Information Administration—Certificate

To be eligible for admission, the applicant must have a bachelor's degree from an accredited college or university.

Prerequisites

Human anatomy and physiology with laboratory, complete sequence—concurrent with first quarter
Medical terminology
College algebra (intermediate algebra acceptable) or two years of high school algebra
General psychology
Accounting
Introduction to computer applications (must include word processing)
Personnel management
Business communications

Recommended

Speech

Health Information Administration—B.S.

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

Intermediate algebra (or two years of high school equivalent)

Choose one additional course from: sociology, economics, geography, political science

Domain 3: Communication (9-13 quarter units)

English composition, complete sequence

Introduction to computers (must include word processing)

Business communications

Domain 4: Health and wellness (2-6 quarter units)

Personal health or nutrition

Two physical activity courses

Other

Introductory accounting (one quarter or semester)

Medical terminology

Electives to meet the minimum total requirement of 96 quarter units

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Programs

- Health Information Administration — B.S. (p. 101), Certificate (p. 102)

Health Information Administration — B.S.

Junior Year

		Units
AHCJ 325	U. S. Health-Care Delivery System	2
AHCJ 328	Wholeness Portfolio I	1
AHCJ 331	Human Resource Management	3
AHCJ 351	Statistics for the Health Professions	3
AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
HLIN 301	Introduction to Health Data Management	5
HLIN 303	Basic Coding Principles and Techniques I	3
HLIN 304	Basic Coding Principles and Techniques II	3
HLIN 308	Introduction to Data Analytics	3
HLIN 325	Pharmacology for Health Information Administration	2
HLIN 361	Professional Practice Experience I	1
HLIN 362	Health Information Administration Laboratory II	1
HLIN 365	Professional Practice Experience III	1
HLIN 441	Legal Aspects of Health Information Administration I	2
HLIN 442	Legal Aspects of Health Information Administration II	3
HLIN 483	Long-Term and Alternative Delivery Systems in Health Care	4
HLIN 493	Health Information Management I	4
HLIN 496	Project Management	1
REL_ 4__	Upper-division religion elective	2

Senior Year

AHCJ 432	Database Management	3
AHCJ 498	Wholeness Portfolio II	1
HLIN 401	Survey of Health Systems Management	4
HLIN 404	Clinical Terminologies, Taxonomies and Nomenclatures	2
HLIN 407	Financial Management for Health Information Management	2

HLIN 421	Survey of Health Systems Management--Applied	5
HLIN 444	Corporate Compliance in Health Care	3
HLIN 445	Coding Seminar	3
HLIN 451	Quality Improvement in Health Care	3
HLIN 462	Health Information Administration Laboratory III	1
HLIN 463	Health Information Administration Laboratory IV	1
HLIN 475	Research Methods in Health Information Management	3
HLIN 484	Current Topics in Health Information Administration	3
HLIN 494	Health Information Management II	5
HLIN 495	Professional Practice Experience Senior Affiliation	3
RELE 457	Christian Ethics and Health Care	2-3
RELT 423, 406, 436, or 437 (Choose one course)	Loma Linda Perspectives	2-3
	Total Units:	**98**

A minimum grade of C (2.0) is required for all courses in the program.

An LLU G.P.A. of 2.5 must be maintained throughout the program. A minimum of 50 units is required for completion.

Normal time to complete the program

2 years (7 academic quarters) at LLU

Heath Information Administration — Certificate

Junior Year

		Units
AHCJ 325	U. S. Health-Care Delivery System	2
AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
HLIN 301	Introduction to Health Data Management	5
HLIN 303	Basic Coding Principles and Techniques I	3
HLIN 304	Basic Coding Principles and Techniques II	3
HLIN 308	Introduction to Data Analytics	3
HLIN 325	Pharmacology for Health Information Administration	2
HLIN 361	Professional Practice Experience I	1
HLIN 362	Health Information Administration Laboratory II	1
HLIN 365	Professional Practice Experience III	1
HLIN 441	Legal Aspects of Health Information Administration I	2
HLIN 442	Legal Aspects of Health Information Administration II	3
HLIN 483	Long-Term and Alternative Delivery Systems in Health Care	4
HLIN 493	Health Information Management I	4
HLIN 496	Project Management	1
Senior Year		
AHCJ 432	Database Management	3
HLIN 401	Survey of Health Systems Management	4
HLIN 404	Clinical Terminologies, Taxonomies and Nomenclatures	2
HLIN 407	Financial Management for Health Information Management	2
HLIN 421	Survey of Health Systems Management--Applied	5
HLIN 444	Corporate Compliance in Health Care	3
HLIN 445	Coding Seminar	3
HLIN 451	Quality Improvement in Health Care	3
HLIN 462	Health Information Administration Laboratory III	1
HLIN 463	Health Information Administration Laboratory IV	1
HLIN 475	Research Methods in Health Information Management	3
HLIN 484	Current Topics in Health Information Administration	3
HLIN 494	Health Information Management II	5
HLIN 495	Professional Practice Experience Senior Affiliation	3
RELE 457	Christian Ethics and Health Care	2-3
	Total Units:	**85**

A minimum grade of C (2.0) is required for all courses in the program.

An LLU G.P.A. of 2.5 must be maintained throughout the program. A minimum of 50 units is required for completion.

Normal time to complete the program

2 years (7 academic quarters) at LLU

Department of Nutrition and Dietetics

The Department of Nutrition and Dietetics offers degree programs that lead to professional careers. Graduates are employed as clinical dietitians in hospitals and as directors of health-care and school food service facilities; and some own private practices, offering consulting services to long-term care facilities, sports teams, etc. The classroom-based Coordinated Programs (BS and MS) that lead to RD/RDN (registered dietitian/registered dietitian nutritionist) eligibility are accredited by the Academy of Nutrition and Dietetics' Accreditation Council for Education in Nutrition and Dietetics. As a coordinated program, both didactic course work and 1200 hours of supervised practice are included in the curriculum. Two master's degree-level degrees (online or classroom-based) are offered for dietitians with bachelor's degrees who want to further their education.

Chair

Cindy Kosch

Associate chair

Georgia Hodgkin

Primary faculty

Cory Gheen

Georgia W. Hodgkin

Martina I. Karunia

Cindy Kosch

JeJe Noval

Louise E. Schneider

Kyndra J. Woosley

Clinical faculty

Adleit F. Asi

Margie I. Carson

Vivien Choi

Barbara Dickinson

Ruby Hayasaka

Inherla H. Hernando-Rivera

Susan Lewis

Marijane McTalley

Leann Onasch

M. Elizabeth Quigley

Maryellen Westerberg

Linda Whiting

Pamela Yong

Associated faculty

Ella Haddad

Sujatha Rajaram

Ronald Rea

Programs

- Nutrition and Dietetics — M.S. (Prior R.D.) (p. 103)
- Nutrition and Dietetics (Coordinated Programs) — B.S. (p. 107), B.S. and M.S (p. 108)., M.S. (Prior B.S.) (p. 106), M.S. (DPD) (p. 105), (Comparison (p. 109))
- Nutrition Care Management — M.S. (p. 110)

Nutrition and Dietetics (Prior RD) — MS

This program is one year (4 quarters) and begins every Summer Quarter. A research project requirement is included in the curriculum.

Opportunities for a registered dietitian who has completed a master's degree are enhanced by the additional education at the graduate level. By 2024, a master's degree will be required for entry-level employment.

The curriculum is identical to the third year of the Nutrition and Dietetics—Coordinated Program in Dietetics, B.S. and M.S.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Be a registered dietitian
- Have a 3.0 or above G.P.A.
- Complete an interview (by phone or in person)

Program requirements

Graduate Year

		Units
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHCJ 601	Research Proposal Writing	3
DTCS 526	Pharmacology in Medical Nutrition Therapy	2
DTCS 574	Advanced Food Systems Management	3
DTCS 589	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 504	Nutritional Metabolism	5
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1

REL_ 5__	3
____ Graduate-level elective	3
Total Units:	**48**

Normal time to complete the program

1 year (4 academic quarters) at LLU based on full-time enrollment

Nutrition and Dietetics — Coordinated Programs

Advisory committee

Adleit Asi
Betsy Cline
Bertrum Connell
Georgia Hodgkin
Craig Jackson *
Adrine Kaloshian
Cindy Kosch
Takkin Lo
James Lumsden, Chair
Arthur Marshak
Merijane McTalley
JeJe Noval
Tricia Pennicook *
Jerome Rafoth
Paula de Silva
Michael Walters
Patty Watts
Ralph Watts
Maryellen Westerberg
Grennith 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.

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 (described in the Nutrition Program of the School of Public Health section of the CATALOG)

Each of these degrees culminates in eligibility to take the registration examination for dietitians.The student obtains the credential in dietetics upon successful completion of the registration examination offered by the Commission on Dietetic Registration of the Academy of Nutrition and Dietetics. The coordinated program in dietetics combines didactic and supervised professional practice experiences to develop professional competencies concurrently with cognitive and technical skills that enable the graduate to establish eligibility to become a registered dietitian.

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 a health-science liberal arts environment 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 clinical settings.

Four choices are available to earn a Master of Science degree in nutrition and dietetics at Loma Linda University.

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. 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 dietitian in administration 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. Opportunities 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.

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 Academy of Nutrition and Dietetics. The association grants student membership at a nominal rate to students in accredited programs.

The national office of the Academy of Nutrition and Dietetics is at 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995. Along with membership in the Academy of Nutrition and Dietetics, 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

SAHP Program Goal 1

The program will prepare students to be competent graduates who are eligible to write the registration examination for dietitians to become entry-level practitioners.

SAHP Program Objectives for Goal 1

1. 80% of graduates who write the registration examination for dietitians will pass within the first year.
2. 80% of students who enter the B.S., M.P.H. or M.S. degree program will complete program/degree requirements within 150% of the program length.

SAHP Program Goal 2

Provide professionally trained registered dietitians with either an emphasis in medical nutrition therapy or public health nutrition who may be employed by or contribute to the health care and educational systems of the Seventh-day Adventist Church; or local, national, or international entities.

SAHP Program Objectives for Goal 2

1. 70% or more of coordinated program graduates who seek employment in dietetics will be employed within twelve months of program completion.*
2. 60% of coordinated program graduates will contribute to the community and/or provide professional leadership in the field of dietetics within five years of graduation.

   Students admitted into the B.S. + M.S. degree in nutrition and dietetics program satisfy CP requirements when the B.S. degree is completed. They continue their graduate education and do not typically seek employment until conclusion of the M.S. degree.

Accreditation

The coordinated program in dietetics is currently granted continuing accreditation by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312/899-5400. website: <http://www.eatright.org/cade>; fax: 312/899-4817.

Programs

- Nutrition and Dietetics — B.S. (p. 107), B.S./M.S. (p. 108), M.S. (Prior B.S.) (p. 106), M.S. (DPD) (p. 105), Comparison (p. 109)

Nutrition and Dietetics (DPD) — M.S.

The M.S. degree for graduates of didactic programs in dietetics (DPD) is specifically designed for those 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 to become a registered dietitian. This curriculum builds upon didactic course work in nutrition and dietetics and culminates with an M.S. degree and a verification statement covering both didactic and supervised practice requirements.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- have a 3.0 G.P.A. or above (science and nonscience)
- complete an interview (by telephone or in person)
- complete program prerequisites
- provide a DPD verification statement (or equivalent if international)

Prerequisites

- College algebra or above, or two years high school algebra
- Anatomy and physiology with laboratory, complete sequence (two terms)
- General chemistry with laboratory (two quarters or one semester)
- Microbiology with laboratory
- College algebra or above, or two years high school algebra
- Anatomy and physiology with laboratory, complete sequence
- General chemistry with laboratory (two quarters or one semester)
- Microbiology with laboratory

Program requirements

Junior Year

		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1

Graduate Year

AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHCJ 571	Statistics and Research for Health Professionals I	3
AHCJ 572	Statistics and Research for Health Professionals II	3
AHCJ 601	Research Proposal Writing	3
DTCS 506	Professional Seminar in Nutrition and Dietetics	1
DTCS 526	Pharmacology in Medical Nutrition Therapy	2
DTCS 545	Nutrition Care Management	4
DTCS 554	Advanced Medical Nutrition Therapy	3
DTCS 574	Advanced Food Systems Management	3
DTCS 576	Exercise Physiology in Medical Nutrition Therapy	3
DTCS 589	Capstone Course in Nutrition and Dietetics	3

DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 504	Nutritional Metabolism	5
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
RELE 5__ Graduate-level ethics course		3
Affiliation and practicum		
Affiliation and practicum units do not count toward minimum graduate units required for the degree.		
DTCS 795	Nutrition and Dietetics Graduate Practicum	(12)
DTCS 778	Clinical Nutrition Affiliation	(24)
	Total Units:	**63**

Normal time to complete the program

2.33 years (8 academic quarters) at LLU — based on full-time enrollment; part time permitted

Nutrition and Dietetics (Prior B.S.) — M.S.

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. Program completion establishes eligibility to write the registration examination for dietitians and become a registered dietitian. Listed below are the required admission and prerequisite requirements to obtain a master's degree from Loma Linda University.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- have a 3.0 G.P.A. or above (science and non-science)
- complete an interview (by telephone or in person)
- complete program prerequisites

Prerequisites

- College algebra or above, or two years high school algebra
- Anatomy and physiology with laboratory, complete sequence (2 terms)
- General chemistry with laboratory (two quarters or one semester) [Note: Full-sequence (2 semester/3 quarters) required for students applying for Autumn 2016 and beyond.]
- Microbiology with laboratory
- Human nutrition

Program requirements

Junior Year

		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1
AHCJ 329	Organic Chemistry with Laboratory	5
AHCJ 334	Biochemistry	4
DTCS 302	Food Selection and Presentation	5
DTCS 304	Community Nutrition	4
DTCS 305	Professional Issues in Nutrition and Dietetics	1
DTCS 321	Nutrition and Human Metabolism	4
DTCS 341	Introduction to Clinical Nutrition	5
DTCS 342	Medical Nutrition Therapy I	5
DTCS 343	Medical Nutrition Therapy II	5
DTCS 371	Quantity Food Purchasing, Production, and Service	5
DTCS 372	Food Systems Organization and Management	4

Graduate Year

AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHCJ 571	Statistics and Research for Health Professionals I	3
AHCJ 572	Statistics and Research for Health Professionals II	3
AHCJ 601	Research Proposal Writing	3
DTCS 506	Professional Seminar in Nutrition and Dietetics	1
DTCS 526	Pharmacology in Medical Nutrition Therapy	2
DTCS 545	Nutrition Care Management	4
DTCS 554	Advanced Medical Nutrition Therapy	3
DTCS 566	Food Chemistry and Experimental Foods	4
DTCS 574	Advanced Food Systems Management	3
DTCS 576	Exercise Physiology in Medical Nutrition Therapy	3
DTCS 589	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 504	Nutritional Metabolism	5
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 526	Nutrition Counseling and Education	2
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
RELE 5__ Graduate-level Ethics		3
Affiliation and practicum:[1]		
DTCS 795	Nutrition and Dietetics Graduate Practicum	12
DTCS 778	Clinical Nutrition Affiliation	12
	Total Units:	**116**

[1] Affiliation and practicum units do not count toward minimum didactic units required for the degree.

Normal time to complete the program

1 year (3 academic quarters) of undergraduate preparatory work plus 2 years (8 academic quarters) of graduate course work at LLU — based on full-time enrollment; part time permitted

Nutrition and 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 Academy of Nutrition and Dietetics. The B.S. degree curriculum comprises didactic and supervised professional practice experiences in a health science and liberal arts 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 2014-2015 academic year.

The seven-quarter professional curriculum includes theory, laboratory, 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 clinical and community settings. Administrative affiliation experiences involve decision-making assignments in volume feeding operations in school food service or health care.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- have a G.P.A. of 3.0 or above (science and non-science)
- complete an interview (by phone or in person)
- complete program prerequisites

Listed below are the required admission and prerequisite requirements to obtain a bachelor's degree from Loma Linda University.

Prerequisites

Humanities	
20 quarter units minimum	20
Select a minimum of three areas of the following: 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 (1 unit for every 12 units of course work taken at a Seventh-day Adventist institution).	
Natural Sciences	
12 quarter units minimum	12
College algebra or above, or two years high school algebra	
Anatomy and physiology with laboratory, complete sequence (2 terms)	
General chemistry with laboratory (two quarters or one semester) [Note: Full-sequence (2 semester/3 quarters) required for students applying for Autumn 2016 and beyond.]	
Microbiology with laboratory	
Social Sciences	
12 quarter units minimum	12
Psychology elective (one course minimum)	
Sociology elective (one course minimum)	
Communication	
9 quarter units minimum	9
English composition, complete sequence	
Speech	
Health and Wellness	
2 quarter units minimum	2
Two physical activity courses	
Human nutrition	
Total Units	**55**

Total minimum units required: 96 quarter units (64 semester units)

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Program requirements

Junior Year

		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1
AHCJ 329	Organic Chemistry with Laboratory	5
AHCJ 334	Biochemistry	4
DTCS 302	Food Selection and Presentation	5
DTCS 304	Community Nutrition	4
DTCS 305	Professional Issues in Nutrition and Dietetics	1
DTCS 321	Nutrition and Human Metabolism	4
DTCS 341	Introduction to Clinical Nutrition	5
DTCS 342	Medical Nutrition Therapy I	5
DTCS 343	Medical Nutrition Therapy II	5
DTCS 371	Quantity Food Purchasing, Production, and Service	5
DTCS 372	Food Systems Organization and Management	4
RELE 457	Christian Ethics and Health Care	3
Senior Year		
AHCJ 407	Financial Management	2
AHCJ 471	Statistics and Research for Health Professionals I	3
AHCJ 472	Statistics and Research for Health Professionals II	3
DTCS 395	Nutrition and Dietetics Practicum	12
DTCS 405	Senior Seminar	1
DTCS 442	Nutrition Counseling	3
DTCS 445	Nutrition Care Management	4
DTCS 452	Advanced Nutrition	4
DTCS 453	Advanced Medical Nutrition Therapy	3
DTCS 461	Food Science	4
DTCS 473	Medical Nutrition-Therapy Affiliation	12
DTCS 476	Exercise Physiology in Medical-Nutrition Therapy	3
REL_ 4__	Upper-division Religion	3
RELT 436	Adventist Heritage and Health	2
	Total Units:	**110**

Normal time to complete the program

2 years [7 academic quarters] at LLU) — based on full-time enrollment; part time permitted

Nutrition and 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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- have a 3.0 G.P.A. or above (science and non-science)
- complete an interview (by telephone or in person)
- complete program prerequisites

See course listing for B.S. degree prerequisites (p. 107). Total minimum units required upon entrance: 96 quarter units (64 semester units).

Program requirements

For total unit requirements for graduation for the B.S. degree, see Division of General Studies, LLU General Education Requirements (p. 28) (Section II).

Junior Year

		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1
AHCJ 329	Organic Chemistry with Laboratory	5
AHCJ 334	Biochemistry	4
DTCS 302	Food Selection and Presentation	5
DTCS 304	Community Nutrition	4
DTCS 305	Professional Issues in Nutrition and Dietetics	1
DTCS 321	Nutrition and Human Metabolism	4
DTCS 341	Introduction to Clinical Nutrition	5
DTCS 342	Medical Nutrition Therapy I	5
DTCS 343	Medical Nutrition Therapy II	5
DTCS 371	Quantity Food Purchasing, Production, and Service	5
DTCS 372	Food Systems Organization and Management	4
RELE 457	Christian Ethics and Health Care	3

Senior Year

AHCJ 407	Financial Management	2
AHCJ 471	Statistics and Research for Health Professionals I	3
AHCJ 472	Statistics and Research for Health Professionals II	3
DTCS 395	Nutrition and Dietetics Practicum	12
DTCS 405	Senior Seminar	1
DTCS 442	Nutrition Counseling	3
DTCS 445	Nutrition Care Management	4
DTCS 452	Advanced Nutrition	4
DTCS 453	Advanced Medical Nutrition Therapy	3
DTCS 461	Food Science	4
DTCS 473	Medical Nutrition-Therapy Affiliation	12
DTCS 476	Exercise Physiology in Medical-Nutrition Therapy	3
REL_ 4__		3
RELT 436	Adventist Heritage and Health	2

Graduate Year

____		3
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHCJ 601	Research Proposal Writing	3
DTCS 526	Pharmacology in Medical Nutrition Therapy	2
DTCS 589	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 504	Nutritional Metabolism	5
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
REL_ 5__		3
	Total Units:	**155**

Normal time to complete the program

5 years — 2 years (7 academic quarters) of undergraduate work for the B.S. plus 1 year (academic quarters) of graduate-level courses at LLU — based on full-time enrollment; part time permitted

Nutrition and Dietetics — B.S., B.S. and M.S., M.S. (Prior B.S.), M.S. DPD, M.S. for RDs Comparison

Junior Year	Course Title	BS	BS and MS	MS (Prior BS)	MS DPD	MS for RDs
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	4.0	4.0	4.0		
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		
RELE 457	Christian Ethics and Health Care	3.0	3.0			
Totals		**51.0**	**51.0**	**48.0**	**1.0**	
Senior Year	**Course Title**	**BS**	**BS and MS**	**MS (Prior BS)**	**MS DPD**	**MS for RDs**
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		3.0				
RELT 436	Adventist Heritage and Health	2.0	2.0			
REL_ 4__ Upper-division Religion			3.0			
Totals		**59.0**	**59.0**			
Graduate Program	**Course Title**	**BS**	**BS and MS**	**MS (Prior BS)**	**MS DPD**	**MS for RDs**
Elective (Graduate-level required)			3.0			
AHCJ 548	Human Resource Management in the Health-Care Environment		3.0	3.0	3.0	3.0
AHCJ 601	Research Proposal Writing		3.0	3.0	3.0	3.0
DTCS 526	Pharmacology in Medical Nutrition Therapy		2.0	2.0	2.0	2.0
DTCS 589	Capstone Course in Nutrition and Dietetics		3.0	3.0	3.0	3.0
DTCS 694	Research		4.0	4.0	4.0	4.0
EPDM 509	Principles of Epidemiology		3.0	3.0	3.0	3.0
NUTR 504	Nutritional Metabolism		5.0	5.0	5.0	5.0
NUTR 510	Advanced Public Health Nutrition		3.0	3.0	3.0	3.0

NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4.0	4.0	4.0	4.0
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4.0	4.0	4.0	4.0
NUTR 519	Phytochemicals	2.0	2.0	2.0	2.0
NUTR 564	Contemporary Issues of Vegetarian Diets	2.0	2.0	2.0	2.0
NUTR 605	Seminar in Nutrition	1.0	1.0	1.0	1.0
REL_ 5__ Graduate-level Religion		3.0			
AHCJ 571	Statistics and Research for Health Professionals I		3.0	3.0	
AHCJ 572	Statistics and Research for Health Professionals II		3.0	3.0	
DTCS 506	Professional Seminar in Nutrition and Dietetics		1.0	1.0	
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	
NUTR 526	Nutrition Counseling and Education		2.0		
RELE 5__ Graduate-level Ethics			3.0		
RELE 5__ Graduate-level Ethics				3.0	
Elective (Graduate-level required)					3.0
REL_ 5__ Graduate-level Religion					3.0
Totals		**45.0**	**68.0**	**62.0**	**48.0**

Affiliation and Practicum	**Course Title**	**BS**	**BS and MS**	**MS (Prior BS)**	**MS DPD**	**MS for RDs**
DTCS 795	Nutrition and Dietetics Graduate Practicum[1]			12.0	12.0	
DTCS 778	Clinical Nutrition Affiliation[1]			12.0	24.0	
Totals						
Overall Totals		**110.0**	**155.0**	**116.0**	**63.0**	**48.0**

[1] Affiliation and practicum units do not count toward minimum didactic units required for the degree.

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 with courses 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 specified quarter.

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 Canvas, 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.

Teaching methodology

The Master of Science degree in nutrition care management will be offered via an online format utilizing Canvas by Instructure. The nutrition and dietetics faculty have approved an online syllabus template and Canvas 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 one-day, on-campus orientation prior to beginning their course work.

Admissions

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

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- 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 recommendation from his/her supervisor and/or department head
- It is also suggested that the student submit 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.

Program requirements

First Year		
		Units
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHCJ 550	Organizational Theory	3
AHCJ 566	Theoretical Foundations of Leadership	3
AHCJ 595	Research and Statistics Concepts and Methods: Intermediate	3
DTCS 554	Advanced Medical Nutrition Therapy	3
RELT 563	Health Care, Humanity, and God	3
Second Year		
AHCJ 549	Professional Responsibility in Allied Health Professions	3
AHCJ 586	Curricula Planning in Health Sciences	3
DTCS 525	Nutrition Care Marketing	3
DTCS 536	Health Care Financial Management	3
DTCS 585	Operations Management in Food and Nutrition Services	4
DTCS 696	Nutrition Care-Management Project	6
HADM 604	Health Systems Strategic Planning	3
Third Year		
DTCS 505	Graduate Seminar--Portfolio	2
DTCS 579	Capstone Course in Nutrition Care Management	3
	Total Units:	**48**

Normal time to complete the program

2.33 years (8 academic quarters) — half-time enrollment only

Department of Occupational Therapy

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 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.

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, 4720 Montgomery Lane, Bethesda, MD 20814-3449. Web site: <http://www.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: <http://www.otaconline.org>; telephone: 888/686-3225.

Chair

Liane H. Hewitt

Primary faculty

Stacey B. Cunningham

Liane H. Hewitt

Heather A. Javaherian-Dysinger

Julie D. Kugel

Judith A. Palladino

Sharon L. Pavlovich

Karen S. Pendleton

Heather A. Roese

Arezou Salamat

Clinical faculty

Beth Aune-Nelson

Joyce A. Cabrera

Luella M. Grangaard

Kathryn I. Gundersen

Danielle J. Meglio

Janette L. Morey

Harold T. Neuendorff

Diana Su-Erickson

Christine M. Wietlisbach

Associated faculty

Bonnie J. Forrester

Bradford D. Martin

Ernest R. Schwab

Donna G. Thorpe

Grenith J. Zimmerman

Programs

- Master of Occupational Therapy (M.O.T.) (p. 112)
- Doctor of Occupational Therapy (O.T.D.) (p. 114)

Occupational Therapy (entry level) — M.O.T.

Program director
Heather A. Javaherian-Dysinger

Academic coordinator fieldwork education
Judith A. Palladino

The Department of Occupational Therapy views learning as a growing process integrated in service and resulting in competent, service-oriented leaders and practitioners. The global model of learning reflects the dynamic development of knowledge and competence transforming students into occupational therapists working in an ever-changing health-care environment. *Service-learning* fosters service experiences with community partners whereby students provide education on health, wellness, and quality of life; as well as advocate for client rights and justice. *Practice* involves occupational therapy courses that are organized by areas of practice. This allows students to learn about disorders, interventions, and professional skills for each practice area. *Research* consists of a series of classes in which students begin by learning how to critique research articles for best practice and end in a culminating research project.

Curricular threads: Transformative nature of occupation; evidence-based practice and research; health, lifestyle, and wellness; service-learning; advocacy, justice, and civic responsibility.

Clinical experience

For the two, three-month fieldwork experiences, the student is assigned to approved hospitals or 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.

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

For all scheduled fieldwork experience, students are required to have immunizations for MMR, TDAP, hepatitis B series, and varicella; and yearly tuberculosis test.

Program goals

1. Graduate experts in the therapeutic use of occupation and theory to envision possibilities and transform lives and communities through service and advocacy.
2. Graduate critical thinkers who engage in evidence-based practice.
3. Graduate advocates whose personal and professional use of occupation promotes health, lifestyle, quality of life, and wellness.

Program outcomes

Upon completion of the Master of Occupational Therapy degree, students will:

1. Articulate an understanding of the importance of the history and philosophical base of the profession of occupational therapy, using occupation as the therapeutic basis of transformation and meaning.
2. Describe the importance of balancing areas of occupation with the achievement of health and wellness for the clients in a wholistic perspective.
3. Demonstrate competency in design of occupation-based intervention plans and strategies (including goals and methods to achieve them) on the basis of the stated needs of the client as well as data gathered during the evaluation process in collaboration with the client and other health professionals.
4. Discuss and justify the varied roles of the occupational therapist as a practitioner, educator, researcher, consultant, and entrepreneur; and how these roles promote occupational justice by integrating principles of health, lifestyle, and wellness in collaboration with persons and communities.
5. Use scholarly literature to make evidence-based decisions.

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 in 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 (http://www.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; e-mail: <cbot@dca.ca.gov>. The office address is 2005 Evergreen Street, Suite 2050, Sacramento, CA 95815-3831.

Accreditation

The Occupational Therapy Program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), 4720 Montgomery Lane, Bethesda, MD 20814-3449; telephone: 301/652-2682; website <http://www.aota.org>.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- have earned a prior bachelor's degree in any major from an accredited college or university.
- a minimum science prerequisite G.P.A. of 3.00, and a minimum cumulative G.P.A. of 3.00.
- complete program prerequisites by December of the year you submit your application.
- work experience—a minimum of forty hours of documented observation in occupational therapy settings is required before application will be considered for admission.

Prerequisites

The applicant must complete the following subject requirements at an accredited college or university:

Human anatomy*

Human physiology*

Human lifespan development (developmental psychology)

Statistics*

Medical terminology

* Beginning in August 2014, these courses must have been taken within 5 years prior to entry to our program.

Grades of C- and below are not acceptable for transfer to LLU.

Program requirements

First Year		
Summer Quarter		**Units**
AHCJ 510	Human Gross Anatomy	9
OCTH 501	Professional Foundations I	3
OCTH 505	Occupation-Based Activity Analysis	3
OCTH 701	Service Learning Seminar	1
Autumn Quarter		
OCTH 502	Professional Foundations II: Human Occupation	3
OCTH 510	Functional Kinesiology	1
OCTH 514	Conditions in Occupational Therapy: Behavioral Health	4
OCTH 522	Analysis and Intervention: Behavioral Health	4
OCTH 570	Critical Inquiry and Evidence-Based Practice I	1
RELT 555	The Adventist Experience	3
Winter Quarter		
OCTH 506	Functional Neuroscience	3
OCTH 508	Splinting	1
OCTH 511	Conditions in Occupational Therapy: Orthopedic	4
OCTH 521	Analysis and Intervention I: Orthopedic	4
OCTH 702	Service Learning I	1
OCTH 711	Level I Fieldwork 1	2
Spring Quarter		
OCTH 503	Professional Foundations III	1
OCTH 507	Trends in Neuroscience	2
OCTH 512	Conditions in Occupational Therapy: Neurological	4
OCTH 523	Analysis and Intervention: Neurological	3
OCTH 531	Sensorimotor I	2
OCTH 712	Level I Fieldwork 2	2
Second Year		
Summer Quarter		
AHCJ 305	Infectious Disease and the Health-Care Provider	1
AHCJ 524	Pharmacology	2
OCTH 509	Design and Technology	2
REL_ 5__		3
Autumn Quarter		
OCTH 515	Conditions in Occupational Therapy: Infants, Children, Youth	4
OCTH 524	Analysis and Intervention: Infants, Children, Youth	3
OCTH 532	Sensorimotor II	2
OCTH 574	Critical Inquiry & Evidence-Based Practice II	3
OCTH 713	Level I Fieldwork 3	2
Winter Quarter		
OCTH 516	Conditions in Occupational Therapy: General Medicine	4
OCTH 527	Analysis and Intervention: General Medicine	4
OCTH 545	Current Trends in Occupational Therapy Practice	3
OCTH 551	Occupation and Wellness	3
OCTH 575	Critical Inquiry & Evidence-based Practice III	2
OCTH 703	Service Learning II	1
Spring Quarter		
OCTH 721	Level II Fieldwork Experience 1	8
Third Year		
Summer Quarter		
OCTH 517	Introduction to Physical Agent Modalities	1
OCTH 704	Service Learning III	2
RELE 524	Bioethics and Society	3
Autumn Quarter		
OCTH 504	Professional Foundations IV	2
OCTH 552	Professional Transition	3
OCTH 560	Entrepreneurship	2
OCTH 576	Critical Inquiry & Evidence-based Practice IV	2
OCTH 705	Service Learning IV	2
Winter Quarter		
OCTH 722	Level II Fieldwork Experience 2	8
	Total Units:	**133**

A minimum G.P.A. of 3.00 is required quarterly as well as cumulatively throughout the program.

Normal time to complete the program

3 years (11 academic quarters) — full-time enrollment required

Occupational Therapy — O.T.D.

Program director
Julie D. Kugel

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.

The course work includes emphasis on spirituality, diversity, critical reasoning, advocacy, participation, education, and research. The capstone project is individually 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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

If you live in a state that has regulatory requirements for online education, please check if Loma Linda University is able to accept residents of your state for online education. You may check online at http://www.llu.edu/central/assessment/distance-education.page? or contact the Admissions office for School of Allied Health Professions, 800/422-4558.

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Must have earned a master in occupational therapy degree or another related field. 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.
- Minimum graduate G.P.A. of 3.0.
- Six months of professional practice.
- Applicants from the United States must be certified by the National Board of Certification in Occupational Therapy (NBCOT).
- Applicants from other countries must submit verification of licensure and certification in occupational therapy.

The applicant's recommendations, interview, personal statement, and work experience are also considered in the admissions screening process.

Program requirements

Major		
OCTH 600	Occupational Science and Health Promotion	3
OCTH 601	Spirit of Diverse Abilities I	3
OCTH 602	Spirit of Diverse Abilities II	3
OCTH 604	Health, Society, and Participation	3
OCTH 605	Education for Health Professionals	3
OCTH 606	Leadership for Health Professionals	3
OCTH 611	Capstone: IRB Proposal	4
OCTH 614	Capstone II	3
OCTH 621	Capstone Planning	2
OCTH 622	Capstone Proposal	2
OCTH 623	Capstone III	4
OCTH 625	Capstone IV	4
OCTH 627	Professional Publication and Dissemination	4
Cognates		
AHCJ 605	Critical Analysis of Scientific Literature	3
RELE 524	Bioethics and Society	3
RELR 535	Spirituality and Mental Health	3
____ ___	Elective	3
Total Units		**53**

Normal time to complete the program

2.67 years (9 academic quarters) — based on less than full-time enrollment

Department of Physical Therapy

The department offers educational opportunities in two disciplines, physical therapy and orthotics/prosthetics. The full spectrum of entry-level and postprofessional physical therapy degree programs is provided, including the physical therapist assistant (A.S.) and the entry-level Doctor of Physical Therapy, (D.P.T.); the postprofessional Master of Science in Rehabilitation (M.S.R.) and Doctor of Physical Therapy (D.P.T.); and the Doctor of Science (D.Sc.). In addition, this department offers the entry-level Master of Science in Orthotics and Prosthetics (M.S.O.P.) degree.

Chair

Edd Ashley

Associate chairs

Lawrence E. Chinnock

Howard W. Sulzle

Primary faculty

Carol J. Appleton

Heather Appling

Skulpan Asavasopon

Edd Ashley

Bruce D. Bradley

Lawrence E. Chinnock

Meagan Clark

Timothy K. Cordett

Nicceta Davis

Bonnie J. Forrester

Henry Garcia

Susan M. Huffaker

Eric G. Johnson

Theresa M. Joseph

Everett B. Lohmann III

Bradford D. Martin

Jeannine Stuart Mendes

Michael Moor

Todd Nelson

Jerrold S. Petrofsky

Ronald M. Rea

Johannes Schaepper

Howard W. Sulzle

R. Wesley Swen

James M. Syms

Donna G. Thorpe

Antonio Valenzuela

Christine Wilson

Adjunct faculty

Robert F. Landel

Clinical faculty

Lauren M. Beeler

Michael Davidson

Christine Eddow

Joseph Godges

Steven D. Newton

Desmyrna R. Taylor

William E. Walthall

Lily L. Young

Associated faculty

Lee S. Berk

Murray Brandstater

Clyde Cassimy

Noha Daher

Heather Javaherian-Dysinger

Ehren Ngo

Pam Perez

Gail T. Rice

Louise Schneider

Ernest R. Schwab

Soraj Sorajjakool

Ardis E. Wazdatskey

Grenith J. Zimmerman

Emeritus faculty

Ronald A. Hershey

Programs

- Orthotics and Prosthetics — M.S.O.P. (Entry Level) (p. 117)
- Physical Therapist Assistant — A.S. (p. 119)
- Physical Therapy — M.S.R. (p. 122), D.P.T. (Entry Level) (p. 122), D.P.T. (Postprofessional) (45-unit track) (p. 122), D.P.T. (Postprofessional) (65-unit track) (p. 122), D.Sc. (Postprofessional) (p. 122) (Comparison (p. 128))

Orthotics and Prosthetics — M.S.O.P. (Entry Level)

Program director
Johannes Schaepper

The entry-level Master of Science 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 quarter of 500 hours of clinical affiliation supervised by the professional development committee.

The professional curriculum for the entry-level Master of Science in Orthotics and Prosthetics degree is designed to provide the student with the knowledge, behaviors, and skills required for entry into the clinical practice of orthotics and prosthetics residency according to NCOPE's published 2010 standards of the profession.

Individuals who enter with a previous bachelor's degree will be granted the Master of Science in Orthotics and Prosthetics 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 Master of Science in Orthotics and Prosthetics degree upon completion of the curriculum.

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 AAOP-approved local or national meetings.

Professional practice requirements

Satisfactory completion of the entry-level MSOP curriculum requirements qualifies the student to enter an NCOPE-accredited residency site of his/her choice. After completing a twelve-month prosthetic and a twelve-month orthotic residency, or an eighteen 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.

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 tenth quarter clinical affiliations required for the completion of the el-MSOP curriculum.

All clinical assignments will be made by the academic coordinator of clinical education. 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 preferences. 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.

Program learning outcomes

In addition to the institutional learning outcomes (p. 19), the program has selected the following program learning outcomes:

1. Discernment: Students exercise keen insight, progressive care, and critical judgement through careful evaluation in clinical care, skills application, and thinking throughout the profession.
2. Ethics: Students demonstrate guiding principles and recognized ethics of the profession.
3. Research: Students value and apply new technology, investigations, and knowledge to patient care and the profession through a commitment to discovery and education.
4. Diversity: Students examine the importance of embracing and serving the unmet and ever-changing needs of a diverse world.
5. Collaboration: Students participate in teamwork within and across disciplines in all aspects of the profession.

Accreditation

Accreditation for the entry-level Master of Science in Orthotics and Prosthetics degree was granted on September 23, 2013, by the National Commission on Orthotic and Prosthetic Education (NCOPE), 330 John Carlyle Street, Suite 200, Alexandria, VA 22314; telephone: 703/836-7114.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- must have completed a minimum of 64 semester or 96 quarter credit units at a regionally accredited college or university
- 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 attestation 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. 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 an asterisk (*).

The minimum subject admission requirements are listed below.

Note: Grades of C- and below are not transferable for credit.

Domain 1: Religion and Humanities (20 quarter/14 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 quarter units of religion per year. A maximum of 8 quarter units may apply toward Domain I.

Domain 2: Scientific Inquiry and Analysis

Encompasses both the natural and social sciences.

Natural Sciences—All courses are required, credits may vary

*Human anatomy with laboratory

*Physiology

*Chemistry with laboratory

*Physics with laboratory

*Statistics

Additional courses in the el-MSOP curriculum can fulfill Domain 2: Natural Sciences requirements.

Social Sciences—Required (12 quarter/8 semester units, minimum)

General psychology

*Growth and developmental or abnormal 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 (96 quarter/64semester units) required for admission.

* Individuals who have received a bachelor's degree from a regionally accredited college or university need to complete only the prerequisites denoted with an asterisk (*).

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Program requirements

Junior Year		
Autumn Quarter		
AHCJ 362	Anatomy	3
AHCJ 375	Physiology	3
ORPR 301	Orthotics & Prosthetics Laboratory and Technical Skills	3
ORPR 305	Orthotic Fitting Techniques	3
ORPR 310	Patient Management, Assessment, and Documentation	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
RELR 427	Crisis Counseling	2
Winter Quarter		
AHCJ 323	Economics and Business Management	3
ORPR 315	Pedorthics	3
ORPR 320	Biomechanical Evaluation	3
ORPR 325	Medical Terminology	3
ORPR 405	Gait Analysis	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
RELT 423	Loma Linda Perspectives	2
Spring Quarter		
AHCJ 320	ADL and Assistive Devices	3
AHCJ 351	Statistics for the Health Professions	3
DTCS 301	Human Nutrition	3
ORPR 330	Lower Extremity Orthotics I	3
ORPR 340	Lower Extremity Prosthetics I	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
Senior Year		
Summer Quarter		
AHCJ 402	Pathology I	4
AHCJ 461	Research Methods	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
ORPR 415	Lower Extremity Orthotics II	3
ORPR 420	Lower Extremity Prosthetics II	3
ORPR 425	CAD/CAM Technologies	3
Autumn Quarter		
AHCJ 514	Kinesiology: Motor Control and Learning	3
AHCJ 516	Clinical Imaging	3
AHCJ 544	Advanced Functional Neuroanatomy	3
AHCJ 569	Computers and Electronics for Clinicians	3

ORPR 345	Spinal Orthotics	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
ORPR 522	Self-Care Portfolio and Community Outreach	0.5
RELR 408	Christian Perspectives on Marriage and the Family	2
Winter Quarter		
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
ORPR 430	Upper Extremity Orthotics	3
ORPR 435	Upper Extremity Prosthetics	3
ORPR 491	Research I	3
ORPR 522	Self-Care Portfolio and Community Outreach	0.5
Graduate Year		
Summer Quarter		
AHCJ 575	Couples, Families, and Disabilities	3
ORPR 510	Advanced Clinical Rotations	1
ORPR 522	Self-Care Portfolio and Community Outreach	0.5
ORPR 538	Biomechatronics	3
ORPR 592	Research II	3
PHTH 630	Kinetics of the Human Body: Physics-Based Kinesiology	3
RELE 524	Bioethics and Society	3
Autumn Quarter		
AHCJ 507	Pharmacology in Rehabilitation	3
AHCJ 545	Legal and Ethical Issues in the Health Professions	3
ORPR 510	Advanced Clinical Rotations	1
ORPR 525	Lower Extremity Orthotics III	3
ORPR 540	Rehabilitative Care in Developing Nations	3
RELR 575	Art of Integrative Care	3
Winter Quarter		
ORPR 514	Clinical Affiliation	8
Spring Quarter		
AHCJ 315	Psychosocial Aspects of Health Care	3
AHCJ 422	History of Disability	3
ORPR 491	Research I	3
ORPR 506	Advanced Specialty Tracks in Orthotics and Prosthetics	3
ORPR 510	Advanced Clinical Rotations	1
ORPR 520	Lower Extremity Prosthetics III	3
ORPR 522	Self-Care Portfolio and Community Outreach	0.5
	Total Units:	**155**

Time to complete the program

2 years (6 academic quarters) at LLU at the undergraduate level and 1 year [4 academic quarters] at the graduate level — full-time enrollment required

Physical Therapist Assistant — A.S.

Program director
Jeannine Stuart Mendes

Assistant program director; director of clinical education
Carol J. Appleton

Advisory committee
Michael Corns
Amy Crawford
Lisa Ewing
Frank Holder
Samuel Lee
Douglas Moore
Melanie Sitanggang
Vickie Smith

The physical therapist assistant is a skilled paraprofessional health-care provider who implements the plan of care for patients under the direction and supervision of a licensed physical therapist. Following established procedures, the physical therapist assistant may train patients in exercises and activities of normal daily living; perform treatment interventions; utilize special equipment; assist in performing tests, data collection, and complex treatment procedures; and observe and document the patient's responses.

Physical therapists and physical therapist assistants may serve as part of a rehabilitation team including occupational therapists, nurses, speech and hearing therapists, respiratory therapists, recreational therapists, physicians, social workers, chaplains, vocational counselors, dietitians, and psychologists. 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. Program graduates have a wide range of opportunities in 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 is fifteen months in length and leads to the Associate in Science degree and professional licensure. The program begins with the sophomore year. Instruction begins in June; students participate in graduation ceremonies in the following June. Program completion occurs when clinical performance requirements are completed, typically by the end of September.

Clinical learning experience

The program includes supervised, one-on-one clinical instruction across the human lifespan in a variety of settings, including acute and subacute inpatient facilities and outpatient clinics. Students complete three major clinical assignments, each six weeks in length. In addition, students participate in learning experiences at the LLU Medical Simulation Center on campus.

All clinical assignments will be made by the director of clinical education or the program director. Although the program makes an effort to accommodate the student's preference, the student agrees to accept the clinical assignment made by the program at any of the affiliated facilities, whether local or out of state. 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.

Transportation

Students are required to have their own transportation to and from clinical sites.

CPR certification

Students are required to hold current certification in cardiopulmonary resuscitation (CPR) for the adult, child, and infant during all scheduled clinical experiences. Basic Life Support CPR certification for health-care providers must be completed via the American Heart Association. 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, Loma Linda, CA.

Professional licensing

Satisfactory completion of the clinical affiliations and degree requirements will qualify the student for the National Physical Therapy Examination (NPTE) for physical therapist assistants. State licensure or certification is required to practice as a physical therapist assistant in all 50 states and DC. Information about licensure or certification in the state in which one wishes to practice can be found on the Web at http://www.apta.org/licensure

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 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.

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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- a minimum G.P.A. of 2.50 in the three basic science prerequisite courses and a minimum G.P.A. of 2.50 in the remaining non-science prerequisite courses
- must have completed the prerequisite courses at a regionally-accredited college or university. Note: Grades below C are not transferable for credit.
- a personal interview
- completion of a writing assessment and documentation of observation hours (below).
- Work/observation experience—Documentation is required for at least 20 hours of work or volunteer observation in an *inpatient* physical therapy setting and at least 20 hours in an *outpatient* physical therapy setting, plus additional work/observation hours in either an inpatient or an outpatient physical therapy setting for a minimum total of eighty hours.

Prerequisites

All prerequisite courses must be completed prior to entering the program. An application for admission may be submitted while some course work is in progress if the student expects to complete the required course work before the program begins. Individuals who have earned a bachelor's degree from a regionally-accredited college or university need to complete only the courses denoted with an asterisk (*):

Four units of religion are required ***only if*** the applicant has attended a Seventh-day Adventist college or university

Humanities: Four units from one of the topics listed: history, literature, philosophy, foreign language, art/music appreciation/ history

*Human anatomy and physiology, complete sequence with laboratory components (preferred); or general biology, complete sequence with laboratory components (accepted)
*Introductory physics with laboratory component, one quarter/semester
*Two years high school math with grades C or above, or intermediate algebra in college
*General psychology
*Human growth and development or developmental psychology or abnormal psychology
English composition, complete sequence
*Speech
Personal health/nutrition, or two physical education/activity courses

If needed, elective courses may be taken to meet the minimum total requirements of 48 quarter units or 32 semester units

Program requirements

Sophomore

Summer Quarter 1		**Units**
PTAS 201	Anatomy	4
PTAS 205	Introduction to Physical Therapy	1
PTAS 206	Documentation Skills	1
PTAS 212	Physical Therapy Procedures	3
PTAS 231	Physical Therapy Modalities	3
PTAS 275	Psychosocial Aspects of Health	2
PTAS 265	Professional Seminar	0
RELE 456	Personal and Professional Ethics	2
Autumn Quarter		
AHCJ 305	Infectious Disease and the Health-Care Provider	1
PTAS 203	Applied Kinesiology	3
PTAS 204	Applied Gait	1
PTAS 224	General Medicine	3
PTAS 225	Neurology	3
PTAS 227	Therapeutic Exercise	2
PTAS 236	Applied Electrotherapy	3
PTAS 265	Professional Seminar	0
Winter Quarter		
PTAS 226	Orthopaedics I	3
PTAS 234	General Medicine II	1
PTAS 238	Wound Care	1
PTAS 243	Applied Geriatrics	3
PTAS 252	Applied Neurology	3
PTAS 264	Applied Orthotics and Prosthetics	2
PTAS 265	Professional Seminar	0
RELR 475	Art of Integrative Care	2
Spring Quarter		
PTAS 241	Applied Pediatrics	2
PTAS 251	Orthopaedics II	3
PTAS 261	Physical Therapy Practice	1
PTAS 265	Professional Seminar	1
PTAS 293	Physical Therapist Assistant Affiliation I	6
Summer Quarter 2		
PTAS 294	Physical Therapist Assistant Affiliation II	6
PTAS 295	Physical Therapist Assistant Affiliation III	6
	Total Units:	**72**

A minimum grade of C (2.0) is required for all courses in the program.

Time to complete the program

1.33 years (academic quarters) at LLU. Full-time enrollment is typical; half-time enrollment (3.25 years) by permission only.

Physical Therapy — M.S.R., D.P.T. (Entry Level), D.P.T. (Postprofessional), D.Sc.

Physical therapists are highly educated, licensed health-care professionals who provide services to patients/clients who have impairments, disabilities, or changes in physical function and health status as a result of injury, disease, and other causes.

Physical therapists teach patients how to prevent or manage their condition so that they will achieve long-term health benefits. They examine each individual and develop a plan, using treatment techniques to promote the ability to move, reduce pain, restore function, and prevent disability. In addition, physical therapists work with individuals to prevent the loss of mobility before it occurs by developing fitness- and wellness-oriented programs for healthier and more active lifestyles.

Physical therapists provide care for people in a variety of settings, including hospitals, private practices, outpatient clinics, home-health agencies, schools, sports and fitness facilities, work settings, and nursing homes. State licensure is required in each state in which a physical therapist practices

Within the Department of Physical Therapy, in addition to the Associate in Science degree (PTA) found in the previous section of the Catalog, the program options include:

- postprofessional Master of Science in Rehabilitation
- entry-level Doctor of Physical Therapy
- postprofessional Doctor of Physical Therapy
- postprofessional Doctor of Science

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, 2005 Evergreen Street, Suite 1350, Sacramento, CA 95815; Web site: <http://www.ptbc.ca.gov/>.

Programs

- Physical Therapy - M.S.R. (Postprofessional (p. 127)), D.P.T. (Entry Level) (p. 122), D.P.T. (Postprofessional) (p. 125), D.Sc. (Postprofessional) (p. 126), Postprofessional Comparison (p. 128)

Physical Therapy — D.P.T. (Entry Level)

Program director
Lawrence E. Chinnock

Academic coordinator of clinical education for entry-level Doctor of Physical Therapy
Theresa Joseph

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. The D.P.T. degree curriculum is three years in length. Individuals may enter the program with or without a bachelor's degree. Those who enter with a previous bachelor's 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. [Students entering the program in June 2018 will be required to have an earned bachelor degree from a regionally accredited institution prior to starting the program.]

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 four-week assignment following Spring Quarter. The major clinical assignments are during the third year. The student will be assigned a ten-week affiliation during the Summer Quarter, an eleven-week affiliation during the Winter Quarter, and a 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 think critically 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.

Accreditation

The entry-level Doctor of Physical Therapy Program at Loma Linda University is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, Virginia 22314; Telephone 703-706-3245; Email: accreditation@apta.org; website: <http://www.capteonline.org>.

Admissions

Admission is based on a selective process. Criteria used include: G.P.A., completion of subject requirements, interview, and recommendations. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- a minimum G.P.A. of 3.2.
- a minimum of 138 quarter units (92 semester units) at a regionally accredited college or university. The minimum subject admission requirements are listed below. Note: Grades of C- and below are not transferable for credit. 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 (**).
- 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.

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.

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

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

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.

** 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 (**).

Technology requirement

Students are required to have an iPad for the courses in the orthopaedic and neurology tracks as well as for testing activities in all courses. It is highly recommended that students have access to a personal computer (minimum: 800 MHz multimedia) with Internet access (minimum: 56 kbps [connected at 44+ kbps]). A $50 technology fee is charged in years one and two.

Prerequisite changes for individuals entering the program in June 2016:

The only area that will have a change in June 2016 is in the “Natural Sciences.” These changes pertain to individuals with or without an earned bachelor's degree. The new requirements will be:

**Human anatomy and physiology, complete sequence with laboratory

**General chemistry, complete sequence with laboratory

**General physics, complete sequence with laboratory

**Statistics

**Two additional biological science courses with at least one at the upper division level

**Medical terminology

Prerequisite changes for individuals entering the program in June 2018:

All applicants will need to have an earned bachelor's degree in any field from a regionally accredited institution prior to enrolling in the program. In addition to having a bachelor's degree, the prerequisites for all applicants will be:

Human anatomy and physiology, complete sequence with laboratory

General chemistry, complete sequence with laboratory

General physics, complete sequence with laboratory

Statistics

Two additional biological science courses

Medical terminology

General psychology

Human growth and development

One course in oral communication skills

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.

Program requirements

First Year		
Summer Quarter		**Units**
AHCJ 510	Human Gross Anatomy	9
PHTH 510	Kinesiology	3
PHTH 514	Manual Muscle Testing	3
RELR 709	Christian Perspectives on Death and Dying	2
Autumn Quarter		
AHCJ 705	Infectious Disease and the Health Care Provider	1
AHCJ 560	Physiology	4
AHCJ 561	Neuroscience I: Neuroanatomy	4
AHCJ 721	Wholeness Portfolio I	0
PHTH 509	Physical Therapy Modalities	3
PHTH 513	Therapeutic Procedures	3
PHTH 563	Scientific Inquiry I	2
RELT 718	Adventist Heritage and Health	2
Winter Quarter		
AHCJ 538	Histology	3
AHCJ 542	Pathology I	4
AHCJ 562	Neuroscience II: Neurophysiology	3
AHCJ 721	Wholeness Portfolio I	0
PHTH 527	Scientific Foundations for Therapeutic Exercise	2
PHTH 528	Therapeutic Exercise I	2
PHTH 557	Life Span Studies I: Infant through Adolescent	3
PHTH 564	Scientific Inquiry II	2
Spring Quarter		
AHCJ 543	Pathology II	3
AHCJ 563	Neuroscience III: Clinical Neurology	2
AHCJ 721	Wholeness Portfolio I	1
PHTH 506	Exercise Physiology	3
PHTH 508	PT Communication and Documentation	2
PHTH 519	Locomotion Studies	3
PHTH 521A	Orthopaedics 1A	3
PHTH 571	Physical Therapy Practicum I	1
Second Year		
Summer Quarter		
AHCJ 524	Pharmacology	2
PHTH 511	Clinical Orthopaedics	2
PHTH 512	Clinical Psychiatry	2
RELT 740	World Religions and Human Health	3
Autumn Quarter		
AHCJ 516	Clinical Imaging	3
AHCJ 722	Wholeness Portfolio II	0
PHTH 501	Neurology I	2
PHTH 521B	Orthopaedics 1B	3
PHTH 525	General Medicine	3
PHTH 530	Therapeutic Exercise II	3
PHTH 540	Concepts of Acute Care	1
PHTH 575	Orthopaedics IV	1
Winter Quarter		
AHCJ 722	Wholeness Portfolio II	0
PHTH 502	Neurology II	3
PHTH 518	Aspects of Health Promotion	2
PHTH 522	Orthopaedics II	3
PHTH 526	Cardiopulmonary	3
PHTH 534	Soft Tissue Techniques	2
PHTH 558	Life Span Studies II: Developmental Disabilities	3
RELE 524	Bioethics and Society	3

Spring Quarter		
AHCJ 722	Wholeness Portfolio II	1
PHTH 503	Neurology III	3
PHTH 517	Movement Science	2
PHTH 523	Orthopaedics III	3
PHTH 555	Differential Diagnosis	2
PHTH 559	Life Span Studies III: Geriatrics	2
PHTH 561	Physical Therapy Administration	4
Third Year		
Summer Quarter		
PHTH 572	Physical Therapy Practicum II	2
PHTH 701A	Physical Therapy Affiliation IA	4
Autumn Quarter		
PHTH 567	Pain Science	2
PHTH 701B	Physical Therapy Affiliation IB	1
PHTH 731	Advanced Orthopaedic Studies	3
PHTH 732	Advanced Neurologic Studies	3
PHTH 733	Advanced General Medicine Studies	3
Winter Quarter		
PHTH 702	Physical Therapy Affiliation II	5
Spring Quarter		
PHTH 703	Physical Therapy Affiliation III	5
	Total Units:	**162**

Time to complete the program

3 years (12 academic quarters) — full-time enrollment required

Physical Therapy — D.P.T. (Postprofessional)

Program director
Everett B. Lohmann III

The postprofessional Doctor of Physical Therapy (PP-DPT) degree is designed for the individual with a degree in physical therapy who wishes to pursue advanced studies in the profession. Pending approval by the Ministry of Education in Puerto Rico and WASC (p. 12), plans have been made to also offer this program on the campus of Universidad Adventista de las Antillas located in Mayagüez, Puerto Rico. The start date will be determined once all approvals have been obtained.

Two tracks lead to the postprofessional Doctor of Physical Therapy degree:

- The 65-unit track is designed for the individual with a bachelor's degree in physical therapy from an accredited program or who has the equivalent of a U.S. bachelor's degree in physical therapy.
- The 45-unit track is designed for the individual with a bachelor's degree in physical therapy from an accredited program or who has the equivalent of a U.S. bachelor's degree in physical therapy and has earned a master's degree.

Technology requirement

Students are required to have an iPad for the courses in the orthopaedic and neurology tracks, as well as for testing activities in all courses. It is highly recommended that students 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.]). A $50 technology fee is charged in year one.

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	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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- 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
- must have earned a master's degree (45-unit track only).
- 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.

Program requirements

45-unit track

Required		
AHCJ 507	Pharmacology in Rehabilitation	3
AHCJ 516	Clinical Imaging	3
AHCJ 518	Advanced Physiology I: Neurobiology	3
AHCJ 527	Medical Screening for Rehabilitation Professionals	3
AHCJ 551	Professional Systems in Management I	3
AHCJ 605	Critical Analysis of Scientific Literature	3
PHTH 541	Advanced Clinical Practice I	3
PHTH 542	Advanced Clinical Practice II	3
PHTH 543	Advanced Clinical Practice III	3
PHTH 629	Movement Science: Lower Quarter Biomechanical Relationships	3
RELR 525	Health Care and the Dynamics of Christian Leadership	3
____ ___	Elective	12
Total Units		**45**

Time to complete the program

1 year (4 academic quarters) — based on full-time enrollment

65-unit track

Required		
AHCJ 507	Pharmacology in Rehabilitation	3
AHCJ 511	Biostatistics I	3
AHCJ 516	Clinical Imaging	3
AHCJ 518	Advanced Physiology I: Neurobiology	3
AHCJ 527	Medical Screening for Rehabilitation Professionals	3
AHCJ 528	Lifestyle Health and Wholeness	3
AHCJ 551	Professional Systems in Management I	3
AHCJ 591	Research I	2
AHCJ 605	Critical Analysis of Scientific Literature	3
PHTH 529	Pathokinesiology of Gait	3
PHTH 531	Soft-Tissue Mobilization	3
PHTH 541	Advanced Clinical Practice I	3
PHTH 542	Advanced Clinical Practice II	3
PHTH 543	Advanced Clinical Practice III	3
PHTH 545	Orthopaedic Interventions: Mobilization of Peripheral Nerves & Diathroidal Joints of the Extremities	3
PHTH 548	Function-Based Rehabilitation	3
PHTH 628	Movement Science of the Upper Quarter	3
PHTH 629	Movement Science: Lower Quarter Biomechanical Relationships	3
RELR 525	Health Care and the Dynamics of Christian Leadership	3
____ ___	Elective	9
Total Units		**65**

Time to complete the program

1.5 years (6 academic quarters) — based on full-time enrollment

Physical Therapy — D.Sc. (Postprofessional)

Program director
Everett B. Lohmann III

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.

Technology requirement

Students are required to have an iPad for the courses in the orthopaedic and neurology tracks as well as for testing activities in all courses. It is highly recommended that students 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.]). A $50 technology fee is charged in years one and two.

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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- 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
- 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

Program requirements

Required		
AHCJ 506	Educational Evaluation and Clinical Assessment	3
AHCJ 507	Pharmacology in Rehabilitation	3
AHCJ 515	Curriculum Development in Higher Education	3
AHCJ 516	Clinical Imaging	3
AHCJ 518	Advanced Physiology I: Neurobiology	3
AHCJ 527	Medical Screening for Rehabilitation Professionals	3
AHCJ 534	Advanced Neurological Rehabilitation	3
AHCJ 535	Advanced Physiology II: Exercise and Thermoregulation	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
AHCJ 605	Critical Analysis of Scientific Literature	3
PHTH 535	Research and Statistics I	3
PHTH 536	Research and Statistics II	3
PHTH 537A	Research and Statistics IIIA Research Proposal	3
PHTH 537B	Research and Statistics IIIB Data Collection	3

PHTH 538	Research and Statistics IV	3
PHTH 541	Advanced Clinical Practice I	3
PHTH 542	Advanced Clinical Practice II	3
PHTH 543	Advanced Clinical Practice III	3
PHTH 599	Comprehensive Examination	0
PHTH 629	Movement Science: Lower Quarter Biomechanical Relationships	3
PHTH 697	Research and Statistics V - Preliminary Dissertation	3
RELE 525	Ethics for Scientists	3
RELR 525	Health Care and the Dynamics of Christian Leadership	3
RELT 557	Theology of Human Suffering	3
____ ___	Elective	6
Total Units		**84**

Other requirements

- successful completion of a comprehensive written examination is required in order to advance to candidacy.
- a written dissertation and a defense of the dissertation.

Time to complete the program

5 years (20 academic quarters) based on full-time enrollment

Physical Therapy — M.S.R. (Postprofessional)

Program director
Everett B. Lohmann III

The Master of Science in Rehabilitation (M.S.R.) degree is a postprofessional program designed for individuals with a baccalaureate degree in physical therapy who wish to pursue advanced studies in their profession.

Technology requirement

Students are required to have an iPad for the courses in the orthopaedic and neurology tracks as well as for testing activities in all courses. It is highly recommended that students have access to a personal computer (minimum: 800 MHz multimedia) with internet access (minimum: 56 kbps [connected at 44+ kbps]). A $50 technology fee is charged in year one.

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 M.S.R. 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 to the larger world population.
Outcome 4	Clinical excellence. Students will provide advanced patient-specific physical therapy care.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- 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.

The GRE is not required for acceptance.

Program requiremets

First Year

Autumn Quarter		**Units**
AHCJ 511	Biostatistics I	3
AHCJ 519	Graduate Wholeness Portfolio	1
AHCJ 591	Research I	3
AHCJ 696	Research Rotations	2
Winter Quarter		
PHTH 529	Pathokinesiology of Gait	3
PHTH 531	Soft-Tissue Mobilization	3
PHTH 545	Orthopaedic Interventions: Mobilization of Peripheral Nerves & Diathroidal Joints of the Extremities	3
PHTH 560	Neurologic Upper Extremity Management	3
Spring Quarter		
AHCJ 545	Legal and Ethical Issues in the Health Professions	3
PHTH 520	Medical Documentation and Billing	3
PHTH 549	Cervicogenic Dizziness	3
PHTH 598	Advanced Specialty Tracks	3
Summer Quarter		
AHCJ 592	Research II	3
PHTH 548	Function-Based Rehabilitation	3
PHTH 550	Integrative Approach to Early Rehabilitation	3
RELR 575	Art of Integrative Care	3
	Total Units:	**45**

Time to complete the program

1 year (4 academic quarters) — based on full-time enrollment

Physical Therapy — D.P.T. (Postprofessional), D.Sc. Comparison

Required	Course Title	DPT (Prior MPT)	DPT (Prior BS)	DSc
Elective		12.0		
AHCJ 507	Pharmacology in Rehabilitation	3.0	3.0	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 527	Medical Screening for Rehabilitation Professionals	3.0	3.0	3.0
AHCJ 551	Professional Systems in Management I	3.0	3.0	3.0
AHCJ 605	Critical Analysis of Scientific Literature	3.0	3.0	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 629	Movement Science: Lower Quarter Biomechanical Relationships	3.0	3.0	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	3.0	3.0
Elective			9.0	
AHCJ 511	Biostatistics I		3.0	
AHCJ 528	Lifestyle Health and Wholeness		3.0	
AHCJ 591	Research I		2.0	
PHTH 529	Pathokinesiology of Gait		3.0	
PHTH 531	Soft-Tissue Mobilization		3.0	
PHTH 545	Orthopaedic Interventions: Mobilization of Peripheral Nerves & Diathroidal Joints of the Extremities		3.0	
PHTH 548	Function-Based Rehabilitation		3.0	
PHTH 628	Movement Science of the Upper Quarter		3.0	
Elective				6.0
AHCJ 506	Educational Evaluation and Clinical Assessment			3.0
AHCJ 515	Curriculum Development in Higher Education			3.0
AHCJ 534	Advanced Neurological Rehabilitation			3.0
AHCJ 535	Advanced Physiology II: Exercise and Thermoregulation			3.0
AHCJ 556	Administration in Higher Education			3.0
AHCJ 564	Collaborative Learning in Higher Education			3.0
AHCJ 599	Directed Teaching			3.0
PHTH 535	Research and Statistics I			3.0
PHTH 536	Research and Statistics II			3.0
PHTH 537A	Research and Statistics IIIA Research Proposal			3.0
PHTH 537B	Research and Statistics IIIB Data Collection			3.0
PHTH 538	Research and Statistics IV			3.0
PHTH 599	Comprehensive Examination			0.0
PHTH 697	Research and Statistics V - Preliminary Dissertation			3.0
RELE 525	Ethics for Scientists			3.0
RELT 557	Theology of Human Suffering			3.0
Totals		**45.0**	**65.0**	**84.0**

Department of Physician Assistant Sciences

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.

For more information, call 909/558-7295; email us at <pa@llu.edu>; or visit the SAHP Web site at <llu.edu/allied-health/sahp/pa>.

Interim chair

David Lopez

Primary faculty

Yasmin Chene

Christy Eskes

Gerald Glavaz

Benny Hau

Ghina Katrib

Catherine Oms

Frank Sirna

Program

Physician Assistant — M.P.A. (p. 129)

Physician Assistant — M.P.A.

Program director
Christy Eskes

Didactic coordinator
Frank Sirna

Associate didactic coordinators
Catherine Oms
Julie Yang

Clinical coordinator
Gerald Glavaz

Associate clinical coordinator
Ghina Katrib

Medical director
Benny Hau

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.

Program objectives

Upon completion of the program, the physician assistant 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 an evidence-based review of the literature.

Program outcomes

In addition to the stated institutional learning outcomes (p. 19), 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.

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. 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.

Accreditation

The Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA), has granted accreditation-continued status to the Loma Linda University Physician Assistant Program sponsored by Loma Linda University. Continued accreditation is a status granted when a currently accredited program is in compliance with the ARC-PA Standards.

Continued accreditation remains in effect until the program closes or withdraws from the accreditation process or until accreditation is withdrawn for failure to comply with the standards. The approximate date for the next comprehensive review of the program by the ARC-PA will be March 2017.

Admissions

Applications are accepted between May 1 and October 1. Applications must be made through the Central Application Service for Physician Assistants (CASPA). This service is available at <caspaonline.org (https://portal.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 December 15. Required interviews are granted to qualified applicants upon invitation by the admissions committee. The applicant must also complete the following requirements:

- A baccalaureate degree from an accredited institution, completed by December 31 of the year of application,
- 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
- Three letters of recommendation—one from a practicing M.D., D.O., or P.A. (not from shadowing, friend, or relative)
- Documented paid patient-care experience of 2,000 hours minimum by matriculation—It is preferred that this requirement be completed by the time the application is submitted but must be completed by matriculation in the program. Student clinical hours and volunteer experience 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.
- Complete all prerequisite course work at a regionally accredited college before being admitted to a program in the School of Allied Health Professions. Note: Grades below C are not accepted for credit.
- A minimum score of 550 (paper based), 213 (computer based), or 80 (Internet based) from the Test of English as a Foreign Language (TOEFL) must be submitted for any applicant whose native language is not English or whose secondary education has been given outside the United States. 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. TOEFL scores are valid for two years.

Prerequisites

College-level prerequisite courses include the following:

Human anatomy and physiology with laboratory, complete sequence (8 semester units). Must cover all organ systems

One year of general chemistry with laboratory or a sequence in inorganic, organic, and biochemistry with laboratory (8 semester units)

General microbiology with laboratory (4 semester units). Must cover medically important bacteria, viruses, fungi, and protozoa.

General psychology or equivalent

General sociology or equivalent
or
Cultural anthropology or equivalent

College-level algebra or equivalent

One year of English (language courses not accepted)

* Only two prerequisite courses can be outstanding at the time of submission of the CASPA application (one science, one non-science), even if the course will be completed prior to the applicant submitting his or her supplemental application.

** Science prerequisites must include an on-campus laboratory component.

*** All prerequisite course work must be taken at a regionally accredited institution in the United States.

Recommended

Statistics and medical terminology

Conversational Spanish (required for the 2015-2016 cycle)

Preference given to

Seventh-day Adventists

Graduates of Loma Linda University

Applicants from underrepresented populations

Applicants with documented community service

Program requirements

First Year		
Autumn Quarter		**Units**
PAST 518	Anatomy for Physician Assistants I	3
PAST 547	Basic Medical Science	3
PAST 548	Diagnostic Methods	2
PAST 551	Pathophysiology for Physician Assistants I	3
PAST 580	Clinical Correlation for Physician Assistants	1
PAST 581	Physical Diagnosis for Physician Assistants I	2
PAST 601	Evidence-Based Medicine for Physician Assistants I	2
RELE 505	Clinical Ethics	3
Winter Quarter		
PAST 519	Anatomy for Physician Assistants II	3
PAST 541	Clinical Medicine for Physician Assistants I	5
PAST 544	Pharmacology for Physician Assistants I	3
PAST 552	Pathophysiology for Physician Assistants II	3
PAST 572	Cultural Immersion for Physician Assistants	3

PAST 582	Physical Diagnosis for Physician Assistants II	3
PAST 602[1]	Evidence-Based Medicine for Physician Assistants II	2
Spring Quarter		
PAST 542	Clinical Medicine for Physician Assistants II	5
PAST 545	Pharmacology for Physician Assistants II	3
PAST 556	Preventive Medicine and Health Promotion	2
PAST 558	Psychiatry for Physician Assistants	3
PAST 571	Multicultural Competencies for Physician Assistants	3
PAST 583	Physical Diagnosis for Physician Assistants III	2
Summer Quarter		
PAST 504	Primary Care Pediatrics	2
PAST 505	Women's Health Care	2
PAST 543	Clinical Medicine for Physician Assistants III	3
PAST 554	Clinical Skills for Physician Assistants	5
PAST 584	Physical Diagnosis for Physician Assistants IV	2
Second Year		
Autumn Quarter		
PAST 516[2]	Physician Assistant Professional Issues	2
PAST 603[1]	Capstone	2
PAST 701	Rotation I	6
PAST 702	Rotation II	6
Winter Quarter		
PAST 703	Rotation III	6
PAST 704	Rotation IV	6
Spring Quarter		
PAST 705	Rotation V	6
PAST 706	Rotation VI	6
Summer Quarter		
PAST 707	Rotation VII	6
PAST 708	Rotation VIII	6
	Total Units:	**125**

Eight six-week clinical rotations, including: family medicine, internal medicine, pediatrics, obstetrics/gynecology, general surgery, emergency medicine, behavioral medicine, and one elective are required.

1 In progress through Summer Quarter

2 In progress through Spring Quarter

Time to complete the program

2.33 years (8 academic quarters) — full-time enrollment required

Department of Radiation Technology

The Department of Radiation Technology is made up of diverse professions. Radiographers image body structures utilizing ionizing radiation; and they can specialize in CT, MRI, imaging informatics, mammography, nuclear medicine, sonography, or radiation therapy. While CT and MRI both produce cross-sectional images of the body, MRI utilizes a magnetic field rather than ionizing radiation. Nuclear medicine employs the nuclear properties of radioactive and stable nuclides to make diagnostic evaluations of the anatomic or physiologic conditions of the body. Sonography makes use of sound waves to image the human body; and radiation therapy employs medical use of ionizing radiation to treat cancer and control malignant cell growth. Professionals in these areas are able to communicate effectively, think critically, demonstrate professionalism by treating all persons with respect, assume responsibility and accountability for their actions, and adhere to the rules of confidentiality.

Chair

Laura L. Alipoon

Associate chair

Michael F. Iorio

Primary faculty

Laura L Alipoon

Abdulkader Atattas

Brenda L. Boyd

Mark J. Clements

Kathryn M. Cockrill

Carol A. Davis

Marie T. DeLange

Wiliam J. Edmunds

Erma P. Ezpeleta

Michael F. Iorio

Brigit C. Mendoza

Teresa R. Mosley

Jerone G. Murphy

Abdul Fattah Rachdan

Timothy Seavey

Andrew J. Shepard

Elle J. Taggart

Karla Lavin Williams

Clinical faculty

Irene M. Bielitz

Noriece R. Kisinger

Sara Leeds

Anh M. Ly

Ruth Reyes

Adjunct faculty

Javed Ahmad

Mohamed Radwan El Atamna

Associated faculty

Patricia J. Applegate

Noha S. Daher

Donna A. Goff

Barbara A. Holshouser

Baldev Patyal

Samuel M. Randolph

Glenn A. Rouse

Shelia A. Wilson

Grenith Zimmerman

Programs

- Diagnostic Medical Sonography — Certificate (Track 1) (p. 132), Certificate (Track 2) (p. 132) (Comparison (p. 134))
- Imaging Informatics — Certificate (p. 134)
- Medical Dosimetry — Certificate (B.S. in Physics Track) (p. 135), Certificate (A.S. in Radiation Therapy Track) (p. 135) (Comparison (p. 137))
- Medical Radiography — A.S. (p. 137) (Comparison (p. 140))
- Nuclear Medicine Technology — B.S. (p. 141) (Comparison (p. 144))
- Radiation Sciences — B.S. (p. 145), M.S.R.S. (p. 148)
- Radiation Therapy Technology — Certificate (p. 149)
- Radiography Advanced Placement — Certificate (p. 150)
- Radiologist Assistant — M.S.R.S. (p. 151)
- Special Imaging — CT, MRI, CT/MRI Certificates (p. 152), (Comparison (p. 154))

Diagnostic Medical Sonography — Certificate (Track 1, Track 2)

Program director
Marie T. DeLange

Medical directors
Ramesh C. Bansal
Glenn A. Rouse

Clinical coordinator
Shelia A. Wilson

The diagnostic ultrasound profession is a multispecialty field comprised of diagnostic medical sonographers (DMS) with subspecialties in abdomen, obstetrics/gynecology, breast, and neurology; vascular technologists (RVT); and diagnostic cardiac sonographers (DCS) with subspecialties in adult, pediatrics, and fetal echocardiography.

The diagnostic ultrasound professional performs patient assessments and acquires and analyzes data obtained using ultrasound diagnostic technologies. The sonographer provides a summary of findings to the physician to aid in patient diagnosis and management. S/he utilizes independent judgment and systematic problem-solving methods to produce quality diagnostic information. A sonographer must complete comprehensive clinical training and obtain a credential by successfully passing the national boards.

Program outcomes

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

1. Demonstrate the knowledge and skill required 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 (registered vascular technology) and RDMS (registered diagnostic medical sonography) examinations. General sonographers perform examinations evaluating organs such as the liver, kidneys, spleen, gallbladder, and thyroid; as well as obstetrics/gynecology, pediatrics, and breast. The vascular sonographer performs a variety of noninvasive examinations to evaluate the arteries and veins, assess blood flow and valve competency, and detect the presence of clots. Third credential (RDCS) requires additional twelve months in the program.

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 the adult RDCS examination. RDMS credential requires two additional years in the program.

The 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 reviewed annually by 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 board examination of the American Registry of Diagnostic Medical Sonographers.

CPR certification (American Heart Association only)

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, and must be completed prior to beginning the program. CPR classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

Accreditation

The 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 reviewed annually by the Joint Review Committee on Education in Diagnostic Medical Sonography.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

Fulfill one of the following four requirements:

- Hold an ARRT-registered radiologic technologist certification;

or

- Have graduated from an accredited allied health program, including nursing (two years minimum training), licensed vocational nurse, or registered nurse;

or

- Hold an associate degree (science preferred not required);

or

- Hold a baccalaureate degree (science preferred not required);

and *must have completed credits in the following:**

- Human anatomy and physiology with laboratory, complete two-semester sequence, **within the past five years**
- College algebra, **within the past five years**
- Medical terminology
- Introduction to physics, **within the past five years**
- EKG class (cardiac student)
- Patient-care methods (will be completed after being accepted into the program)

* Specific course requirements must be completed at an accredited college or university.

Program requirements

- Certificate in Diagnostic Medical Sonography (Track 1) (p. 133)
- Certificate in Diagnostic Cardiac Sonography (Track 2) (p. 134)
- Certificate in Diagnostic Medical Sonography - Comparison (p. 134)

Certificate in Diagnostic Medical Sonography (Track 1)

Required		
RELE 457	Christian Ethics and Health Care	2
RTMS 344	Introduction to Medical Sonography	5

RTMS 345	Ob-Gyn Sonography	5
RTMS 346	Vascular Technology/Doppler/Scan Techniques	5
RTMS 348	Abdomen/Neurosonography	5
RTMS 379	Ultrasound Physics and Instrumentation I	2
RTMS 381	Topics in Medical Sonography I	1
RTMS 382	Topics in Medical Sonography II	1
RTMS 383	Topics in Medical Sonography III	1
RTMS 384	Topics in Medical Sonography IV	1
RTMS 387	Ultrasound Physics and Instrumentation II	2
RTMS 971	Medical Sonography Clinical Affiliation	11
RTMS 972	Medical Sonography Clinical Affiliation	11
RTMS 973	Medical Sonography Clinical Affiliation	11
RTMS 974	Medical Sonography Clinical Affiliation	11
RTMS 975	Medical Sonography Clinical Affiliation	12
RTMS 976	Medical Sonography Clinical Affiliation	11
RTMS 977	Medical Sonography Clinical Affiliation	11
RTMS 978	Medical Sonography Clinical Affiliation	11
Total Units		**119**

Time to complete the program

92 weeks (8 academic quarters) — full-time enrollment required

Certificate in Diagnostic Cardiac Sonography (Track 2)

Required		
EMMC 315	Cardiology	3
RELE 457	Christian Ethics and Health Care	2
RTMS 339	Echocardiography I	4
RTMS 347	Echocardiography II	4
RTMS 379	Ultrasound Physics and Instrumentation I	2
RTMS 384	Topics in Medical Sonography IV	1
RTMS 385	Topics in Medical Sonography V	2
RTMS 387	Ultrasound Physics and Instrumentation II	2
RTMS 965	Cardiac Ultrasound Clinical Affiliation	12
RTMS 966	Cardiac Ultrasound Clinical Affiliation	11
RTMS 967	Cardiac Ultrasound Clinical Affiliation	11
RTMS 968	Cardiac Ultrasound Clinical Affiliation	12
Total Units		**66**

Time to complete the program

47 weeks (4 academic quarters) — full-time enrollment required

Diagnostic Medical Sonography — Certificate (Track 1, Track 2) Comparison

Required	Course Title	Track 1	Track 2
RELE 457	Christian Ethics and Health Care	2.0	2.0
RTMS 379	Ultrasound Physics and Instrumentation I	2.0	2.0
RTMS 384	Topics in Medical Sonography IV	1.0	1.0
RTMS 387	Ultrasound Physics and Instrumentation II	2.0	2.0
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 348	Abdomen/Neurosonography	5.0	
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 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	
EMMC 315	Cardiology		3.0
RTMS 339	Echocardiography I		4.0
RTMS 347	Echocardiography II		4.0
RTMS 385	Topics in Medical Sonography V		2.0
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
Totals		**119.0**	**66.0**

Imaging Informatics — Certificate

Program director
Timothy Seavey

The purpose of the program is to enable learners to function as picture archival communication systems (PACS) administrators. Along with the advancement of technology, radiology departments are continuously adopting new means to increase productivity, quality, and efficiency. This often translates into a complex system of servers, networks, and imaging equipment. Management of these systems involves a special skill set crossing between information technology and radiography. These specialized people are usually termed PACS administrators.

Distance education

The Imaging Informatics Program is an online program open to qualified applicants residing in states authorizing students from Loma Linda University.

Program outcomes

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

Outcome 1	Management: Demonstrate leadership and critical thinking in the management of imaging informatics.
Outcome 2	Professionalism: Behave in a professional manner in all interactions in imaging informatics.
Outcome 3	Standards and Practices: Comply with the current standards and practices set by governing bodies within the imaging and medical field.
Outcome 4	Knowledge: Improve knowledge and skills in imaging informatics

Program design

The program will consist of eight 3-unit core courses and one religion course totaling 64 quarter units Management System (Canvas). The student will be assessed using quizzes, papers, group discussion, laboratory assignments, and projects. Completion of the informatics certificate counts for two points of the seven required to qualify for the American Board of Imaging Informatics Examination (see <http://www.ABII.org" target=>).

Students can utilize the courses in the Imaging Informatics Program as an emphasis within the Bachelor of Science degree in radiation sciences at LLU (see the program director for details).

Loma Linda University does not guarantee employment.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Copy of current state and/or national license/certification
- One-page essay describing their personal and professional skills and accomplishments, interests, career goals, and how the Imaging Informatics program will help achieve them
- Telephone interview (to be scheduled after application has been submitted)
- show proof of having completed a medical radiography associate-level certificate from an accredited institution, or show compliance with the American Registry of Radiologic Technology (ARRT) regulations for limited technicians using computed radiography (CR) and direct capture radiography (DR)
- have at least two years of experience with CR or DR in their work place, or they must take a recommended CR/DR course (available online at Loma Linda University). Special considerations can be made by the program director on a case-by-case basis. For clarification and to insure proper advisement, please contact the program director, Timothy Seavey, via e-mail <tseavey@llu.edu> prior to starting the application process.
- It is preferred that applicants meet at least one of the following:
  - Certification by the American Registry of Radiologic Technology (ARRT), Diagnostic Radiography
    or
  - Good standing with the American Registry of Radiologic Technology (ARRT) Limited Tech CR/DR

The applicant's recommendations, telephone interview, and work experience are also considered in the admissions screening process.

Program requirements

Autumn Quarter		**Units**
RTII 354	Introduction to Informatics	3
RTII 368	Communication and Education in Imaging Informatics	3
Winter Quarter		
RTII 364	Administrative Issues in Informatics	3
RTII 378	Systems Management in Informatics	3
Spring Quarter		
RTII 374	Image Management in Informatics	3
RTII 384	Advanced Imaging Informatics	3
Summer Quarter		
RTII 356	Information Technology in Radiology	3
RTII 358	PACS Planning and Implementation	3
REL_ 4__	Religion elective	2
	Total Units:	**26**

Religion course is selected based upon academic plan with the student.

Time to complete the program

44 weeks (4 academic quarters) — based on half-time enrollment

Medical Dosimetry — Certificate (B.S. in Physics Track, A.S. in Radiation Therapy Track)

Program director
Baldev Patyal

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.

Mission statement

"To make man whole" reflects the mission statement of Loma Linda University and Medical Center. It is the mission of the program to encourage the personal and professional growth of students through their integrated development—intellectual, physical, social, and spiritual—as they prepare to serve humankind.

Goals and student learning outcomes

The student learning outcomes (SLOs) of the Medical Dosimetry Program are:

1. Students will demonstrate critical thinking by performing hand calculations, understanding physical limitations of treatment machines in relationship to treatment planning, and optimizing treatment plans.
2. Students will be clinically competent at constructing deliverable treatment plans, calculating monitor units for clinical set-ups, and demonstrating knowledge of the quality assurance process.
3. Students will be able to communicate effectively from verbal, written, and oral presentation perspectives.
4. Students will demonstrate professionalism by treating all persons with respect, demonstrating responsibility and accountability for actions, and understanding HIPPA laws.

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 program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT).

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

Track 1—A.S. in radiation therapy technologist track

- ARRT registration in radiation therapy technology, with a minimum of two years postgraduate clinical experience
- Must hold bachelor's degree (any major) in addition to radiation therapy certification
- College algebra
- Trigonometry

Track 2—B.S. physics track

- a baccalaureate degree in physics, mathematics, or equivalent from an accredited university
- Anatomy and physiology (no laboratory required)
- Medical terminology
- Eight hours in a radiation oncology department observing the work of the medical dosmetrist

Program requirements

- Certificate in Medical Dosimetry (A.S. in Radiation Therapy Track) (p. 136)
- Certificate in Medical Dosimetry (B.S. in Physics/Mathematics Track) (p. 137)
- Certificate in Medical Dosimetry - Comparison (p. 137)

Certificate in Medical Dosimetry (A.S. in Radiation Therapy Track)

First Year		
		Units
RTMD 301	Treatment Planning I	2
RTMD 307	Principles of Brachytherapy	2
RTMD 309	Radiation Therapy Core--Concept Review	1
RTMD 310	Applied Math for Medical Dosimetry	1
RTMD 355	Physical Principles of Radiation Therapy I	3
RTMD 356	Physical Principles of Radiation Therapy II	3
RTMD 971	Practicum	10
RTMD 972	Practicum	9
RTMD 973	Practicum	10
RTMR 334	CT and Cross-sectional Anatomy	2
RTSI 369	CT Physics	2
Second Year		
RELE 457	Christian Ethics and Health Care	2
RTMD 302	Treatment Planning II	2
RTMD 305	Special Topics	2
RTMD 314	Quality Assurance, with Laboratory	2
RTMD 974	Practicum	11
RTMD 975	Practicum	11
	Total Units:	**75**

Time to complete the program

56 weeks (5 academic quarters) — based on full-time enrollment

Certificate in Medical Dosimetry (B.S. in Physics/Mathematics Track)

First Year		
		Units
RTMD 301	Treatment Planning I	2
RTMD 307	Principles of Brachytherapy	2
RTMD 355	Physical Principles of Radiation Therapy I	3
RTMD 356	Physical Principles of Radiation Therapy II	3
RTMD 961	Practicum	8
RTMD 962	Practicum	10
RTMD 963	Practicum	9
RTMR 285	Principles of Radiography I	3
RTMR 334	CT and Cross-sectional Anatomy	2
RTSI 369	CT Physics	2
RTTH 332	Radiation Biology	1
RTTH 344	Radiation Therapy Procedures	2
RTTH 364	Radiation Oncology I	2
RTTH 365	Radiation Oncology II	2
RTTH 366	Radiation Oncology III	2
Second Year		
RELE 457	Christian Ethics and Health Care	2
RTMD 302	Treatment Planning II	2
RTMD 305	Special Topics	2
RTMD 314	Quality Assurance, with Laboratory	2
RTMD 964	Practicum	11
RTMD 965	Practicum	11
	Total Units:	**83**

Time to complete the program

56 weeks (5 academic quarters) — based on full-time enrollment

Medical Dosimetry — Certificate (B.S. in Physics Track, A.S. in Radiation Therapy Track) Comparison

First Year	Course Title	BS in Physics Track	AS in Radiation Therapy Track
RTMD 301	Treatment Planning I	2.0	2.0
RTMD 307	Principles of Brachytherapy	2.0	2.0
RTMD 355	Physical Principles of Radiation Therapy I	3.0	3.0
RTMD 356	Physical Principles of Radiation Therapy II	3.0	3.0
RTMR 334	CT and Cross-sectional Anatomy	2.0	2.0
RTSI 369	CT Physics	2.0	2.0
RTMD 961	Practicum	8.0	
RTMD 962	Practicum	10.0	
RTMD 963	Practicum	9.0	
RTMR 285	Principles of Radiography I	3.0	
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	
RTMD 309	Radiation Therapy Core--Concept Review		1.0
RTMD 310	Applied Math for Medical Dosimetry		1.0
RTMD 971	Practicum		10.0
RTMD 972	Practicum		9.0
RTMD 973	Practicum		10.0
Totals		**53.0**	**45.0**
Second Year	**Course Title**	**BS in Physics Track**	**AS in Radiation Therapy Track**
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	11.0	
RTMD 965	Practicum	11.0	
RTMD 974	Practicum		11.0
RTMD 975	Practicum		11.0
Totals		**30.0**	**30.0**
Overall Totals		**83.0**	**75.0**

Medical Radiography — A.S.

Program director
Brenda L. Boyd

Program coordinator, Saudi Arabia campus
Abdul Fattah Rachdan

Medical advisor
Samuel M. Randolph

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 regionally 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 (forty hours/week). Students are off on all national holidays and quarter breaks.

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 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.
16. Prepare students for leadership and for providing a positive patient experience.

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 the 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.

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, Loma Linda University-Murrieta, 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, Riverside Community Hospital, Highland Springs, San Gorgonio, or St. Mary Regional Medical Center.

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.

Quarterly fee

In addition to the cost of the ASMR program, additional fees include a quarterly University fee and a program fee of $40.00

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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- high school completion from an accredited institution or passed the GED
- completed a minimum of 42 quarter units (or 28 semester units) at an accredited college or university.
- observation experience—A minimum of twelve hours of observation in a radiology department is required. Contact the department to obtain the appropriate form.

Prerequisites

- Human anatomy and physiology, complete sequence with laboratory
- Two years high school mathematics at algebra level or above, with grades of C or above; or intermediate algebra in college (college algebra is preferred)
- Medical terminology
- One year high school chemistry or physics; or introductory chemistry, introductory physics in college (one quarter/semester) (physics is preferred)
- General psychology or general sociology
- English composition, complete sequence
- Interpersonal communication, oral communication, or public speaking
- Computer course one year high school or one quarter/semester college (or by faculty approval if substantial documentation is shown to prove computer literacy)
- Religion is a requirement only if a student attended a Seventh-day Adventist college or university (1 unit of religion for every 12 units earned at an SDA college)
- Electives to meet the minimum total requirements of 42 units (such as;cultural anthropology, nutrition, critical thinking, Spanish, or computers)

Program requirements

On Campus

Sophomore

Autumn Quarter

AHCJ 326	Fundamentals of Health Care	2
AHCJ 328	Wholeness Portfolio I	0
REL_4__ Upper-division Religion		2
RTMR 202	Clinical Orientation	3
RTMR 224	Legal Issues in Medical Radiography	1
RTMR 246	Professional Communication	2
RTMR 253	Medical Radiography Procedures I	2
RTMR 253L	Medical Radiography Procedures Laboratory I	1
RTMR 285	Principles of Radiography I	3

Winter Quarter

AHCJ 328	Wholeness Portfolio I	0
RTMR 221	Radiologic Patient Care	2
RTMR 254	Medical Radiography Procedures II	2
RTMR 254L	Medical Radiography Procedures Laboratory II	1
RTMR 284	Radiation Protection and Biology	2
RTMR 286	Principles of Radiography II	3
RTMR 371	Medical Radiography Affiliation I	5

Spring Quarter

AHCJ 328	Wholeness Portfolio I	1
RTMR 247	Languages for Radiographers	1
RTMR 255	Medical Radiography Procedures III	2
RTMR 255L	Medical Radiography Procedures Laboratory III	1
RTMR 283	Radiologic Physics	3
RTMR 287	Principles of Radiography III	2
RTMR 372	Medical Radiography Affiliation II	7

Clinical Year

Summer Quarter

RTMR 373	Medical Radiography Affiliation III	12

Autumn Quarter

REL_4__ Upper-division Religion		2
RTMR 305	Introduction to Computed Tomography I	2
RTMR 321	Radiographic Image Evaluation	2
RTMR 374	Medical Radiography Affiliation IV	10

Winter Quarter

RTMR 306	Introduction to Computed Tomography II	2
RTMR 345	Radiologic Pathology	2
RTMR 363	Comprehensive Review I	1
RTMR 375	Medical Radiography Affiliation V	10

Spring Quarter

RTMR 342	Professional Development	1
RTMR 365	Comprehensive Review II	2
RTMR 386	Medical Radiography Affiliation VI	10
	Total Units:	**104**

Saudi Arabia

Sophomore

Autumn Quarter

AHCJ 328	Wholeness Portfolio I	0
REL_4__ Upper-division Religion		2
RTMR 202	Clinical Orientation	3
RTMR 224	Legal Issues in Medical Radiography	1
RTMR 246	Professional Communication	2
RTMR 253	Medical Radiography Procedures I	2
RTMR 253L	Medical Radiography Procedures Laboratory I	1
RTMR 285	Principles of Radiography I	3

Winter Quarter

AHCJ 328	Wholeness Portfolio I	0
RTMR 221	Radiologic Patient Care	2
RTMR 254	Medical Radiography Procedures II	2

RTMR 254L	Medical Radiography Procedures Laboratory II	1
RTMR 284	Radiation Protection and Biology	2
RTMR 286	Principles of Radiography II	3
RTMR 371	Medical Radiography Affiliation I	5
Spring Quarter		
AHCJ 328	Wholeness Portfolio I	1
RTMR 247	Languages for Radiographers	1
RTMR 255	Medical Radiography Procedures III	2
RTMR 255L	Medical Radiography Procedures Laboratory III	1
RTMR 283	Radiologic Physics	3
RTMR 287	Principles of Radiography III	2
RTMR 372	Medical Radiography Affiliation II	7
Clinical Year		
Summer Quarter		
RTMR 373	Medical Radiography Affiliation III	12
Autumn Quarter		
REL_4__	Upper-division Religion	2
RTMR 305	Introduction to Computed Tomography I	2
RTMR 321	Radiographic Image Evaluation	2
RTMR 374	Medical Radiography Affiliation IV	10
Winter Quarter		
RTMR 306	Introduction to Computed Tomography II	2
RTMR 345	Radiologic Pathology	2
RTMR 363	Comprehensive Review I	1
RTMR 375	Medical Radiography Affiliation V	10
Spring Quarter		
RTMR 342	Professional Development	1
RTMR 365	Comprehensive Review II	2
RTMR 386	Medical Radiography Affiliation VI	10
	Total Units:	**102**

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 G.P.A. of 2.5 is required for all courses in the program.

Time to complete the program

2 years (7 academic quarters) — full-time enrollment required

Comparison

See the comparison (p. 140) of the On Campus and Saudi Arabia tracks of this program.

Medical Radiography A.S. — On Campus, Saudi Arabia Comparison

Sophomore Year: Autumn Quarter	Course Title	On Campus	Saudi Arabia
AHCJ 328	Wholeness Portfolio I	0.0	0.0
REL_ 4__	Upper-division Religion	2.0	2.0
RTMR 202	Clinical Orientation	3.0	3.0
RTMR 224	Legal Issues in Medical Radiography	1.0	1.0
RTMR 246	Professional Communication	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
AHCJ 326	Fundamentals of Health Care	2.0	
Totals		**16.0**	**14.0**

Sophomore Year: Winter Quarter	Course Title	On Campus	Saudi Arabia
AHCJ 328	Wholeness Portfolio I	0.0	0.0
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	3.0	3.0
RTMR 371	Medical Radiography Affiliation I	5.0	5.0
Totals		**15.0**	**15.0**

Sophomore Year: Spring Quarter	Course Title	On Campus	Saudi Arabia
AHCJ 328	Wholeness Portfolio I	1.0	1.0
RTMR 247	Languages for Radiographers	1.0	1.0
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	2.0	2.0
RTMR 372	Medical Radiography Affiliation II	7.0	7.0
Totals		**17.0**	**17.0**

Clinical Year: Summer Quarter	Course Title	On Campus	Saudi Arabia
RTMR 373	Medical Radiography Affiliation III	12.0	12.0
Totals		**12.0**	**12.0**

Clinical Year: Autumn Quarter	Course Title	On Campus	Saudi Arabia
REL_ 4__	Upper-division Religion	2.0	2.0
RTMR 305	Introduction to Computed Tomography I	2.0	2.0
RTMR 321	Radiographic Image Evaluation	2.0	2.0
RTMR 374	Medical Radiography Affiliation IV	10.0	10.0
Totals		**16.0**	**16.0**

Clinical Year: Winter Quarter	Course Title	On Campus	Saudi Arabia
RTMR 306	Introduction to Computed Tomography II	2.0	2.0

RTMR 345	Radiologic Pathology	2.0	2.0
RTMR 363	Comprehensive Review I	1.0	1.0
RTMR 375	Medical Radiography Affiliation V	10.0	10.0
Totals		**15.0**	**15.0**
Clinical Year: Spring Quarter	**Course Title**	**On Campus**	**Saudi Arabia**
RTMR 342	Professional Development	1.0	1.0
RTMR 365	Comprehensive Review II	2.0	2.0
RTMR 386	Medical Radiography Affiliation VI	10.0	10.0
Totals		**13.0**	**13.0**
Overall Totals		**104.0**	**102.0**

Nuclear Medicine Technology — B.S.

Program director
Erma Ezpeleta

The Program

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 eighteen-to-twenty-one month 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 skills necessary for the practice of nuclear medicine.
2. Practice safe and compassionate patient care.
3. Demonstrate critical thinking in nuclear medicine.
4. Maintain skills and knowledge by interacting with fellow professionals, attending educational conferences, and staying current with changing technology.
5. Apply quantitative reasoning to the practice of nuclear medicine.
6. Obtain required clinical competencies by showing how to competently utilize a variety of NM and CT equipment.
7. Interact professionally with people of diverse ages and backgrounds in the practice of nuclear medicine.

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).

Accreditation

The program is approved by the California Department of Public Health, Radiologic Health Branch, P.O. Box 942732, Sacramento, CA 94234-7320. 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; website: <http://www.wascweb.org.org> or <wascsr@wascsr.org>.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- An Associate in Science degree or equivalent (minimum of 96 quarter units that are applicable to the B.S. degree program)
- G.P.A. of 3.0 or better
- A minimum of 24 hours of career observation (volunteer/employee) in a Nuclear Medicine Department is required prior to the interview. The observation form is located online <www.llu.edu> under School of Allied Health Professions, under "forms". Print it out and take it with you to the facility you will be observing.
- Interview

Certifications

Applicants must have all of the following certifications completed prior to the beginning of the school year.

- Current CPR card from the American Heart Association (adult and child). Classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.
- Venipuncture*
- ECG/EKG Interpretation*

* these certifications are available at LLU just prior to the start of the program, if you cannot find them elsewhere.

Prerequisite courses

Applicants must complete the following subjects at an accredited college or university prior to entering the program. Please note: C- grades are not transferable for credit.

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—Chemistry (Introductory or general) with laboratory, one year

Introductory or general physics with laboratory

Human Anatomy and Physiology with laboratory (complete sequence)

College algebra

Social Sciences—General psychology

Cultural anthropology or an approved course dealing with cultural diversity

Introduction to sociology

Lifespan development

Communication—English composition, complete sequence (required)

Oral communication

Health and Wellness—Physical education (2 activities)

Health or nutrition

Other—Medical terminology

Electives—Meet minimum total of 96 quarter units

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Program requirements

ARRT certified students

First Year

Autumn Quarter

AHCJ 493	Senior Portfolio I	3
RELE 457	Christian Ethics and Health Care	3
RTCH 318	Imaging Modalities	2
RTNM 351	Principles of Nuclear Medicine I	4
RTNM 351L	Principles of Nuclear Medicine I Laboratory	1

Winter Quarter

HCAD 414	Sustainability for Health Care Management	3
RTNM 352	Principles of Nuclear Medicine II	4
RTNM 352L	Principles of Nuclear Medicine II Laboratory	1
RTNM 353	Nuclear Medicine Procedures I	2
RTNM 353L	Nuclear Medicine Procedures Laboratory	1
RTNM 361	Radiopharmacy I	2

Spring Quarter

RTNM 354	Nuclear Medicine Procedures II	2
RTNM 362	Radiopharmacy II	3
RTNM 431	Clinical Affiliation I	2
RTNM 357	Instrumentation I	4
RTNM 357L	Instrumentation I Laboratory	1

Second Year

Summer Quarter

RTCH 464	Moral Leadership	4
RTNM 358	Instrumentation II	4
RTNM 358L	Instrumentation II Laboratory	1
RTNM 432	Clinical Affiliation II	3
RTSI 364	CT Patient Care and Procedures	2
RTSI 367	Cross-sectional Radiographic Anatomy	2

Autumn Quarter

AHCJ 225	History of Radiation and Imaging 1890-1940	3
REL_ 4__	Upper-division religion	3
RTCH 385	Radiologic Trends in Health Care	2
RTNM 363	Nuclear Cardiology	3
RTNM 433	Clinical Affiliation III	3
RTSI 369	CT Physics	2

Winter Quarter

AHCJ 226	History of Radiation and Imaging 1940-Present Day	3
RTCH 467	Management of a Radiologic Service	3
RTNM 355	PET/CT	2
RTNM 364	Nuclear Medicine Statistics	3
RTNM 434	Clinical Affiliation IV	3

Spring Quarter

REL_ 4__	Upper-division religion	3
RTCH 325	Applications for Managers	2
RTCH 415	Radiation Emergency Procedures	3
RTNM 381	Topics in Nuclear Medicine I	3
RTNM 435	Clinical Affiliation V	3

Third Year

Summer Quarter

AHCJ 494	Senior Portfolio II	3
RTCH 387	Writing for Health-Care Professionals	3
RTNM 382	Topics in Nuclear Medicine II	1
RTNM 436	Clinical Affiliation VI	3
	Total Units:	**108**

Time to complete the program

2 years (8 quarters) at LLU — full-time enrollment required

Non-ARRT certified students

First Year

Summer Quarter		**Units**
AHCJ 326	Fundamentals of Health Care	2
RTCH 283	Basic Imaging	2
RTCH 283L	Radiation Clinical Basics Laboratory	1
RTCH 285	The Principles and Physics of Rad	4
RTMR 224	Legal Issues in Medical Radiography	1
RTMR 284	Radiation Protection and Biology	2

Autumn Quarter

AHCJ 493	Senior Portfolio I	3
RELE 457	Christian Ethics and Health Care	3
RTCH 318	Imaging Modalities	2
RTNM 351	Principles of Nuclear Medicine I	4
RTNM 351L	Principles of Nuclear Medicine I Laboratory	1

Winter Quarter

HCAD 414	Sustainability for Health Care Management	3
RTNM 352	Principles of Nuclear Medicine II	4

RTNM 352L	Principles of Nuclear Medicine II Laboratory	1
RTNM 353	Nuclear Medicine Procedures I	2
RTNM 353L	Nuclear Medicine Procedures Laboratory	1
RTNM 361	Radiopharmacy I	2
Spring Quarter		
RTNM 354	Nuclear Medicine Procedures II	2
RTNM 357	Instrumentation I	4
RTNM 357L	Instrumentation I Laboratory	1
RTNM 362	Radiopharmacy II	3
RTNM 431	Clinical Affiliation I	2
Second Year		
Summer Quarter		
RTCH 464	Moral Leadership	4
RTNM 358	Instrumentation II	4
RTNM 358L	Instrumentation II Laboratory	1
RTNM 432	Clinical Affiliation II	3
RTSI 364	CT Patient Care and Procedures	2
RTSI 367	Cross-sectional Radiographic Anatomy	2
Autumn Quarter		
AHCJ 225	History of Radiation and Imaging 1890-1940	3
REL_ 4__	Upper-division Religion	3
RTCH 385	Radiologic Trends in Health Care	2
RTNM 363	Nuclear Cardiology	3
RTNM 433	Clinical Affiliation III	3
RTSI 369	CT Physics	2
Winter Quarter		
AHCJ 226	History of Radiation and Imaging 1940-Present Day	3
RTCH 467	Management of a Radiologic Service	3
RTNM 355	PET/CT	2
RTNM 364	Nuclear Medicine Statistics	3
RTNM 434	Clinical Affiliation IV	3
Spring Quarter		
REL_ 4__	Upper-division religion	3
RTCH 325	Applications for Managers	2
RTCH 415	Radiation Emergency Procedures	3
RTNM 381	Topics in Nuclear Medicine I	3
RTNM 435	Clinical Affiliation V	3
Third Year		
Summer Quarter		
AHCJ 494	Senior Portfolio II	3
RTCH 387	Writing for Health-Care Professionals	3
RTNM 382	Topics in Nuclear Medicine II	1-3
RTNM 436	Clinical Affiliation VI	3
	Total Units:	**120**

A minimum grade of C (2.0) is required for all courses in this program.

Time to complete the program

2.33 years (9 quarters) — full-time enrollment required

Comparison

See the comparison (p. 144) of the ARRT certified students and Non-ARRT certified students tracks of this program.

Nuclear Medicine Technology B.S.— ARRT and Non-ARRT Certified Students Comparison

First Year: Summer Quarter	Course Title	ARRT Certified	Non-ARRT Certified
AHCJ 326	Fundamentals of Health Care		2.0
RTCH 283	Basic Imaging		2.0
RTCH 283L	Radiation Clinical Basics Laboratory		1.0
RTCH 285	The Principles and Physics of Rad		4.0
RTMR 224	Legal Issues in Medical Radiography		1.0
RTMR 284	Radiation Protection and Biology		2.0
Totals			**12.0**
First Year: Autumn Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
AHCJ 493	Senior Portfolio I	3.0	3.0
RELE 457	Christian Ethics and Health Care	3.0	3.0
RTCH 318	Imaging Modalities	2.0	2.0
RTNM 351	Principles of Nuclear Medicine I	4.0	4.0
RTNM 351L	Principles of Nuclear Medicine I Laboratory	1.0	1.0
Totals		**13.0**	**13.0**
First Year: Winter Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
HCAD 414	Sustainability for Health Care Management	3.0	3.0
RTNM 352	Principles of Nuclear Medicine II	4.0	4.0
RTNM 352L	Principles of Nuclear Medicine II Laboratory	1.0	1.0
RTNM 353	Nuclear Medicine Procedures I	2.0	2.0
RTNM 353L	Nuclear Medicine Procedures Laboratory	1.0	1.0
RTNM 361	Radiopharmacy I	2.0	2.0
Totals		**13.0**	**13.0**
First Year: Spring Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
RTNM 354	Nuclear Medicine Procedures II	2.0	2.0
RTNM 357	Instrumentation I	4.0	4.0
RTNM 357L	Instrumentation I Laboratory	1.0	1.0
RTNM 362	Radiopharmacy II	3.0	3.0
RTNM 431	Clinical Affiliation I	2.0	2.0
Totals		**12.0**	**12.0**
Second Year: Summer Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
RTCH 464	Moral Leadership	4.0	4.0
RTNM 358	Instrumentation II	4.0	4.0
RTNM 358L	Instrumentation II Laboratory	1.0	1.0
RTNM 432	Clinical Affiliation II	3.0	3.0
RTSI 364	CT Patient Care and Procedures	2.0	2.0
RTSI 367	Cross-sectional Radiographic Anatomy	2.0	2.0
Totals		**16.0**	**16.0**
Second Year: Autumn Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
AHCJ 225	History of Radiation and Imaging 1890-1940	3.0	3.0
REL_ 4__ Upper-division Religion		3.0	3.0
RTCH 385	Radiologic Trends in Health Care	2.0	2.0
RTNM 363	Nuclear Cardiology	3.0	3.0
RTNM 433	Clinical Affiliation III	3.0	3.0
RTSI 369	CT Physics	2.0	2.0
Totals		**16.0**	**16.0**

Second Year: Winter Quarter	Course Title	ARRT Certified	Non-ARRT Certified
AHCJ 226	History of Radiation and Imaging 1940-Present Day	3.0	3.0
RTCH 467	Management of a Radiologic Service	3.0	3.0
RTNM 355	PET/CT	2.0	2.0
RTNM 364	Nuclear Medicine Statistics	3.0	3.0
RTNM 434	Clinical Affiliation IV	3.0	3.0
Totals		**14.0**	**14.0**
Second Year: Spring Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
REL_ 4__ Upper-division Religion		3.0	3.0
RTCH 325	Applications for Managers	2.0	2.0
RTCH 415	Radiation Emergency Procedures	3.0	3.0
RTNM 381	Topics in Nuclear Medicine I	3.0	3.0
RTNM 435	Clinical Affiliation V	3.0	3.0
Totals		**14.0**	**14.0**
Third Year: Summer Quarter	**Course Title**	**ARRT Certified**	**Non-ARRT Certified**
AHCJ 494	Senior Portfolio II	3.0	3.0
RTCH 387	Writing for Health-Care Professionals	3.0	3.0
RTNM 382	Topics in Nuclear Medicine II	1.0	1.0
RTNM 436	Clinical Affiliation VI	3.0	3.0
Totals		**10.0**	**10.0**
Overall Totals		**108.0**	**120.0**

Radiation Sciences — B.S.

Program director
Timothy Seavey

Assistant program director
Kathryn Cockrill

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 modalities. In addition, commercial enterprises and state governments continually need technologists with advanced training to serve as customer representatives, technical consultants, and health physicists.

The baccalaureate degree is comprised of a minimum of 192 quarter units in four elements:

- Loma Linda University general education (GE) requirements
- Professional certification in an imaging modality
- The radiation science core requirements (on-campus or online)
- An area of emphasis (administration, education, clinical practice, science, advanced medical imaging, pre-MSRA, or imaging informatics)

Electives to meet the needs of the individual students 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, pre-MSRA, clinical specialties, or administration. The administration track has a minor in health-care administration embedded into the course work.

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. Loma Linda University and the Department of Radiation Technology cannot guarantee employment.

Program student learning outcomes

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

1. Develop meaningful interactions in health care.
2. Demonstrate moral leadership.
3. Discuss health-care advancement and sustainability.

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

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. 909/558-4977.

Admissions

Applicants may enter the B.S. degree program at any quarter. Applications are accepted year-round. Contact program director for advisement. Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- An Associate in Science degree or equivalent (minimum of 96 quarter units that are applicable to the B.S. degree program)
- be a graduate of an approved program in radiologic technology, computed tomography, magnetic resonance imaging, radiation therapy, nuclear medicine, cardiovascular imaging, or sonography (ultrasound).
- 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.

Prerequisites/corequisites

A maximum of 70 semester or 105 quarter units (didactic only) from an accredited junior college will be accepted as transfer credit. Students who have completed a hospital training program are allowed up to 50 junior college-level quarter units of academic credit on the basis of their registry certificate. Students should fall within 12 quarter units of completion of general education (GE) requirements in order to be considered for the Bachelor of Science core program OR have developed an academic plan with the program director. General education 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 full-time (12 units) attendance at a Seventh-day Adventist college or university. Religion is included in the B.S. degree core as a corequisite.

Natural Sciences

Two years of high school mathematics with grades of C or above, or intermediate algebra in college

Human anatomy and physiology with laboratory, one semester/quarter minimum; or general biology with laboratory, complete sequence

Additional natural science units from: chemistry, geology, mathematics, physics, and statistics. Must have a total of 12 quarter units of natural sciences (no more than 6 units in any one area from the natural sciences may be used)

Social Sciences

Must have a total of 12 quarter units of social science. Select from: economics, geography, political science, psychology, sociology, or anthropology.

The B.S. degree program is approved to meet the cultural diversity requirements of the University in lieu of cultural 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 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.

Students who have completed their general education requirements can select courses from the B.S. degree didactic emphases to complete necessary elective course work.

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Program requirements

Program available online

Core		
AHCJ 475	Health-Care Research and Statistics	4
AHCJ 493	Senior Portfolio I	3
AHCJ 494	Senior Portfolio II	3
HCAD 305	Health-Care Communication	3
HCAD 414	Sustainability for Health Care Management	3
RTCH 325	Applications for Managers	2
RTCH 385	Radiologic Trends in Health Care	2
RTCH 387	Writing for Health-Care Professionals	3
RTCH 464	Moral Leadership	4
RTCH 467	Management of a Radiologic Service	3
Religion		
RELE 457	Christian Ethics and Health Care (2-3) [1]	2
RELR 415	Christian Theology and Popular Culture (2-3) [1]	2
RELR 475	Art of Integrative Care (2-3) [1]	2
RELT 423	Loma Linda Perspectives	2-3
or RELT 436	Adventist Heritage and Health	

Area of emphasis	
Select an area of emphasis	6-24
Electives	
Elective (As needed to fulfill the total unit requirement for the degree)	34-52
Total Units	**96**

[1] May substitute for another REL_ course

Areas of emphasis:

Administration

(available both on campus and online)

HCAD 316	Economics for Health-Care Managers	3
HCAD 336	Legal Environment of Health Care	3
HCAD 374	Health-Care Human Resources	3
HCAD 464	Health-Care Finance	3
RTCH 413	Management Practicum I	3
RTCH 414	Management Practicum II	3
RTCH 418	Health Information Management and Radiology Coding for Radiology Managers	3
RTCH 485	Digital Management in Radiology	3
Total Units		**24**

Advanced medical imaging

(available on campus only)

AHCJ 341	Cultural Perspectives in Professional Practice I (Only for internationally trained radiographers)	3
AHCJ 342	Cultural Perspectives in Professional Practice II (Only for internationally trained radiographers)	3
AHCJ 343	Cultural Perspectives in Professional Practice III (Only for internationally trained radiographers)	3
RTAM 401	Advanced Clinical	5
RTAM 402	Advanced Clinical	10
RTAM 403	Advanced Clinical	10
RTAM 404	Advanced Clinical	10
RTAM 405	Advanced Clinical	2
RTAM 454	Advanced Patient Care	3
RTAM 458	Advanced Imaging Procedures	3
RTAM 464	Pathology	3
RTAM 468	Advanced Imaging Principles	3
RTAM 474	Patient Education and Evidence-Based Medicine	3
Total Units		**61**

Education

(available on campus and online)

RTED 411	Student-Teaching Practicum I	3
RTED 412	Student-Teaching Practicum II	3
RTED 474	Instructional Techniques	3
RTED 475	Curriculum Development in Health Sciences	3
RTED 476	Adult Learning Theory	3
RTED 477	Learning Activities and Assessment	3
RTED 478	Online Instructional Design	3
RTED 485	Technology in Education	3
Total Units		**24**

Imaging informatics

(available on campus and online)

RTII 354	Introduction to Informatics	3
RTII 356	Information Technology in Radiology	3
RTII 358	PACS Planning and Implementation	3
RTII 364	Administrative Issues in Informatics	3
RTII 368	Communication and Education in Imaging Informatics	3
RTII 374	Image Management in Informatics	3
RTII 378	Systems Management in Informatics	3
RTII 384	Advanced Imaging Informatics	3
Total Units		**24**

Pre-MSRA

(available on campus and online)

AHCJ 225	History of Radiation and Imaging 1890-1940	3
AHCJ 226	History of Radiation and Imaging 1940-Present Day	3
RTAM 454	Advanced Patient Care	3
RTAM 478	Introduction to Computed Tomography	3
RTII 354	Introduction to Informatics	3
Total Units		**15**

Science

15-20 quarter units selected from the natural sciences chosen from the list below. Courses must be taken from two different content areas with the approval of the program director. These courses are taken at a local college/university. A minimum grade of C+ (2.3) is required for all courses.

General biology with laboratory (full sequence of anatomy and physiology, microbiology)	8
General or inorganic chemistry with laboratory	8
Organic chemistry with laboratory	8
General physics with laboratory	8
Total Units	**15-20**

Clinical practice (12-31 units)

Available on campus only

A 6-24 month, full-time internship in a clinical specialty can be selected from the following areas:

- Diagnostic Medical Sonography (p. 133) (24 didactic units count toward the B.S. degree)
- Diagnostic Cardiac Sonography (p. 134) (17 didactic units count toward the B.S. degree)
- Special Imaging (Computed Tomography (p. 153) and/or Magnetic Resonance Imaging (p. 153) (6-12 units)

- Students with special imaging course work totaling less than 12 units must take additional science courses to complete the emphasis. Courses must be approved by the program director.

- Radiation Therapy Technology (p. 149) (27 didactic units count toward the B.S. degree))
- Special Imaging in Cardiovascular Imaging (34 units)

Acceptance into these specialties is separate from acceptance into the B.S. degree program.

Length of program

2 years (6 academic quarters) at LLU) — based on full-time enrollment; part time permitted

Radiation Sciences — M.S.R.S. (Online Program)

Program director
Mike Iorio

The program

The faculty of the Master of Science in Radiation Sciences Program is committed to educate and expand the knowledge and expertise of radiology health professionals by providing radiology practitioners an opportunity to advance their education.

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.

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 a three-day orientation. Subsequently, all courses will be 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 with program director's approval.

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.

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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Bachelor's degree from an accredited institution (international degrees must be evaluated for U.S. equivalency)
- minimum G.P.A. of 3.0
- Certification by the American Registry of Radiologic Technologists (or equivalent) in a radiation sciences discipline
- Two-to three-page essay describing personal and professional skills and accomplishments, interests, and how earning the M.S.R.S. degree will help achieve career goals. This essay is included in the online application process.
- Phone interview (to be scheduled after application has been submitted)
- Recommended courses: statistics and research methods

Program requirements

Required		
AHCJ 549	Professional Responsibility in Allied Health Professions	3
AHCJ 550	Organizational Theory	3
AHCJ 566	Theoretical Foundations of Leadership	3
AHCJ 567	Personal Leadership	3
AHCJ 576	Basics of Marketing	3
AHCJ 578	Health-Care Finance and Reimbursement	3
AHCJ 579	Instructional Effectiveness	3
AHCJ 586	Curricula Planning in Health Sciences	3
AHCJ 588	Fundamentals of Human Resource Management	3
AHCJ 589	Strategic Planning in Health-Care Organizations	3

AHCJ 595	Research and Statistics Concepts and Methods: Intermediate	3
RELT 563	Health Care, Humanity, and God	3
RTRS 584	Management of Imaging Informatics	3
RTRS 614	Professional Portfolio	1
RTRS 615	Advances in Technology: Educational and Managerial Issues	3
RTRS 621	Capstone Project I	3
RTRS 622	Capstone Project II	3
Total Units		**49**

Research requirement

Students will prepare at least one publishable manuscript to be submitted to the department's 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.

Time to complete the program

2.33 years (8 academic quarters) — part-time only

Radiation Therapy Technology — Certificate

Program director
Carol A. Davis

Radiation therapy (or radiation oncology) is the medical use of ionizing radiation to treat cancer and control malignant cell growth. Radiation therapy is commonly combined with other modes of treatment for cancer, such as surgery, chemotherapy, and hormone therapy. Radiation therapists should be able to think critically, work with computers, and be able to work on a treatment team. Patient care and empathy are also important assets. The Radiation Therapy Program certificate is a full-time, fifteen-month program. It is intended for radiographers who seek additional specialization. The program covers forty hours per week and follows the main University calendar.

Mission

The mission statement of the program, "To make man whole," reflects the mission statement of the School of Allied Health Professions and the sponsoring institutions—namely Loma Linda University and Loma Linda University Medical Center. It is the mission of these institutions to encourage the personal and professional growth of students, faculty, and staff through the integrated development of the intellectual, physical, social, and spiritual aspects of each person as s/he prepares to serve humankind.

Program goals and student learning outcomes (SLOs)

1. Students will demonstrate clinical competence as an entry-level radiation therapist.
   - Students will be able to effectively read a variety of treatment data and use data to accurately set up patients
   - Students will be able to accurately utilize radiation protection principles and perform Q.A. tests in daily practice.
2. Students will develop a caring, empathetic, and respectful attitude.
   - Students will display empathy and understanding towards patients, patients' families, and the professional community.
   - Students will treat patients, patients' families, and the professional community with professional demeanor.
   - Students will understand the code of ethics for radiation therapists/radiologic technologists, as well as the scope of practice.
   - Students will be aware of HIPPA rules and regulations.
3. Students will attain an advanced level of academic knowledge.
   - Students will gain an advanced level of knowledge in required areas.
   - Students will understand underlying premises of new technologies.
4. Students will demonstrate critical thinking, problem solving, and good communication skills.
   - Students will be able to integrate theory and practice.
   - Students will be able to communicate effectively and coherently with patients and all communities of interest.
5. The program will achieve the following outcomes:
   - Graduates will complete the program.
   - Graduates will pass ARRT examination boards.
   - Graduates will have job placement within six months.
   - Graduates will be satisfied with the program.
   - Employers will be satisfied with graduates of the program.

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.

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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Hold an A.S. degree in radiologic technology

- Be an ARRT-registered radiologic technologist and be a graduate of an accredited radiologic technology program
- Observation experience—A minimum of forty hours of work observation in a radiation therapy department is required.

and must have credits in the following:

- Radiation physics
- Human anatomy and physiology with laboratory, complete sequence
- College algebra (taken within the last three years)
- Radiation protection (available in professional program for those who have not taken it)
- Patient-care methods
- General psychology

or

- Hold an A.S. degree in nursing
- Be a registered nurse or be a graduate of an accredited allied health program (must hold an A.S. degree or equivalent)

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

Program requirements

Required		
AHCJ 403	Pathology II	3
REL_ 4__	Upper-Division Religion	2
RTMR 334	CT and Cross-sectional Anatomy	2
RTTH 332	Radiation Biology	1
RTTH 342	Patient-Care Practices in Radiation Therapy	2
RTTH 344	Radiation Therapy Procedures	2
RTTH 348	Radiation Therapy Review	1
RTTH 355	Physical Principles of Radiation Therapy I	3
RTTH 356	Physical Principles of Radiation Therapy II	3
RTTH 357	Applied Dosimetry	2
RTTH 364	Radiation Oncology I	2
RTTH 365	Radiation Oncology II	2
RTTH 366	Radiation Oncology III	2
RTTH 971	Radiation Therapy Affiliation I	9
RTTH 972	Radiation Therapy Affiliation II	10
RTTH 973	Radiation Therapy Affiliation III	10
RTTH 974	Radiation Therapy Affiliation IV	12
RTTH 975	Radiation Therapy Affiliation V	11
Total Units		**79**

Time to complete the program

56 weeks (5 academic quarters) — full-time enrollment required

Radiography Advanced Placement — Certificate

Program director
William J. Edmunds

The purpose of the Radiography Advanced Placement Program is to prepare candidates to take the American Registry of Radiologic Technologists (ARRT) examination if they need to requalify due to failing the registry examination, or to enable candidates to complete the ARRT didactic and clinical requirements for the first time if they graduated from a program outside the United States.

The American Registry of Radiologic Technologists distinguishes four types of candidates eligible for this program:

1. A person who is no longer eligible under ARRT's three-year rule (beginning January 1, 2013)
2. A person who is no longer eligible under ARRT's three-attempts or three-year rule
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 program completion
4. A person who may already have completed one or more of another program's didactic and/or clinical competency requirements

Individual courses may be taken on a case-by-case basis if a candidate 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 to obtain the remediation hours needed.

School certificate

Students registering in this certificate program 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 University Records Office maintains a record of registration but not the certificate. Record 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 requirements established by the U.S. Department of Education for aid eligibility.

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.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements: Individuals must have successfully completed a radiography program (not limited permit). Students must identify a local

clinical site that will provide opportunity to complete the competencies needed prior to starting the program. See program policies for more information.

Program requirements

There are five academic and up to three clinical courses. Each candidate must complete the 31 mandatory and 15 of 35 elective 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 or third clinical course.

Required		
RTAP 221	Patient Care and Education	1
RTAP 255	Radiographic Procedures	2
RTAP 283	Equipment Operation and Quality Control	1
RTAP 284	Radiation Protection	1
RTAP 287	Image Production and Evaluation	2
RTAP 971	Clinical Affiliation	2
RTAP 972	Clinical Affiliation	2
RTAP 973	Clinical Affiliation	2
Total Units		**13**

Radiology Assistant — M.S.R.S.

Program director
Brigit Mendoza

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 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 a 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

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Bachelor's degree from a regionally accredited institution. The bachelor's degree can be in administration or science.
- Current certification in medical radiography from the American Registry of Radiologic Technologists (ARRT).
- A minimum of two years of full-time, consecutive radiography work experience.
- Current CPR certification (must complete ACLS certification prior to applying for boards).
- A course in statistics completed within the past five years.
- A course in research methods completed within the past five years.

Program requirements

First Year		
Autumn Quarter		
RELT 423	Loma Linda Perspectives	2
RTRA 521	Radiology Procedures and Image Evaluation I	3
RTRA 525	Fluoroscopy and Radiation Protection	1
RTRA 526	Radiology Reporting	1
RTRA 531	Pharmacology for RAs I	2
RTRA 534	Pathophysiology	2
RTRA 771	Clinical Internship I	2
Winter Quarter		
AHCJ 402	Pathology I	4
RTRA 510	Cross-Sectional Anatomy I	1
RTRA 522	Radiology Procedures and Image Evaluation II	3
RTRA 532	Pharmacology for RAs II	2
RTRA 541	Patient Assessment I	2
RTRA 772	Clinical Internship II	5
Spring Quarter		
AHCJ 403	Pathology II	3
RTRA 511	Cross-sectional Anatomy II	1
RTRA 523	Radiology Procedures and Image Evaluation III	3
RTRA 542	Patient Assessment II	2
RTRA 546	Topics for the Radiologist Assistant	2
RTRA 773	Clinical Internship III	6
Second Year		
Summer Quarter		
RTRA 524	Radiology Procedures and Image Evaluation IV	3
RTRA 543	Clinical Management and Education	2
RTRA 774	Clinical Internship IV	6

Autumn Quarter		
AHCJ 566	Theoretical Foundations of Leadership	3
REL_ 5__	Graduate-level Religion	3
RTRA 591	Radiologist Assistant Research Project I	1
RTRA 775	Clinical Internship V	6
Winter Quarter		
RTRA 588	Comprehensive Review I	1
RTRA 592	Radiologist Assistant Research Project II	2
RTRA 776	Clinical Internship VI	6
Spring Quarter		
RTRA 519	Medical-Legal Issues in Radiology	1
RTRA 518	Radiobiology and Health Physics	2
RTRA 589	Comprehensive Review II	1
RTRA 593	Radiologist Assistant Research Project III	2
RTRA 614	Professional Portfolio	1
RTRA 777	Clinical Internship VII	6
	Total Units:	**93**

Time to complete the program

2 years (7 academic quarters) — based on full-time enrollment

Special Imaging CT and MRI — Certificates

Program director
Kate Cockrill

Clinical coordinator
Elle Taggart

Overview of program

The computed tomography (CT) and magnetic resonance imaging (MRI) technologists work 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. These are full-time programs scheduled as follows:

CT—six-month certificate program completed in two quarters—Fall and Winter.

MRI—six-to-nine-month certificate program that requires two-to-three quarters beginning Spring Quarter.

CT/MRI— twelve-to-fifteen month certificate program completed in four academic quarters—Autumn through Summer.

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 in a variety of regions in Southern California. However, the University cannot guarantee that the student will be placed close to his/her residence.

The program's load requires 40 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.

Students will be required to submit current immunization records and undergo a background check during the registration process. For information regarding immunizations, contact student health services at <http.//www.llu.edu/central/ssweb/index.page>. Students will be responsible for paying any fees associated with immunizations and background checks.

Loma Linda University and the Department of Radiation Technology cannot guarantee employment.

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 CT and/or MRI scanning.
3. Behave according to ethical standards as a professional CT and/or 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 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.
- Detail oriented and able to work under pressure while demonstrating critical-thinking and problem-solving skills.

Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 24) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following 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
- Recommendations—from prior teachers, work supervisors, or health professionals who are knowledgeable about your qualifications
- Observation experience—A minimum of twelve hours of career observation in each modality (CT and MRI) is required. The career observation form is available as a download from the forms page on the Web site.
- Venipuncture, highly recommended

* 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.

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.

Application dates

1. Applications are accepted starting January 1st of each year.
2. Deadline for applications is
   a. May 1 for CT only and CT/MRI combined certificates
   b. December 1 for MRI
3. Applicants should submit applications early because interview slots are limited.

Interviews

CT and MRI interviews are conducted in June or July. Qualified 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 on campus at Loma Linda. Applicants will be notified by telephone and/or e-mail of their interview schedule. Interviews are rated in the following four areas:

- Work experience or training background
- Recommendations
- Academic record
- Communication skills, knowledge, motivation, etc.

Selection

After applicants have been interviewed, the selection committee for the Special Imaging Program (CT and MRI) meets to make the final selections. Selections are usually decided by the middle of July, and confirmation of each decision is mailed to the respective applicant from the Office of Admissions for the School of Allied Health Professions.

Programs

Special Imaging CT — Certificate

Autumn Quarter		**Units**
REL_ 4__ Upper-division Religion[1]		2
RTSI 364	CT Patient Care and Procedures	2
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
Winter Quarter		
RTSI 369	CT Physics	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
	Total Units:	**28**

[1] Selected in consultation with program advisor

Time to complete the program

23 weeks (2 academic quarters) — based on full-time enrollment

Special Imaging CT/MRI — Certificate

Autumn Quarter		
REL_4__ Upper-division Religion[1]		2
RTSI 364	CT Patient Care and Procedures	2
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
Winter Quarter		
RTSI 369	CT Physics	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
Spring Quarter		
RTSI 361	MRI Physics I	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
Second Year		
Summer Quarter		
RTSI 362	MRI Physics II	2
RTSI 365	MRI Patient Care and Procedures	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
	Total Units:	**54**

[1] Selected in consultation with program advisor

Time to complete the program

45 weeks (4 academic quarters) — based on full-time enrollment

Special Imaging MRI — Certificate

Spring Quarter		
REL_ 4__ Upper-division Religion[1]		2
RTSI 361	MRI Physics I	2
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
Second Year		
Summer Quarter		
RTSI 362	MRI Physics II	2
RTSI 365	MRI Patient Care and Procedures	2
RTSI 971	Special Imaging (CT/MRI) Affiliation	10
	Total Units:	**30**

[1] Selected in consultation with program advisor

Time to complete the program

22 weeks (2 academic quarters) — based on full-time enrollment

Special Imaging — CT, MRI, CT and MRI Comparison

First Year: Autumn Quarter	Course Title	CT	MRI	CT and MRI
REL_ 4__ Upper-division Religion		2.0		
RTSI 367	Cross-sectional Radiographic Anatomy	2.0		2.0
RTSI 971	Special Imaging (CT/MRI) Affiliation	10.0		10.0
RTSI 364	CT Patient Care and Procedures	2.0		2.0
REL_ 4__ Upper-division Religion				2.0
Totals		**16.0**		**16.0**
First Year: Winter Quarter	**Course Title**	**CT**	**MRI**	**CT and MRI**
RTSI 369	CT Physics	2.0		2.0
RTSI 971	Special Imaging (CT/MRI) Affiliation	10.0		10.0
Totals		**12.0**		**12.0**
First Year: Spring Quarter	**Course Title**	**CT**	**MRI**	**CT and MRI**
RTSI 361	MRI Physics I		2.0	2.0
RTSI 971	Special Imaging (CT/MRI) Affiliation		10.0	10.0
REL_ 4__ Upper-division Religion			2.0	
RTSI 367	Cross-sectional Radiographic Anatomy		2.0	
Totals			**16.0**	**12.0**
Second Year: Summer Quarter	**Course Title**	**CT**	**MRI**	**CT and MRI**
RTSI 362	MRI Physics II		2.0	2.0
RTSI 365	MRI Patient Care and Procedures		2.0	2.0
RTSI 971	Special Imaging (CT/MRI) Affiliation		10.0	10.0
Totals			**14.0**	**14.0**
Overall Totals		**28.0**	**30.0**	**54.0**

School of Behavioral Health

Dean's Welcome

We're glad you have chosen to consider Loma Linda University's School of Behavioral Health 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 University 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 Behavioral Health (SBH) 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 Behavioral Health, 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 SBH 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.

Beverly J. Buckles, D.S.W.
Dean, School of Behavioral Health

School foundations

The School of Behavioral Health includes the Departments of Counseling and Family Sciences, Psychology, and Social Work and Social Ecology; and the Division of Interdisciplinary Studies. The school offers master's and doctoral degree programs, as well as a number of postbaccalaureate and postdegree certificates. These programs equip graduates with the leading-edge knowledge and practice experiences necessary for careers in behavioral health practice, research, or administration.

Philosophy

The School of Behavioral Health is grounded by a deep commitment to the University's mission to further the teaching and healing ministries of Jesus Christ, which produces wholeness within transformed lives. Transformation is viewed as a lifelong journey of faith and learning underpinned by a bio-psycho-social-spiritual perspective, which assumes that wholeness is achieved when all subsystems affecting human needs are understood and in balance. This pursuit seeks to understand and promote healthy minds, communities, social systems, and human relationships that enable individuals to experience resiliency and live meaningful lives. Such wholeness manifests itself in a life of service to humanity and to God.

In the School of Behavioral Health, these purposes are achieved through academic programs—including research, clinical practice, and global learning experiences that engage faculty and students in the highest levels of scholarship, professionalism, and quest for wholeness. Because these pursuits are served by knowledge, graduate students are obliged to achieve both broad and detailed mastery of their fields of study and participate with the faculty in the process by which knowledge is created and applied. The end result is firm adherence to the global traditions of Loma Linda University through scholarly and practice pursuits that aim to strengthen the effectiveness of behavioral health practice and research to improve the quality of life for individuals and communities around the world.

Goals

The School of Behavioral Health 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 and professional careers in the behavioral health professions.
2. Encouraging development of independent judgment, mastery of research techniques, and contribution to scholarly communication.
3. Fostering the integration of science and practice in the service of humankind.

Learning outcomes and assessment

Supporting these goals, the School of Behavioral Health has adopted Loma Linda University's Institutional Learning Outcomes (p. 19) (ILOs).

The School of Behavioral Health supports the realization of the University's learning outcomes through the curricula of its degree programs by providing students with content and active learning experiences that reflect the current practice and professional knowledge, skills, behaviors, and attitudes needed for competent practice in behavioral health, including, but not limited to:

- Professional and personal self-care
- Ethical and professional standards of conduct and behavior
- Legal and statutory mandates affecting practice
- Clinical knowledge shared and specific to disciplines
- Therapeutic and reflective use of self
- Analytical methods supporting scholarship and the integration of science and practice in the development of new knowledge and improved services
- Professional communication and presentation skills
- Strengths perspectives supporting wellness, recovery, and antistigma
- Integration of spirituality and cultural competency
- Integration of behavioral health into primary health care
- Global context of behavioral health practice
- Collegial and collaborative team practice
- Commitment to continuous professional development, service, and lifelong learning

The assessment of the University's student learning outcomes is integrated into the specific program and department criteria and methods used to address professional accreditation assessment requirements. Where possible, these data are used to support the development of school-wide metrics.

Mission

Operationalizing this philosophy, the mission of the School of Behavioral Health is to provide graduate-level education that prepares competent, ethical, and compassionate professionals who possess the knowledge, values, and skills necessary for a life dedicated to whole person care in behavioral health practice, research, and servant leadership.

General regulations

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 by the issuing institution. 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 Behavioral Health takes official action and notifies the applicant. The applicant must respond affirmatively before becoming eligible to register in the School of Behavioral Health.
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 Behavioral Health program.
4. New students are required to pass a background check before they register for classes.

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 Behavioral Health'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 <http://www.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 Behavioral Health may request transfer to a different program or a more advanced degree level by contacting the School of Behavioral Health 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 Behavioral Health 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 Behavioral Health 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 Behavioral Health 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 Behavioral Health 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 Behavioral Health 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 (3.0) 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 Behavioral Health 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 Behavioral Health 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 Behavioral Health 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 Behavioral Health 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 Behavioral Health.

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 Behavioral Health or to a program in the School of Behavioral Health 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 Behavioral Health 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 Behavioral Health.

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 Behavioral Health 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 for limited periods at special facilities studies 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 Behavioral Health.

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 during 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 to be paid during registration each quarter. A continuing registration fee is also 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 during 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 to be paid during registration each quarter. A continuing registration fee is also 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 Behavioral Health does not constitute candidacy for a graduate degree. Admission to candidacy is initiated by a written petition (School of Behavioral Health 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 Behavioral Health 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 humans.

For admission to a combined degrees program, the student must have a baccalaureate degree; must qualify for admission to the School of Behavioral Health; 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 Behavioral Health requirements.

The student's concurrent status is regarded as continuous until the program is completed or until discontinuance is recommended by the School of Behavioral Health or the professional school. The usual degree requirements apply.

The following combined degrees programs are offered in conjunction with the School of Behavioral Health. (See Combined Degrees Programs at the end of Section III.)

Marital and Family Therapy *with* Clinical Ministry (M.S./M.A.)

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* 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.

The School of Behavioral Health prepares the school-specific *Policies and Procedures Manual*, which is provided to all School of Behavioral Health students. Regulations, policies, procedures, and other program requirements are contained in this manual.

Academic information

Conditions of registration, residence, attendance

Academic residence

A student must meet the residence requirements indicated for a particular degree, which is never less than one academic quarter. A year of residence is defined as three quarters of academic work. 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 to the dean of the School of Behavioral Health, 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.

Students should also review the requirements of in their program of study as some professional degree programs require grades higher than a B (3.0) for transfer courses, and may restrict the courses and/or experiences that may be transferred from other academic institutions.

If permitted for transfer, credit for practicum experiences is allowed only where university credit has been received for equivalent experiences. Credit for life and/or work experiences cannot be used to meet the requirements in any degree or certificate program in the School of Behavioral Health.

Advanced standing

Advanced standing is a designation used in specific professional degree programs to address possible content redundancy between levels of degrees available within those professions. Evaluation of eligibility for advanced standing is program specific when specific conditions are met. Students should review the availability of advanced standing in their program. Academic variances are used to document the availability of advanced standing.

Academic, professional, and clinical probation

Continued enrollment in a professional degree program or certificate is contingent upon a student's continued satisfactory academic, professional, and clinical performance. Any student whose performance in any of these three areas falls below the requirements of their program, the school, or university will be placed on one or more of these types of probation.

Academic probation

Degree students whose overall grade point average falls below a 3.0 will be placed on academic probation. Students on academic probation who 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 may be dismissed from school. Students enrolled in postbaccalaureate certificate programs should review the G.P.A. requirements of these programs, which may differ from G.P.A. requirements for degree programs.

Professional performance probation

All students enrolled in professional programs are required to adhere to the professional and ethical standards set forth by their disciplines, the school, and university. Any student whose performance is evaluated to fall below these requirements will be placed on professional performance probation. The continued enrollment for the next quarter of a student on professional probation is subject to the recommendation of the department and approval by the school's Academic Standards Committee. Any student whose professional performance falls below these minimum requirements for two quarters (consecutive or dispersed) will be dismissed from the school. Students obtain copies of the ethical and professional performance standards set forth by their disciplines through their academic programs. The professional performance requirements for the School of Behavioral Health are included in the school's "Policies and Procedures Manual," which is provided to each student. The University's conduct and behavior expectations are provided in the Loma Linda University *Student Handbook*.

Clinical probation

The successful completion of a clinical (or administrative) practicum is an essential requirement of professional degree programs. A student who receives an Unsatisfactory (U) in any segment or quarter of a practicum requirement is automatically placed on clinical probation. The continued enrollment for the next quarter, term, or rotation segment of a student on probation or clinical probation is subject to the recommendation of the department and approval by the school's Academic Standards Committee. A student who receives a U grade for a second segment or quarter (consecutive or dispersed) of practicum will be dismissed from the school. Students obtain copies of the clinical and professional performance requirements for their degree through their academic programs. The clinical and professional performance requirements for the School of Behavioral Health are included in the school's "Policies and Procedures Manual," which is provided to each student. Relevant University conduct and behavior expectations that affect successful completion of a practicum experience are provided in the Loma Linda University *Student Handbook*.

Financial information

Schedule of charges (2014–2015)

Tuition

$732	Per unit, graduate credit
$366	Per unit, audit
$32,200	Per year: Psychology Psy.D. and Ph.D.

Special charges

$75	Application fee*
$100	Application fee for combined degrees
$750	Enrollment fee per quarter
$100	Psychology laboratory fee per quarter
$200	Nonrefundable tuition deposit**
$40	Application to add program or degree

Programs may have additional fees for course material.

* All students who submit their application by the VIP deadline will have 100 per cent of the applicaton fee credited to their student account towards the first quarter of tuition (see dates below).

** The $200 nonrefundable deposit will be credited to the student's account towards the first quarter of tuition.

*** Clinical training fees apply and vary by program. Fees are at a reduced rate below the current per unit tuition rate.

VIP Application Deadline Dates

Department	Fall Qtr.	Winter Qtr.	Spring Qtr.	Summer Qtr
Marriage and Family Therapy	December 31	September 2	January 1	March 15
Psychology	December 31			
Social Work	December 31	September 2	January 1	March 15
Dual Degrees	December 31	September 2	January 1	March 15

Departments

- Department of Counseling and Family Science (p. 163)
- Department of Psychology (p. 194)
- Department of Social Work and Social Ecology (p. 202)

Programs

- Child Life Specialist — M.S. (p. 163)
- Clinical Mediation — Certificate (p. 165)
- Counseling — M.S. (p. 165)
- Criminal Justice — M.S. (p. 202)
- Drug and Alcohol Counseling — Certificate (p. 167)
- Family Counseling — Certificate (p. 168)
- Family Life Education — Certificate (p. 169)
- Family Studies — M.A. (p. 170), Ph.D. (p. 170) (Comparison) (p. 175)
- Gerontology — M.S. (p. 204)
- Marital and Family Therapy — M.S. (p. 176), D.M.F.T. (p. 179), Ph.D. (p. 179), Interim M.S. (p. 179) (Comparison) (p. 188)
- Medical Family Therapy — Certificate (p. 190)
- Play Therapy — Certificate (p. 206)
- Psychology — Psy.D. (p. 196), Ph.D. (p. 194)
- School Counseling — Certificate (p. 191)
- Social Policy and Social Research — Ph.D. (p. 207)
- Social Work — M.S.W. (p. 209)

Department of Counseling and Family Sciences

The Department of Counseling and Family Sciences is one of the three academic departments housed in the School of Behavioral Health at Loma Linda University. This department administers four master's degree programs—child life specialist (MS), counseling (MS), family studies (MA), and marital and family therapy (MS); and three doctoral degree programs—a Ph.D. degree in family studies, a Ph.D. degree in marital and family therapy, and a Doctor of Marital and Family Therapy (D.M.F.T.).

In order to augment academic and professional preparation for future careers, six certificate programs are offered to students as well—including clinical mediation, drug and alcohol counseling, family counseling, family life education, medical family therapy, and school counseling.

The Department of Counseling and Family Sciences supports the mission of Loma Linda University, sharing its commitment to bring wholeness to individuals and families in near and far away places. It values a global outreach and seeks to provide opportunities for students to integrate knowledge and skills with diverse peoples in various life contexts. The department is proud of its well-qualified faculty who value teaching, research, and service; and who seek to build up their respective professions in tangible ways. The various academic programs have program accreditation and approvals and have been recognized for their outstanding work, high standards, and superior student outcomes.

Combined degrees

The department offers a combined marital and family therapy with clinical ministry (M.S./M.A.) degree.

A complete list of program instructors can be viewed online at <llu.edu/behavioral-health/cfs>.

Department chair

Curtis A. Fox

Primary faculty

Ian P. Chand

Brian Distelberg

Curtis A. Fox

Douglas Huenergardt

Carmen Knudson-Martin

Michelle Minyard-Widmann

Mary Moline

Winetta Oloo

Alisha Saavedra

Cheryl Simpson

Randall Walker

Jackie Williams-Reade

Secondary faculty

Siroj Sorajjakool

Programs

- Child Life Specialist — M.S. (p. 163)
- Clinical Mediation — Certificate (p. 165)
- Counseling — M.S. (p. 165)
- Drug and Alcohol Counseling — Certificate (p. 167)
- Family Counseling — Certificate (p. 168)
- Family Life Education — Certificate (p. 169)
- Family Studies — M.A. (p. 170), Ph.D. (p. 170) (Comparison (p. 175))
- Marital and Family Therapy — M.S. (p. 176), D.M.F.T. (p. 179), Ph.D. (p. 179), Interim M.S. (p. 179) (Comparison (p. 188))
- Medical Family Therapy — Certificate (p. 190)
- School Counseling — Certificate (p. 191)

Child Life Specialist — M.S.

Program director
Michelle Minyard-Widmann

Clinical coordinator
Alisha Saavedra

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. In addition, global practice experiences within the United States and in other countries will provide the students with child life practice in underdeveloped and developed environments.

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 <http://www.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 <http://www.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 the United States. A 100-hour practicum and 600 hours of internship are required to complete the master's degree. These experiences will provide an opportunity to help students build on course work and put theory into practice.

Financial assistance

Students accepted into the 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

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Those who meet these requirements as well as the published deadlines for any of the following terms may enroll during Autumn and Winter 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
- Written statement of purpose for applying to the program.
- Interview with department faculty, as scheduled (on-campus group interviews are scheduled for January through March; other on-campus and telephone interviews are scheduled individually).
- Volunteer experience under the direction of a Certified Child Life Specialist is highly recommended.

Pre-entrance requirements (p. 25):

- A background check
- Health clearance

Program requirements

Required		
BHCJ 515	Researching and Writing Graduate Level Papers	2.0
CHLS 501	Hospitalized Infant and Toddler Development	3.0
CHLS 502	Child Life Seminar	2.0
CHLS 503	Child Life Seminar	2.0
CHLS 504	Child Life Administration and Program Development	3.0
CHLS 505	Cross-Cultural Perspectives in Health Care	3.0
CHLS 506	Therapeutic Play for Children Affected by Illness and Injury	3.0
CHLS 507A	Aspects of Illness and Disease	3.0
CHLS 507B	Aspects of Illness and Disease	3.0
CHLS 508	Grief and Loss	3.0
CHLS 604	Child Life Internship and Supervision I	4.0
CHLS 605	Child Life Internship and Supervision II	4.0
CHLS 606	Parenting Medically Fragile Children	3.0
CHLS 607	Child Life Professional	3.0
CHLS 608	Child Life Practicum	1.0
COUN 547	Social Ecology of Individual and Family Development	3.0
or MFAM 547	Social Ecology of Individual and Family Development	
COUN 576	Exceptional and Medically Challenged Children	3.0
COUN 584	Advanced Child and Adolescent Development	3.0
or MFAM 584	Advanced Child and Adolescent Problems	
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 553	Family Systems Theory	3.0
MFAM 568	Groups: Process, and Practice	3.0
MFAM 644	Child Abuse and Family Violence	3.0
or COUN 644	Child Abuse and Family Violence	
RELR 568	Care of the Dying and Bereaved (or equivalent)	3.0
Electives (as approved by advisor)		3.0
Total Units		**74**

Other degree requirements

- Residence of at least two academic years.
- A minimum G.P.A. of 3.0.

- A minimum of 71 quarter units of graduate work, which includes credit received for core courses, writing course, and a 3-unit religion course.
- A minimum of 700 hours of clinical child life hours (CHLS 604 Child Life Internship and Supervision I, CHLS 605 Child Life Internship and Supervision II and CHLS 608 Child Life Practicum) completed within the degree program.
- A minimum of 20 hours of global practice experience.
- Successful completion of a written comprehensive examination (taken before advancement to candidacy) and a final oral and written 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.
- A minimum of 20 hours of global practice experience (optional).

Normal time to complete the program

2 years (7 academic quarters) — full-time enrollment required

Clinical Mediation — Certificate

Program director
Ian P. Chand

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.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. The clinical mediation certificate can be a track in the M.S., D.M.F.T., or Ph.D. degrees in marital and family therapy; 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).
- Fulfillment of the admission requirements for the chosen degree in order to pursue the track in clinical mediation.

Pre-entrance requirements (p. 25):

- A background check
- Health clearance

Program requirements

Required		
FMST 528	Parenting	2
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 538	Theory and Practice of Conflict Resolution	2
MFAM 544	Family and Divorce Mediation	4
MFAM 553	Family Systems Theory	3
MFAM 585	Internship in Family Mediation	4
MFAM 644	Child Abuse and Family Violence	3
MFAM 614	Law and Ethics	3
or MFTH 527	Advanced Legal and Ethical Issues	
Religion		
Choose from the following:		3
RELR 564	Religion, Marriage, and the Family	
RELR 5__	Graduate-level relational	
Total Units		**27**

Normal time to complete the program

2 years based on less than half-time enrollment

Counseling — M.S.

Program director
Cheryl Simpson

The Master of Science degree in counseling is a program requiring 90 quarter units of academic course work and a minimum of 9 units of field experience. Students are required to choose licensed professional clinical counselor (LPCC) or school counseling (PPS) as a specialization. Students may choose to specialize in both LPCC and PPS. Electing to complete both LPCC and PPS requires 90 quarter units. In addition to the academic requirements, graduates must complete field experience as outlined in the curriculum for their chosen specialization(s).

Clinical counseling (LPCC) specialization

Licensed professional clinical counseling (LPCC) is established as one of the clinical mental health professions throughout the United States that qualifies psychotherapists to work in public and private facilities and to set up an independent practice. The Board of Behavioral Science that regulates master's-level licensure for mental health professions in California posts the legal definition of the profession as it appears below.

Professional clinical counseling means the application of counseling interventions and psychotherapeutic techniques to identify and remediate cognitive, mental, and emotional issues—including personal growth, adjustment to disability, crisis intervention, and psychosocial and environmental problems. Professional clinical counseling includes conducting assessment for the purpose of establishing counseling goals and objectives to empower individuals to deal adequately with life situations, reduce stress, experience growth, change behavior, and make well-informed rational decisions (California Business and Professions Code section 4999.20).

On August 26, 2013, the Board of Behavioral Sciences (BBS) determined that Loma Linda University's master's degree in counseling includes course work that meets the statutory requirements for licensed professional clinical counselor (LPCC) licensure under Business and Professions Code (BPC) section 4999.33, which resulted from

Senate Bill 788. Complete information regarding scope of license for LPCC is located on the Board of Behavioral Sciences Web site <http://www.bbs.ca.gov/pdf/forms/lpc/lpc_scope_practice.pdf>. California standards for LPCC are consistent with national standards for clinical counseling licensure, making it easier for LPCCs to be granted reciprocity when they move throughout the country. Equivalent licensure in other states may be titled licensed professional counselor (LPC), licensed clinical mental health counselor (LCMHC), or similar titles.

School counseling (PPS) specialization

On June 18, 2008, the Committee on Accreditation, on behalf of the Commission on Teacher Credentialing (state of California), assigned the status of Accreditation to Loma Linda University and all of its credential programs. On the basis of this decision, the institution is authorized to recommend candidates for the pupil personnel services credential–school counseling. School counselors serve as leaders of counseling programs within the educational system that address academic, career, and personal/social needs of students. They serve as counselors and advocates for students, collaborators with parents and school personnel, and liaisons to the community. As articulated by the American School Counselor Association (ASCA), school counseling programs are preventive in design, developmental in nature, and integral to the total educational program. Combining the school counselor certification with clinical counselor licensure is an excellent professional path that enhances counseling competence and professional opportunities. Additional information about the pupil personnel services credential in school counseling is found at the California Commission on Teacher Credentialing Internet address <http://www.ctc.ca.gov>.

Additional certification options

In addition to the two specializations embedded within the Master of Science degree in counseling, the department offers certificate programs. Certificate courses offer excellent elective options that can be used to meet degree requirements. They may also be taken in addition to degree requirements before or after graduation. The following is a list of certificate programs offered: child life specialist, clinical mediation, drug and alcohol counseling, family life education, and medical family therapy. Requirements for the School Counseling Program certificate are embedded in the Counseling Program M.S. degree curriculum. The certificate is offered for Marital and Family Therapy Program students who complete their M.S. degree and want to add certification for the California pupil personnel services credential in school counseling.

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).

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. 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.
- 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.
- 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).

Pre-entrance requirements (p. 25):

- A background check
- Health clearance

Program requirements

The curriculum for the M.S. degree in counseling is divided into three domains, as outlined below.

Core		
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
Select one of the following:		3.0
RELR 564	Religion, Marriage, and the Family	
RELR 568	Care of the Dying and Bereaved	
RELR 5__	Graduate-level Relational	
Specialization courses		
Select specialization courses for Licensed Professional Clinical Counselor (LPCC) or Pupil Personnel Services (PPS)		23
Licensed Professional Clinical Counselor (LPCC)		
COUN 675	Dynamics of Aging	
COUN 682	Clinical Counseling Practicum and Seminar	
COUN 691	Process Approaches to Counseling and Psychotherapy	
COUN 692	Cognitive Approaches to Counseling and Psychotherapy	
COUN 693	Systemic Approaches to Counseling and Psychotherapy	
Electives (11 units) [1]		
Pupil Personnel Services		
COUN 574	Educational Psychology	
COUN 679	Professional School Counseling	
COUN 681	School Counseling Practicum and Seminar	
Electives (15 units) [1]		
Field Experience [2]		
Select one of the following sets of requirements:		
LPCC/PPS dual specialization		
COUN 781	School Counseling Field Experience (PPS)	
COUN 782	School Counseling Field Experience (PPS)	
COUN 791	Clinical Counseling Field Experience (LPCC)	
COUN 792	Clinical Counseling Field Experience (LPCC)	
COUN 793	Clinical Counseling Field Experience (LPCC)	
LPCC Single specialization		
COUN 791	Clinical Counseling Field Experience (LPCC)	
COUN 792	Clinical Counseling Field Experience (LPCC)	
COUN 793	Clinical Counseling Field Experience (LPCC)	
PSS school counselor single specialization		
COUN 781	School Counseling Field Experience (PPS)	
COUN 782	School Counseling Field Experience (PPS)	
COUN 783	School Counseling Field Experience (PPS)	
SBHG 700	Global Behavioral Health Service Learning	2
Total Units		**90**

1 Advisor-approved electives may be chosen from relevant graduate courses in other programs, provided that the course is not restricted to students in that specific degree. A list of possible electives will be provided.

2 700-numbered courses do not count toward minimum didactic units required for the degree

Noncourse requirements

- Residence of at least two academic years.
- A minimum grade point average of 3.0 with no course grade lower than C.
- Certificate of clearance (COC) prior to school counseling field experience, including Live Scan and TB test.
- 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.

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment; part time permitted

Drug and Alcohol Counseling — Certificate

Program director
Randall Walker

The Drug and Alcohol Counseling Program is offered by the School of Behavioral Health 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-using and substance-addicted adults and their families.
- Offer curriculum and experience for master's degree 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 Sciences (BBS), the American Association for Marriage and Family Therapy (AAMFT), and other certifying organizations.

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 field work at an approved site dealing with addiction, alcoholics/addicts, and their families. Field work provides excellent opportunities to gain experience working with substance users and their families. Students will be evaluated quarterly. Possible placement sites include Matrix Institute on Addictions in Rancho Cucamonga, 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 users in residential and outpatient settings. Inland Valley Recovery Services (IVRS, Roberta Reid) in Upland offers opportunities for students to work with substance users and their families in residential and outpatient treatment settings. The Loma Linda University Behavioral Medicine Center offers students opportunities to work with substance users 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 offer additional opportunities for students to gain experience. Numerous other programs offer substance-user 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 users but where it is determined that addiction may be a significant focus of clinical attention.

Admissions

Applicants must meet the School of Behavioral Health (p. 156) admission requirements outlined in this CATALOG and give evidence of academic ability, professional comportment, and mature judgment.

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 appropriateness to complete the certificate program and for ability to work with addicted adults and their families. Additional admission requirements include:

- Applicants' reapplication to the University and meeting all requirements for application prior to admission into the certificate program.
- A completed program application 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.
- An 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).

Pre-entrance requirements (p. 25):

- A background check
- Health clearance

Program requirements

Required		
COUN 524	Psychopharmacology and Medical Issues	3
or MFAM 524	Psychopharmacology and Medical Issues	
COUN 568	Groups: Process and Practice	3
or MFAM 568	Groups: Process, and Practice	
COUN 638	Family Therapy and Chemical Abuse	3
or MFAM 638	Family Therapy and Chemical Abuse	
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 645	Advanced Substance Abuse-Treatment Strategies	3
REL_ 5__	Graduate Level Religion	3
MFAM 635 & MFAM 636 & MFAM 637	Case Presentation Seminar and Legal Issues and Case Presentation Seminar and Client-Centered Advocacy and Case Presentation Seminar and Global Practices	9
or MFAM 694	Directed Study: Marriage and Family	
Total Units		**27**

Normal time to complete the program

5 academic quarters based on half-time enrollment

Family Counseling — Certificate

Program director
Mary E. Moline

The certificate in family counseling is offered by the School of Behavioral Health 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, child-care workers, drug counselors, lawyers, and others in related professions can enhance their effectiveness through this program. Paid paraprofessionals 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.

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.

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.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Additional admission requirements include:

- a bachelor's degree from an accredited university or college
- 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 2.7.

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

Required		
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3.0
MFAM 528	Culture, Socioeconomic Status in Therapy	3.0
MFAM 535	Case Presentation and Professional Studies	3.0
MFAM 551	Family Therapy: Foundational Theories and Practice	3.0
MFAM 553	Family Systems Theory	3.0
Electives as aproved by adviser		
MFAM ___	Marital and Family	9.0
Religion		
Select one of the following:		3.0
RELR 564	Religion, Marriage, and the Family	
RELR 5__	Graduate-level Relational	
Total Units		**27**

Normal time to complete the program

2 academic quarters based on full-time enrollment; part-time permitted

Family Life Education — Certificate

Program director
Curtis A. Fox

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 fields—for example, teachers, nurses, marital and family therapists, and pastors—who wish to have some academic emphasis in the area of family life education.

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 <http://www.ncfr.org" target>.

Learning objectives

1. Students will meet professional standards in basic content areas for certification in family life education.
2. Students will know the difference between family life education and therapy and will be able to deliver services using family life education methodologies.
3. Students will establish ethical guidelines for the practice of family life education and will maintain professional identity as a family life educator.

Financial assistance

This program is not independently eligible for federal financial aid. However, a student can complete the requirements for this certificate while concurrently enrolled in a School of Behavioral Health graduate degree program. For students enrolled in a graduate degree program at another school within Loma Linda University, acceptance into this certificate program is dependent on approval of the dean of the School of Behavioral Health.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Additional admission requirements include:

- 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.

Program requirements

Required		
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 528	Culture, Socioeconomic Status in Therapy	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
Total Units		**28**

Normal time to complete the program

3 academic quarters based on full-time enrollment; part-time permitted

Family Studies — M.A., Ph.D.

Program director
Curtis A. Fox

Family studies refers to the academic study of marriage and family living and focuses on the whole body of scholarship 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 and be able to serve them better; thus promoting greater stability and well-being. The Ph.D. degree is the highest level of academic preparation in the field.

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

Programs

- Family Studies — M.A. (p. 170), Ph.D. (p. 171), M.A./Ph.D. (p. 173), Comparison (p. 175)

Family Studies — M.A.

The M.A. degree in Family Studies meets the highest standards and quality in the field. This curriculum 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.

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.

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.

Because of the commitment of the University to global missions, students are strongly encouraged to participate in study opportunities provided through the department and the School of Behavioral Health. (See also CFSG 584 Global Practice Experience. Enrollment requires department approval.)

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.

Approval and certification

The M.A. degree in family studies has been reviewed by the National Council on Family Relations. It has been recognized as an NCFR CFLE-approved program offering course work covering the content required for the certified family life educator (CFLE) designation. Graduates of NCFR CFLE-approved programs qualify to apply for the CFLE designation via an abbreviated application process. Further information on securing the

CFLE designation may be found on the website of the National Council on Family Relations at <http://www.ncfr.org/" target=>.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. 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 the bachelor's degree course work for at least the final 45 units prior to graduation.
- 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 telephone interviews are scheduled individually).

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

Major		
FMST 515	Professional Issues in Family Life Education	3
FMST 524	Family Resource Management	2
FMST 526	Marriage and the Family	3
FMST 528	Parenting	2
FMST 529	Family Life Education	3
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 528	Culture, Socioeconomic Status in Therapy	3
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 553	Family Systems Theory	3
MFAM 568	Groups: Process, and Practice	3
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 638	Family Therapy and Chemical Abuse	3
MFAM 674	Human Sexual Behavior	3
Religion		
RELR 564	Religion, Marriage, and the Family	3
Research		
FMST 505	Social Research Methods: Quantitative	3
FMST 506	Advanced Social Research Methods	3
FMST 698	Project or Thesis	3
Electives [1]		
Elective		4
Internship		
FMST 695	Internship in Family Studies	2
Total Units		**55**

[1] Units must be chosen from among various courses offered by the department, or from other departments, depending on professional interest or need

Normal time to complete the program

2 years (6 academic quarters) — based on full-time enrollment

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.

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, practical experience in areas of career interest, and opportunities to have global experiences related to students' areas of study.

The Ph.D. degree is the highest level of academic preparation in family studies. This University 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 website of the National Council on Family Relations at <http://www.ncfr.org>.

Goals

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.

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.

In addition, the mission of the University and of the Department of Counseling and Family Sciences extends to a global outreach. For this reason, students are encouraged to participate in department and School of Behavioral Health study opportunities that support their high-impact, increased understanding of global cultures locally and in other parts of the world. Students complete their internship locally. (See also CFSG 584 Global Practice Experience. Enrollment requires department approval.)

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.

Approval and certification

The Ph.D. degree in family studies has been reviewed by the National Council on Family Relations. It has been recognized as an NCFR CFLE-approved program offering course work covering the content required for the certified family llfe educator (CFLE) designation. Graduates of NCFR CFLE-approved programs qualify to apply for the CFLE designation via an abbreviated application process.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Admission to the Ph.D. degree curriculum in family studies remains competitive. Each year, only a small number of applicants will be admitted. If accepted, students are expected to begin their studies in the Autumn Quarter; but they may petition the department to begin at another quarter of the academic year. The requirements for admission include:

- Successful completion of a bachelor's or master's degree in any field.
- Minimum G.P.A. of 3.3 in an undergraduate degree or graduate degree
- Competitive GRE scores
- Personal essay
- Formal interview with department faculty
- Successful completion of an undergraduate course in statistics

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 Behavioral Health.

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. in family studies curriculum.

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

The curriculum for the Ph.D. degree in family studies includes 98 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 co-requisite courses necessary for building a foundation for later advanced courses. These include: MFAM 515, MFAM 553, MFAM 674, MFAM 547, MFAM 604, and MFAM 528.

Major		
FMST 504	Advanced Family Studies	4
FMST 515	Professional Issues in Family Life Education	3
FMST 518	Advanced Theories in Child Development	3
FMST 519	Teaching in Higher Education	2
FMST 524	Family Resource Management	2
FMST 526	Marriage and the Family	3
FMST 528	Parenting	2
FMST 529	Family Life Education	3
FMST 684	Doctoral Seminar	1
Concentration [1]		
See options below		12
Religion		
RELE 5__	Graduate-level Ethics	3
RELR 535	Spirituality and Mental Health	3
RELT 615	Seminar in Philosophy of Religion	3
Research		
FMST 601	Statistics I	4
FMST 602	Statistics II	4
FMST 603	Statistics III	4
FMST 604	Advanced Qualitative Methods	4
FMST 605	Advanced Quantitative Methods	4
FMST 608	Analysis and Presentation Issues in Research	3

FMST 668	Qualitative Research Practicum	2
FMST 699	Dissertation Research	20
Electives [2]		
Elective		6
Internship		
FMST 695	Internship in Family Studies	3
Total Units		**98**

1 Twelve units of concentration in an area agreed upon in consultation with program coordinator and approved by the doctoral committee. This concentration will serve to add breadth to student's work and augment their preparation for interests in research or career.

2 Units may be chosen from among various courses offered by the department, or from other depatments, depending on professional interest or need

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.

Family, Systems, and Health

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.

MFTH 534	Family Therapy and Medicine	3
MFTH 540	Introduction to Medical Family Therapy	3
MFTH 544	Health and Illness in Families	3
Select one of the following		3
CHLS 507A	Aspects of Illness and Disease	
CHLS 507B	Aspects of Illness and Disease	
CHLS 508	Grief and Loss	
COUN 576	Exceptional and Medically Challenged Children	
MFAM 566	Psychopathology and Diagnostic Procedures: Personality	
MFAM 638	Family Therapy and Chemical Abuse	
MFTH 528	Organizations: Structure, Process, and Behavior	
Total Units		**12**

School Consultation

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.

Select 12 units of the following		12
COUN 574	Educational Psychology	
COUN 576	Exceptional and Medically Challenged Children	
COUN 577	Assessment in Counseling	
COUN 578	College and Career Counseling	
COUN 678	Consultation and Program Evaluation	
COUN 679	Professional School Counseling	
Total Units		**12**

Systems Consultation and Professional Relations

MFTH 528	Organizations: Structure, Process, and Behavior	3
MFTH 555	Organizational Development and Change	3
MFTH 556	Management Consulting and Professional Relations	3
MFTH 557	Organizational Assessment	3
Total Units		**12**

Normal time to complete the program

3 years based on full-time enrollment; part-time permitted

Family Studies — M.A./Ph.D.

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 completion of a bachelor's degree (B.A. or B.S.) from an accredited institution. The student will complete 122 units of course work for this program. The M.A. degree will be awarded to the student after successful completion of the basic department requirements. The program allows for 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 Social Research Methods: Quantitative, FMST 506 Advanced Social Research Methods, FMST 698 Project or Thesis, or RELR 564 Religion, Marriage, and the Family. These courses will be substituted with the doctoral-level courses in research methods (FMST 604 Advanced Qualitative Methods, FMST 605 Advanced Quantitative Methods), dissertation research (FMST 699 Dissertation Research), 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.

Program requirements

M.A. additional requirements

Shared units with Ph.D.		
Major		
FMST 515	Professional Issues in Family Life Education	3
FMST 524	Family Resource Management	2
FMST 526	Marriage and the Family	3
FMST 528	Parenting	2
FMST 529	Family Life Education	3
Religion		
RELE__	Religion ethics course	
RELR 535	Spirituality and Mental Health	3
RELT 615	Seminar in Philosophy of Religion	3
Research		
FMST 604	Advanced Qualitative Methods	4
FMST 605	Advanced Quantitative Methods	4
FMST 699	Dissertation Research	20
Internship		
FMST 695	Internship in Family Studies	3
Additional courses required for the master's degree (33 units beyond the Ph.D.)		
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 528	Culture, Socioeconomic Status in Therapy	3
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 553	Family Systems Theory	3
MFAM 568	Groups: Process, and Practice	3
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 638	Family Therapy and Chemical Abuse	3
MFAM 674	Human Sexual Behavior	3
Total Units		**74**

Family Studies — M.A., Ph.D. Comparison

Major	Course Title	MA	PhD
FMST 515	Professional Issues in Family Life Education	3.0	3.0
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 514	Cross-cultural Counseling and Family Values	2.0	
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3.0	
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 604	Social Context in Clinical Practice: Gender, Class and Race	3.0	
MFAM 638	Family Therapy and Chemical Abuse	3.0	
MFAM 674	Human Sexual Behavior	3.0	
FMST 504	Advanced Family Studies		4.0
FMST 518	Advanced Theories in Child Development		3.0
FMST 519	Teaching in Higher Education		2.0
FMST 684	Doctoral Seminar		1.0
Totals		**36.0**	**23.0**
Concentration	**Course Title**	**MA**	**PhD**
Twelve units of concentration in an area agreed upon in consultation with program coordinator and approved by the doctoral committee. This concentration will serve to add breadth to students' work and augment their preparation for interests in research or career.			
Elective			12.0
Totals			**12.0**
Religion	**Course Title**	**MA**	**PhD**
RELR 564	Religion, Marriage, and the Family	3.0	
RELE 5__ Graduate-level Ethics			3.0
RELR 535	Spirituality and Mental Health		3.0
RELT 615	Seminar in Philosophy of Religion		3.0
Totals		**3.0**	**9.0**
Research	**Course Title**	**MA**	**PhD**
FMST 505	Social Research Methods: Quantitative	3.0	
FMST 506	Advanced Social Research Methods	3.0	
FMST 698	Project or Thesis	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 699	Dissertation Research		20.0
Totals		**9.0**	**45.0**
Electives	**Course Title**	**MA**	**PhD**
Units may be chosen from among various courses offered by the department, or from other departments, depending on professional interest or need			
Elective		4.0	
Elective			6.0
Totals		**4.0**	**6.0**

Internship	Course Title	MA	PhD
FMST 695	Internship in Family Studies	2.0	3.0
Totals		**2.0**	**3.0**
Overall Totals		**54.0**	**98.0**

Marital and Family Therapy — M.S.

Program director
Mary E. Moline

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.

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." Family—a designation that applies to a variety of cultural backgrounds—includes single parent, step, foster, intact, and social units headed by grandparents.

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.

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 academic and clinical preparation and must pass written licensing examinations. Clinical license requirements vary by state and will require additional hours of supervised clinical practice. On May 22, 2012, the Board of Behavioral Sciences (BBS) determined that Loma Linda University's master's degree in marital and family therapy appears to meet the Senate Bill statutory requirements for marriage and family therapy under Business and Professions Code (BPC) section 4980.36.

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 him/her 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.

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 18 units of practicum and complete a minimum of 500 clinical hours and 100 direct supervision hours. 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.

Degree completion

The M.S. degree 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 days students are not in class. In order to participate in the June commencement exercises, students must complete all the required 500 clinical hours and the 90 units of required courses.

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 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 are 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-to-80 percent pass rate for students who sit for the examination; and by being eligible for membership in AAMFT.
   b. Maintain a 75-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
   The University emphasizes whole person care. Each of the seven student learning outcomes for the M.S. degree 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.

The M.S. degree Marital and Family Therapy Program engages in on-going review of student outcomes and uses this information to improve program effectiveness. Data on student outcomes are collected through aggregate scores on quarterly evaluations of clinical competency and results of final oral and comprehensive examinations; client session and outcome data; and exit surveys and interviews of students at graduation. Alumni surveys are also conducted every two years to track graduates' attainment of marital and family therapy licensure, data on employment, and feedback regarding how well the program prepared graduates for their job responsibilities. The program faculty also maintains regular contact with community agencies and educational institutions in the region to obtain input into curriculum planning and improvements in clinical training.

Accreditation

The program is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), 112 South Alfred Street, Alexandria, Virginia 22314; telephone: 703/ 838-9808; e-mail: coa@aamft.org.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Students are admitted in the Autumn and Winter quarters. With special permission, a student may enter during the Spring or Summer quarter. Additional admission requirements include:

- A bachelor's degree in any field from a regionally accredited institution.
- 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.
- Three letters of recommendation—provide character and academic references.

- 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 telephone interviews are scheduled individually.

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

Theoretical foundations		
MFAM 551	Family Therapy: Foundational Theories and Practice	3
MFAM 552	Couples Therapy: Theory and Practice	3
MFAM 553	Family Systems Theory	3
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3
Clinical knowledge		
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 524	Psychopharmacology and Medical Issues	3
MFAM 528	Culture, Socioeconomic Status in Therapy	3
MFAM 556	Psychopathology and Diagnostic Procedures	3
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process	3
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 624	Individual and Systems Assessment	3
MFAM 638	Family Therapy and Chemical Abuse	3
MFAM 644	Child Abuse and Family Violence	3
MFAM 674	Human Sexual Behavior	3
Individual development and family relations		
COUN 675	Dynamics of Aging	1
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 584	Advanced Child and Adolescent Problems	3
Professional identity and ethics		
MFAM 535	Case Presentation and Professional Studies	3
MFAM 614	Law and Ethics	3
Supervised clinical practice		
MFAM 536	Case Presentation Seminar and Documentation	3
MFAM 537	Case Presentation Seminar	3
MFAM 635	Case Presentation Seminar and Legal Issues	3
MFAM 636	Case Presentation Seminar and Client-Centered Advocacy	3
MFAM 637	Case Presentation Seminar and Global Practices	3
MFAM 731	Clinical Training [1]	6
MFAM 732	Clinical Training [1]	9
Religion		
RELR 564	Religion, Marriage, and the Family	3
Group		
MFAM 568	Groups: Process, and Practice	3
Research		
MFAM 501	Research Tools and Methodology: Quantitative	3
MFAM 502	Research Tools and Methodology: Qualitative	3
Electives		
One course in theory required. Select 8 units of the following:		8
COUN 574	Educational Psychology	
COUN 575	Counseling Theory and Applications	
COUN 576	Exceptional and Medically Challenged Children	
COUN 577	Assessment in Counseling	
COUN 578	College and Career Counseling	
COUN 678	Consultation and Program Evaluation	
COUN 680	Field Experience in Counseling	
FMST 524	Family Resource Management	
MFAM 516	Play Therapy	
MFAM 525	Therapeutic Group	
MFAM 526	Theory and Practice of Group Counseling	
MFAM 527	Training/Supervision Workshop in Group Counseling	
MFAM 538	Theory and Practice of Conflict Resolution	
MFAM 539	Solution-Focused Family Therapy	
MFAM 544	Family and Divorce Mediation	
MFAM 548	Men and Families	
MFAM 549	Christian Counseling and Family Therapy	
MFAM 555	Narrative Family Therapy	
MFAM 557	Object Relations Family Therapy	
MFAM 559	Cognitive-Behavioral Couples Therapy	
MFAM 565	Advanced Bowen Theory and Practice	
MFAM 566	Psychopathology and Diagnostic Procedures: Personality	
MFAM 569	Advanced Group Therapy	
MFAM 585	Internship in Family Mediation	
MFAM 605	Gestalt Family Therapy	
MFAM 606	Emotionally Focused Couples Therapy	
MFAM 615	Reflective Practice	
MFAM 659	Current Trends	
MFAM 664	Experiential Family Therapy	
MFAM 665	Structural and Multidimensional Family Therapy	
MFAM 670	Seminar in Sex Therapy	
MFAM 675	Clinical Problems in Marriage and Family Therapy	
MFAM 694	Directed Study: Marriage and Family	
MFAM 695	Research Problems: Marriage and Family	
Total Units		**90**

Degree requirements

Requirements for the M.S. degree in marital and family therapy from Loma Linda University 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. At a minimum, 500 clinical 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.

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment

Post-master's courses [1]

MFAM 651	AAMFT-Approved Supervisor Training	3
MFAM 704	Marital and Family Therapy State Board Written Examination Review	2
MFAM 744	Clinical Internship	1
Total Units		**6**

[1] 700-numbered courses do not count toward total didactic units required for the degree

Marital and Family Therapy — Ph.D., D.M.F.T., Interim M.S.

The marriage and family therapy profession

Marriage and family therapy is a distinct international 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.

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.

Ongoing program review

The Doctor of Marital and Family Therapy (D.M.F.T.) and Ph.D. degrees in marital and family therapy engage in ongoing review of student outcomes and use this information to improve program effectiveness. Data on student outcomes are collected through aggregate scores on the following: quarterly evaluations of clinical competency and results of qualifying examinations and clinical demonstrations, annual student activity reports on clinical and scholarly activities, client session and outcome data, and exit surveys and interviews of students at graduation. Alumni surveys are also conducted every two years to track graduates' attainment of marital and family therapy licensure, data on employment, and feedback regarding how well the program prepares graduates for their job responsibilities. The program faculty also maintains regular contact with community agencies and educational institutions in the region to obtain input into curriculum planning and improvements in clinical training.

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 is 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.

Global focus: The mission of the program reaches beyond the local and national levels to the international community. This includes collaboration and experience with people from other nations and cultures to promote mutual understanding, resolve problems, and strengthen families.

Concentrations

All D.M.F.T. and Ph.D. degree students must complete a 12-unit concentration. The following are preapproved concentrations:

- Systems consultation and professional relations
- Family studies
- Families, systems, and health
- School consultation

Advanced standing policy

National accreditation and certification processes ensure that degrees are comparable across institutional boundaries. This advanced standing policy recognizes the value of these professional review processes on the part of the Department of Counseling and Family Sciences and facilitates cooperation in professional training within the marital and family therapy discipline. The policy assures that at least half of all interim master's degree units and 60 percent of doctoral academic credit will be earned at Loma Linda, while enabling cooperative relationships with other accredited programs.

Guidelines

Advanced standing may be granted for previous course work equivalent in content and scope to required counseling and family sciences courses. This reduces the number of units to be taken at LLU. Determination of advanced standing is based on the following guidelines:

1. Residency requirements
   a. Interim master's degree. Advanced standing may not reduce total units below 45 units for an interim master's degree earned in combination with a CFS doctoral degree.
   b. Doctoral degree. Advanced standing may not reduce total units below 60 units for a Ph.D. degree in marital and family therapy, Ph.D. degree in family studies, or Doctor of Marital and Family Therapy (D.M.F.T.).
2. Determination of equivalency
   a. Courses applied to advanced standing must be graduate-level courses earned at an accredited institution. No credit may be applied for grades lower than B-.
   b. Courses completed in programs accredited by the Commission on Accreditation for Marital and Family Therapy Education (COAMFTE) or Certified Family Life Education (CLFE) programs approved by the National Council on Family Relations will be reviewed as a whole in relation to CFS program requirements. It is anticipated that comparable course content from these schools may be divided into different course configurations than LLU. Students wishing advanced standing based on units earned at other institutions will be evaluated on a case-by-case basis in accordance with COAMFTE or NCFR standards.
   c. Advanced standing is not granted for religion courses.
   d. Doctoral courses taken more than five years previously may be considered for advanced standing *only* if the content has been used professionally on a *regular* basis and the student can demonstrate current knowledge.
   e. Approved prior client contact hours may also be applied. See CFS doctoral handbook for approval process.
   f. A master's degree in marital and family therapy is a prerequisite for the Ph.D. degree in MFT and the D.M.F.T. degree. Courses earned in completion of this degree are not eligible for advanced standing.
3. Approval process
   Students seeking advanced standing should meet with their program director prior to admission or within the first two quarters of study and supply copies of each syllabus of prior course work. Following course review, the program director will write a letter to the School of Behavioral Health that outlines which courses from previous institutions qualify for advanced standing and which equivalent CFS courses will be waived. The letter will specify how many units and client contact hours the student will need to complete the degree. Rather than completing separate academic variances for each course, the student will submit one academic variance accompanied by the program director's letter outlining the advanced standing.

Financial assistance

Students who are accepted into the Ph.D. or D.M.F.T. degree curriculum in marital and family therapy may apply for work-study and department-funded research, teaching, and administrative assistantships awarded by the Department of Counseling and Family Sciences. Departmental awards are contingent on the availability of funds. Students may also apply for need-based financial aid, such as a loan or other work-study programs on campus. Students accepted into the Ph.D. or D.M.F.T. degree curriculum in marital and family therapy are eligible for and encouraged to apply for the AAMFT minority fellowships. See <http://www.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

Accreditation

The Doctor of Marital and Family Therapy degree Program and the Doctor of Philosophy degree in marital and family therapy a is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), 112 South Alfred Street, Alexandria, Virginia 22314; telephone: 703/838-9808; email: coa@aamft.org.

Program requirements

- Marital and Family Therapy—D.M.F.T. (p. 181), Ph.D. (p. 184), Interim M.S. (p. 183), Comparison (p. 188)

Marital and Family Therapy — D.M.F.T.

Interim program director
Winetta Oloo

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.

Students who have not completed a M.S. in Marital and Family Therapy prior to acceptance into the D.M.F.T. or Ph.D. program can be accepted into the interim-M.S./D.M.F.T. or M.S./Ph.D. program in order to fulfill the Marriage and Family Therapist licensure requirements.

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, evidence-based practice, and global perspectives. 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; and are encouraged to engage beyond their local communities to include experiences in wider cultural and global contexts.

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.

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 literature 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.

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.

Accreditation

The Doctor of Marital and Family Therapy degree Program and the Doctor of Philosophy degree in marital and family therapy a is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), 112 South Alfred Street, Alexandria, Virginia 22314; telephone: 703/838-9808; email: coa@aamft.org.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. 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:

- Five-page personal essay (guidelines included in the online application).

- M.S. degree in marital and family therapy, or equivalent.
- Grade point average (3.3 minimum).
- Structured oral interview with department (one day).
- Three letters of reference (two academic and one professional).
- Curriculum vitae.
- Critical essay examination (administered by the department).

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

Corequisites

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

Curriculum

Theory and practice		
MFTH 506	Clinical 1--Foundations for Systemic Practice	3
MFTH 507	Clinical 2--Social Constructionism and Postmodern Practices in MFT	3
MFTH 508	Clinical 3--Larger and Multiple Systems in MFT Practice	3
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	3
Individual development and family relations		
MFTH 505	Advanced Family Studies	4
Supervision		
MFTH 501	Fundamentals of Supervision in Marital and Family Therapy	3
MFTH 502	Advanced Supervision in Marital and Family Therapy	1
Program development and administration		
MFTH 524	Administration in Marital and Family Therapy	3
MFTH 624	Program Development for Families and Communities	3
MFTH 625	Grant Writing	3
MFTH 626	Program Evaluation and Monitoring	3
MFTH 627	Advanced Program Development and Evaluation [1]	4
Spirituality		
RELE 505	Clinical Ethics (or RELE 5__ graduate-level ethics elective)	3
RELR 535	Spirituality and Mental Health	3
RELT 615	Seminar in Philosophy of Religion	3
Research		
MFTH 601	Statistics I	4
MFTH 604	Advanced Qualitative Methods	4
MFTH 605	Advanced Quantitative Methods	4
MFTH 606	Issues in MFT Research	4
MFTH 607	Scholarly Skills	1
Dissertation/Doctoral project		
MFTH 695	Project Research	12
Professional development and practice		
MFTH 634	Practicum in Marital and Family Therapy [1]	9
MFTH 694	Doctoral Seminar	1
MFTH 785A	Begin Clinical Training in Couple, Marital, & Family Therapy [2]	0
MFTH 785B	Clinical Training in Couple, Marital, and Family Therapy (1000 client contact hours required) [1, 2]	20
MFTH 786	Professional Development Proposal [2]	0
MFTH 786A	Professional Development in Marital and Family Therapy (36 nonacademic units) [1, 2]	36
Electives		
Choose one concentration (see choices below) for a minimum of 12 units		12
Elective (In addition to units required for the concentration)		6
Total Units		**102**

1 Course repeated to fulfill total unit requirement

2 700-numbered courses do not count in total didactic units required for the degree

Noncourse requirements

Doctoral degrees in marital and family therapy will be awarded when students have completed all the required course work and the following non-course requirements:

- 1000 approved client contact hours, and
- 200 approved hours of clinical supervision, and
- A written qualifying examination, and
- An oral defense of the doctoral dissertation or project.

Normal time to complete the program

4 years (15 academic quarters) based on full-time enrollment

Concentrations

Family Studies

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.

FMST 518	Advanced Theories in Child Development	3
FMST 526	Marriage and the Family	3
Select 6 units of the following		6

CHLS 507A	Aspects of Illness and Disease	
CHLS 507B	Aspects of Illness and Disease	
CHLS 508	Grief and Loss	
COUN 576	Exceptional and Medically Challenged Children	
FMST 524	Family Resource Management	
FMST 525	Sociology of the Family	
FMST 528	Parenting	
FMST 529	Family Life Education	
MFAM 548	Men and Families	
MFTH 514	Child and Family Therapy	
MFTH 515	Couple and Sex Therapy	
MFTH 516	Divorce and Remarriage	
MFTH 519	Teaching in Higher Education	
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	
MFTH 544	Health and Illness in Families	
Total Units		**12**

Family, Systems, and Health

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.

MFTH 534	Family Therapy and Medicine	3
MFTH 540	Introduction to Medical Family Therapy	3
MFTH 544	Health and Illness in Families	3
Select one of the following		3
CHLS 507A	Aspects of Illness and Disease	
CHLS 507B	Aspects of Illness and Disease	
CHLS 508	Grief and Loss	
COUN 576	Exceptional and Medically Challenged Children	
MFAM 566	Psychopathology and Diagnostic Procedures: Personality	
MFAM 638	Family Therapy and Chemical Abuse	
MFTH 528	Organizations: Structure, Process, and Behavior	
Total Units		**12**

School Consultation

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.

Select 12 units of the following		12
COUN 574	Educational Psychology	
COUN 576	Exceptional and Medically Challenged Children	
COUN 577	Assessment in Counseling	
COUN 578	College and Career Counseling	
COUN 678	Consultation and Program Evaluation	
COUN 679	Professional School Counseling	
Total Units		**12**

Systems Consultation and Professional Relations

MFTH 528	Organizations: Structure, Process, and Behavior	3
MFTH 555	Organizational Development and Change	3
MFTH 556	Management Consulting and Professional Relations	3
MFTH 557	Organizational Assessment	3
Total Units		**12**

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.

MFAM 614	Law and Ethics	3
or MFTH 527	Advanced Legal and Ethical Issues	
MFAM 674	Human Sexual Behavior	3
or MFTH 515	Couple and Sex Therapy	
COUN 675	Dynamics of Aging	1
FMST 518	Advanced Theories in Child Development	3
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 524	Psychopharmacology and Medical Issues	3
MFAM 536	Case Presentation Seminar and Documentation	3
MFAM 537	Case Presentation Seminar	3
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 556	Psychopathology and Diagnostic Procedures	3
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process	3
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 635	Case Presentation Seminar and Legal Issues	3
MFAM 638	Family Therapy and Chemical Abuse	3
MFAM 644	Child Abuse and Family Violence	3
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	3
RELE 564	Ethics and Health Disparities	3
Total Units		**49**

Marital and Family Therapy — Interim M.S.

A student may matriculate into the D.M.F.T. or Ph.D. 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.

Course requirements

Shared units with D.M.F.T. or Ph.D.		
Spirituality		
Select one of the following:		
RELE 505	Clinical Ethics (or RELE 5__ Graduate-level ethics elective)	3
RELR 535	Spirituality and Mental Health	3
RELT 615	Seminar in Philosophy of Religion	3
Research		
MFTH 601	Statistics I	4
MFTH 604	Advanced Qualitative Methods	4
MFTH 605	Advanced Quantitative Methods	4
MFTH 606	Issues in MFT Research	4
Professional development and practice		
MFTH 634	Practicum in Marital and Family Therapy	6
Additional required courses to earn interim master's degree (67 units)		
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		
MFAM 674	Human Sexual Behavior (One of these two courses required for MFT licensure in California)	3
or MFTH 515	Couple and Sex Therapy	
COUN 675	Dynamics of Aging	1
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 524	Psychopharmacology and Medical Issues	3
MFAM 528	Culture, Socioeconomic Status in Therapy	3
MFAM 535	Case Presentation and Professional Studies	3
MFAM 536	Case Presentation Seminar and Documentation	3
MFAM 537	Case Presentation Seminar	3
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 551	Family Therapy: Foundational Theories and Practice	3
MFAM 552	Couples Therapy: Theory and Practice	3
MFAM 553	Family Systems Theory	3
MFAM 556	Psychopathology and Diagnostic Procedures	3
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process	3
MFAM 568	Groups: Process, and Practice	3
MFAM 584	Advanced Child and Adolescent Problems	3
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 614	Law and Ethics	3
MFAM 624	Individual and Systems Assessment	3
MFAM 635	Case Presentation Seminar and Legal Issues	3
MFAM 638	Family Therapy and Chemical Abuse	3
MFAM 644	Child Abuse and Family Violence	3
Total Units		**92**

Noncourse requirements

An interim master's degree will be awarded after students have completed:

- All required courses, and
- An objective comprehensive examination, and
- 100 approved hours of clinical supervision, and
- 500 hours of direct client contact under an AAMFT-approved supervisor.

Length of program

A minimum of five years of full-time study is required to complete a doctoral program with an interim master's degree.

Marital and Family Therapy — Ph.D.

Interim program director
Mary E. Moline

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.

Students who have not completed a M.S. in Marital and Family Therapy prior to acceptance into the D.M.F.T. or Ph.D. program can be accepted into the interim-M.S./D.M.F.T. or M.S./Ph.D. program in order to fulfill the Marriage and Family Therapist licensure requirements.

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, evidence-based practice, and global perspective. They will develop a critical understanding of the theoretical and philosophical foundations of marital and family therapy; critically examine the interrelationships between socio-historical factors, transnational 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, and are encouraged

to engage beyond their local communities to include experiences in wider cultural and global contexts.

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.

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 literature 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.

Interim master's degree

The Ph.D. degree with interim master's degree requires 175 units. This combined degrees 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.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. 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:

- Five-page personal essay (guidelines included in the online application).
- M.S. degree in marital and family therapy, or equivalent.
- Grade point average (3.3 minimum).
- Structured oral interview with department (one day).
- Three letters of reference (two academic and one professional).
- Curriculum vitae (preferred but not required).
- GRE scores (taken within the past five years).

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

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

Corequisites

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
Clinical knowledge in marital and family therapy	16
Individual development and family relations	8
Additional study in the three areas above	4
Professional issues and ethics in marital and family therapy	4
Research	4
Additional related study	4
Total Units	**48**

Curriculum

Theory and practice		
MFTH 504	Advanced Theory in Marital and Family Therapy	4
MFTH 506	Clinical 1--Foundations for Systemic Practice	3
MFTH 507	Clinical 2--Social Constructionism and Postmodern Practices in MFT	3
MFTH 508	Clinical 3--Larger and Multiple Systems in MFT Practice	3
Individual development and family relations		
MFTH 505	Advanced Family Studies	4
Supervision		
MFTH 501	Fundamentals of Supervision in Marital and Family Therapy	3
MFTH 502	Advanced Supervision in Marital and Family Therapy	1
Spirituality		
RELE 505	Clinical Ethics (or RELE 5__ Graduate-level Ethics elective)	3
RELR 535	Spirituality and Mental Health	3
RELT 615	Seminar in Philosophy of Religion	3
Research		
MFTH 601	Statistics I	4
MFTH 602	Statistics II	4
MFTH 603	Statistics III	4

MFTH 604	Advanced Qualitative Methods	4
MFTH 605	Advanced Quantitative Methods	4
MFTH 606	Issues in MFT Research	4
MFTH 607	Scholarly Skills	1
MFTH 608	Analysis and Presentation Issues in Research	3
MFTH 668	Qualitative Research Practicum	2
Dissertation/Doctoral project		
MFTH 698	Dissertation Research [1]	20
Professional development and practice		
MFTH 634	Practicum in Marital and Family Therapy [1]	9
MFTH 694	Doctoral Seminar	1
MFTH 785A	Begin Clinical Training in Couple, Marital, & Family Therapy [2]	0
MFTH 785B	Clinical Training in Couple, Marital, and Family Therapy (1000 client contact hours required) [1, 2]	20
MFTH 786	Professional Development Proposal [2]	0
MFTH 786A	Professional Development in Marital and Family Therapy [1, 2]	36
Electives		
Select one concentration (see choices below) for a minimum of 12 units		12
Elective (In addition to units required for the concentration)		6
Total Units		**108**

1. Course repeated to fulfill total unit requirement
2. 700-numbered courses do not count in total didactic units required for the degree

Noncourse requirements

Doctoral degrees in marital and family therapy will be awarded when students have completed all the required course work and the following non-course requirements:

- 1000 approved client contact hours, and
- 200 approved hours of clinical supervision, and
- A written qualifying examination, and
- An oral defense of the doctoral dissertation or project.

Normal time to complete the program

4 years (15 academic quarters) based on full-time enrollment

Concentrations

Family Studies

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.

FMST 518	Advanced Theories in Child Development	3
FMST 526	Marriage and the Family	3
Select 6 units of the following		6
CHLS 507A	Aspects of Illness and Disease	
CHLS 507B	Aspects of Illness and Disease	
CHLS 508	Grief and Loss	
COUN 576	Exceptional and Medically Challenged Children	
FMST 524	Family Resource Management	
FMST 525	Sociology of the Family	
FMST 528	Parenting	
FMST 529	Family Life Education	
MFAM 548	Men and Families	
MFTH 514	Child and Family Therapy	
MFTH 515	Couple and Sex Therapy	
MFTH 516	Divorce and Remarriage	
MFTH 519	Teaching in Higher Education	
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	
MFTH 544	Health and Illness in Families	
Total Units		**12**

Family, Systems, and Health

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.

MFTH 534	Family Therapy and Medicine	3
MFTH 540	Introduction to Medical Family Therapy	3
MFTH 544	Health and Illness in Families	3
Select one of the following		3
CHLS 507A	Aspects of Illness and Disease	
CHLS 507B	Aspects of Illness and Disease	
CHLS 508	Grief and Loss	
COUN 576	Exceptional and Medically Challenged Children	
MFAM 566	Psychopathology and Diagnostic Procedures: Personality	
MFAM 638	Family Therapy and Chemical Abuse	
MFTH 528	Organizations: Structure, Process, and Behavior	
Total Units		**12**

School Consultation

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.

Select 12 units of the following		12
COUN 574	Educational Psychology	
COUN 576	Exceptional and Medically Challenged Children	
COUN 577	Assessment in Counseling	
COUN 578	College and Career Counseling	
COUN 678	Consultation and Program Evaluation	
COUN 679	Professional School Counseling	
Total Units		**12**

Systems Consultation and Professional Relations

MFTH 528	Organizations: Structure, Process, and Behavior	3
MFTH 555	Organizational Development and Change	3
MFTH 556	Management Consulting and Professional Relations	3
MFTH 557	Organizational Assessment	3
Total Units		**12**

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.

MFAM 614	Law and Ethics	3
or MFTH 527	Advanced Legal and Ethical Issues	
MFAM 674	Human Sexual Behavior	3
or MFTH 515	Couple and Sex Therapy	
COUN 675	Dynamics of Aging	1
FMST 518	Advanced Theories in Child Development	3
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 524	Psychopharmacology and Medical Issues	3
MFAM 536	Case Presentation Seminar and Documentation	3
MFAM 537	Case Presentation Seminar	3
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 556	Psychopathology and Diagnostic Procedures	3
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process	3
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 635	Case Presentation Seminar and Legal Issues	3
MFAM 638	Family Therapy and Chemical Abuse	3
MFAM 644	Child Abuse and Family Violence	3
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	3
RELE 564	Ethics and Health Disparities	3
Total Units		**49**

Marital and Family Therapy — D.M.F.T., Ph.D., Interim M.S. Comparison

Theory and practice	Course Title	DMFT	PhD	Interim MS
MFTH 506	Clinical 1--Foundations for Systemic Practice	3.0	3.0	
MFTH 507	Clinical 2--Social Constructionism and Postmodern Practices in MFT	3.0	3.0	
MFTH 508	Clinical 3--Larger and Multiple Systems in MFT Practice	3.0	3.0	
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing	3.0		
MFTH 504	Advanced Theory in Marital and Family Therapy		4.0	
Totals		**12.0**	**13.0**	
Individual development and family relations	**Course Title**	**DMFT**	**PhD**	**Interim MS**
MFTH 505	Advanced Family Studies	4.0	4.0	
Totals		**4.0**	**4.0**	
Supervision	**Course Title**	**DMFT**	**PhD**	**Interim MS**
MFTH 501	Fundamentals of Supervision in Marital and Family Therapy	3.0	3.0	
MFTH 502	Advanced Supervision in Marital and Family Therapy	1.0	1.0	
Totals		**4.0**	**4.0**	
Program development and administration	**Course Title**	**DMFT**	**PhD**	**Interim 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]	4.0		
Totals		**16.0**		
Spirituality	**Course Title**	**DMFT**	**PhD**	**Interim MS**
RELR 535	Spirituality and Mental Health	3.0	3.0	
RELT 615	Seminar in Philosophy of Religion	3.0	3.0	
RELE 505	Clinical Ethics (or other RELE 5__ graduate-level ethics course) [1]	3.0	3.0	3.0
Totals		**9.0**	**9.0**	**3.0**
Research	**Course Title**	**DMFT**	**PhD**	**Interim MS**
MFTH 607	Scholarly Skills	1.0	1.0	
MFTH 602	Statistics II		4.0	
MFTH 603	Statistics III		4.0	
MFTH 608	Analysis and Presentation Issues in Research		3.0	
MFTH 668	Qualitative Research Practicum		2.0	
MFTH 601	Statistics I	4.0	4.0	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	Issues in MFT Research	4.0	4.0	4.0
Totals		**17.0**	**30.0**	**16.0**
Dissertation/ Doctoral project	**Course Title**	**DMFT**	**PhD**	**Interim MS**
MFTH 695	Project Research[2]	12.0		
MFTH 698	Dissertation Research[2]		20.0	
Totals		**12.0**	**20.0**	

Professional development and practice	Course Title	DMFT	PhD	Interim MS
MFTH 634	Practicum in Marital and Family Therapy[2]	9.0	9.0	6.0
MFTH 694	Doctoral Seminar	1.0	1.0	
MFTH 785A	Begin Clinical Training in Couple, Marital, & Family Therapy[3]	0.0	0.0	
MFTH 785B	Clinical Training in Couple, Marital, and Family Therapy (1000 client contact hours required = 20 units) [2, 3]	0.0	0.0	
MFTH 786	Professional Development Proposal[3]	0.0	0.0	
MFTH 786A	Professional Development in Marital and Family Therapy (36 nonacademic units) [3]	0.0	0.0	
Totals		**10.0**	**10.0**	**6.0**
Electives	**Course Title**	**DMFT**	**PhD**	**Interim MS**
Elective (In addition to units required for the concentration)		6.0		
Elective (In addition to units required for the concentration)			6.0	
Totals		**6.0**	**6.0**	
Concentration	**Course Title**	**DMFT**	**PhD**	**Interim MS**
Select one concentration for a minimum of 12 units		12.0		
Select one concentration for a minimum of 12 units			12.0	
Totals		**12.0**	**12.0**	
Additional required courses to earn interim master's degree	**Course Title**	**DMFT**	**PhD**	**Interim MS**
These courses are 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				
MFAM 674 or 515	Human Sexual Behavior (required for MFT licensure in California)			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 in Therapy			3.0
MFAM 535	Case Presentation and Professional Studies			3.0
MFAM 536	Case Presentation Seminar and Documentation			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 and Legal Issues			3.0
MFAM 638	Family Therapy and Chemical Abuse			3.0

MFAM 644	Child Abuse and Family Violence			3.0
Totals				**67.0**
Overall Totals		**102.0**	**108.0**	**92.0**

1 For the interim M.S. degree, students may also choose from RELR 535 Spirituality and Mental Health or RELT 615 Seminar in Philosophy of Religion.

2 Course repeated to fulfill total unit requirement.

3 700-numbered courses do not count in total didactic units required for the degree

Additional required courses for MFT licensure in California	Course Title	DMFT	PhD	Interim MS
MFAM 614 or 527	Law and Ethics	3.0	3.0	3.0
MFAM 674 or 515	Human Sexual Behavior	3.0	3.0	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 Documentation	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 and Legal Issues	3.0	3.0	
MFAM 638	Family Therapy and Chemical Abuse	3.0	3.0	
MFAM 644	Child Abuse and Family Violence	3.0	3.0	
RELE 564	Ethics and Health Disparities	3.0	3.0	
MFTH 525	Advanced Marital and Family Therapy Assessment and Testing		3.0	
Totals		**46.0**	**49.0**	**6.0**

Medical Family Therapy — Certificate

Program director
Jackie Williams-Reade

The medical family therapy certificate offers formalized didactic and clinical training in order to prepare marriage and family therapists to provide systemic therapeutic interventions to address the physical, emotional, spiritual, and relational needs of patients in medical settings. Through learning and applying a biopsychosocial-spiritual approach, students in the medical family therapy certificate program work as behavioral health interns in medical settings providing care to patients and family members dealing with chronic and critical illness, providing support to medical team members, and enhancing the whole patient system.

Mission statement

The Medical Family Therapy Program is consistent with Loma Linda University's vision of transforming lives through whole person health care. The mission of the program is to support health, healing, and relational wholeness through education, research, clinical training, and community service. The Medical Family Therapy Program accomplishes this through addressing relational concerns, spiritual beliefs and practices, contextual elements such as socioeconomic status and ethnicity, and disease and healing processes of patients and their families.

Admissions

Applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Additional admission requirements include:

- Master's degree in marital and family therapy or closely related field from an accredited institution.
- Clinical licensure or submission of marriage and family therapy registration application for internship status.
- G.P.A. of 3.3 or above
- Three letters of reference (one must be a current or former clinical supervisor).
- Autobiographical statement regarding relevance of the certificate to and anticipated use of the certificate by the applicant.

- An interview (may be a telephone interview) with the program director.
- Completion of course work indicated below.

Prerequisite

- Master's degree in marital and family therapy or closely related field from an accredited institution.
- Courses with the following core content (include syllabi with application): psychopharmacology, child abuse and family violence, family theories, human development across the lifespan.
- 500 documented supervised clinical hours with children, families, and adults.
- Up to 6 credits may be transferred into the certificate program with the consent of the program director.
- Individuals who are only interested in the certificate program must apply to the University and provide all required materials—including transcripts, proof of clinical work, syllabi for prerequisite courses, three letters of recommendation, etc.
- Students enrolled in the Ph.D. degree curriculum in MFT or the D.M.F.T. degree curriculum at LLU may take the certificate concurrently as part of their degree requirements. Completion of the certificate will require students to enroll in the certificate course in lieu of the electives required for their respective degrees. See doctoral program requirements for further details.

* D.M.F.T./Ph.D. degree in MFT students are encouraged to apply for the certificate no later than the beginning of the second year of their doctoral studies.

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Program requirements

Required		
MFTH 506	Clinical 1--Foundations for Systemic Practice	3
MFTH 507	Clinical 2--Social Constructionism and Postmodern Practices in MFT	3
MFTH 508	Clinical 3--Larger and Multiple Systems in MFT Practice	3
MFTH 534	Family Therapy and Medicine	3
MFTH 540	Introduction to Medical Family Therapy	3
MFTH 541	Medical Family Therapy Seminar 1	1
MFTH 542	Medical Family Therapy Seminar 2	1
MFTH 543	Medical Family Therapy Seminar 3	1
MFTH 544	Health and Illness in Families	3
RELE 564	Ethics and Health Disparities	3
Choose from the following:		3
CHLS 507A	Aspects of Illness and Disease	
CHLS 507B	Aspects of Illness and Disease	
CHLS 508	Grief and Loss	
COUN 576	Exceptional and Medically Challenged Children	
MFAM 566	Psychopathology and Diagnostic Procedures: Personality	
MFAM 638	Family Therapy and Chemical Abuse	
MFTH 528	Organizations: Structure, Process, and Behavior	
Additional required clinical training		
MFTH 786B	Professional Internship in Marital and Family Therapy--Clinical (300 clinical hours at an approved medical family therapy site.) *	6
Total Units		**27**

* 700-numbered courses do not count toward minimum didactic units required for the certificate

Normal time to complete the program

1 year (4 academic quarters) — based on full-time enrollment; part time permitted

School Counseling — Certificate

Program director
Cheryl J. Simpson

The School Counseling Program certificate is one of two options in the Department of Counseling and Family Sciences that qualify a graduate for the California pupil personnel services (PPS) credential in school counseling. Students pursuing the M. S. degree curriculum in the Counseling Program may choose school counseling as a single specialization embedded in the degree program, or combine it with the licensed professional clinical counselor (LPCC) specialization. Students in Marital and Family Therapy Program may add the School Counseling Program certificate to their M.S. degree curriculum. Successful completion of the certificate, including passing scores on all sections of the California Basic Educational Skills Test (CBEST), will qualify graduates for the California PPS credential in school counseling. As with all department programs, the School Counseling Program certificate is designed in accordance with the department's vision of transforming relationships. Faculty are committed to the mission of facilitating wholeness by promoting health, healing, and hope to individuals, families, and communities through education, research, professional training, community service, and global outreach.

The call to service

In the heart of campus, the University's commitment to service is memorialized in the Good Samaritan sculpture that contrasts human indifference and ethnic pride with empathy and service. As counseling needs are more openly recognized and accepted across cultures, students and faculty are called to serve together in local and global communities. Loma Linda University's relationships around the world continue to create unique opportunities for students to join in global partnership through field experience.

Professional school counseling

Professional school counselors are leaders of counseling programs within the educational system. As articulated by the American School Counselor Association (ASCA), school counseling programs are preventive in design, developmental in nature, and integral to the total educational program. Counselors address academic, career, and personal/social needs through their work as advocates for K-12 students, collaborators with parents and school personnel, and liaisons to the community. Employment as a school counselor in public schools requires the pupil personnel services credential in school counseling. Combining the school counselor certification with licensure in clinical mental health is an excellent professional path that enhances competence and professional opportunities. Additional information is located on the

California Commission on Teacher Credentialing Web site at <ctc.ca.gov (http://www.ctc.ca.gov)>.

Degree and certificate requirements

The School Counseling Program certificate is paired with the M.S. degree at Loma Linda University. An approved master's degree is required for state credentialing. Therefore, it is not possible to complete the certificate and receive a University recommendation for the school counseling credential until all degree and certificate requirements are completed. This applies to students pursuing the M.S. degree in the Counseling Program (credential option) and the M.S. degree in the Marital and Family Therapy Program (school counseling certificate option). Required courses for the certificate/credential program are listed at the end of this narrative.

Certificate of clearance prior to field placement

School Counseling Program students must obtain a certificate of clearance (COC) from the state of California before they are allowed to begin field experience. The COC requires verification of a current TB test and a LiveScan in accordance with state guidelines. The process can take six-to-eight weeks.

Practicum and field experience

Field experience requirements for the certificate program include 100 hours of prefield practicum, followed by 600 hours of field experience. For students in a clinical master's degree, prefield hours are met earlier in the program through clinical placements. In addition, 200 of the required 600 hours of school counseling field experience can be elective hours from clinical training. The remaining 400 hours must be completed as a school counselor trainee in public schools, evenly divided between two different grade blocks (e.g., elementary school, middle school, or high school).

California Test of Basic Skills (CBEST)

Candidates for the school counseling certificate must take the California Basic Educational Skills Test (CBEST) within the first two quarters following admission to the program and must pass all sections of the CBEST before the University can recommend them for the school counseling credential.

Financial assistance

This program is not independently eligible for federal financial aid. However, a student can complete the requirements for this certificate while concurrently enrolled in a School of Behavioral Health graduate degree program as noted above (see Degree and certificate requirements).

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 clinical hours.
5. Meet all University qualifications for the California pupil personnel services credential in school counseling, issued by the California Commission on Teacher Credentialing (CTC).

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; website: <http://www.wascweb.org> or <wascsr@wascsr.org>. The pupil personnel services (PPS) credential curriculum in school counseling is accredited by the Committee on Accreditation, on behalf of the California Commission on Teacher Credentialing (CTC). Additional PPS information can be obtained by going to the CTC website at <http://ctc.ca.gov>.

Admissions

Students pursuing the M.S. degree in the Counseling Program do not need to apply to the School Counseling Program (certificate) to qualify for the PPS credential because the curriculum is a specialization option within their degree program. Students pursuing the M.S. degree in the Marital and Family Therapy Program must complete the standard online application to enroll in the School Counseling Program (certificate) and are advised to consult with the certificate program director prior to initiating application submission. As with all programs in the School of Behavioral Health, applicants must meet Loma Linda University (p. 24) and School of Behavioral Health (p. 156) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Applicants, who meet these requirements as well as the published deadlines for the following terms, may be admitted during Summer, Autumn, Winter, or Spring quarters. Additional admission requirements include:

- Candidate or graduate with qualifying M.S. degree as specified above.
- 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, or minimum of 3.0 grade point average in master's degree program.
- Two letters of recommendation.
- Written personal statement that addresses career objectives, personal interest in the school counseling profession, rationale for choosing to attend Loma Linda University, how life experiences have influenced applicant's choice to enter professional school counseling, and additional thoughts the applicant deems appropriate. (Will be uploaded as part of the online application process.)
- Interview with program director and department faculty as scheduled. On-campus group interviews are scheduled for early March and late April; other on-campus or telephone interviews are scheduled for individuals as indicated.

Pre-entrance clearance (p. 25):

- A background check
- Health clearance

Applicants who are not citizens or permanent residents of the U.S. must hold a valid student visa prior to enrollment.

Program requirements

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.

Course requirements		
COUN 574	Educational Psychology	3
COUN 575	Counseling Theory and Applications	3
COUN 576	Exceptional and Medically Challenged Children	3
COUN 577	Assessment in Counseling	3
COUN 579	Career Theories and Applications	4
COUN 678	Consultation and Program Evaluation	3
COUN 679	Professional School Counseling	3
COUN 681	School Counseling Practicum and Seminar	2
RELR 564	Religion, Marriage, and the Family	3
or RELR 568	Care of the Dying and Bereaved	
Field experience *		
COUN 781	School Counseling Field Experience (PPS)	4
COUN 782	School Counseling Field Experience (PPS)	4
COUN 783	School Counseling Field Experience (PPS)	4
COUN 784	School Counseling Field Experience	3
Total Units		**27**

* When combining the school counseling certificate program with a clinical master's, the following 12 units of field experience are required. 700-numbered courses do not count toward minimum didactic units required for the certificate.

Normal time to complete the program

1 year (4 academic quarters) — based on full-time enrollment; part time permitted

Department of Psychology

The Department of Psychology offers a combination of innovative training opportunities in clinical psychology. Both the Doctor of Psychology (Psy.D.) and the Doctor of Philosophy (Ph.D.) degrees in clinical psychology are APA-accredited.

Mission statement

The mission of Loma Linda University and Loma Linda University Medical Center is “to make man whole” through the healing and teaching ministry of Jesus Christ. This mission, combined with the University’s values of compassion, integrity, excellence, freedom, justice, purity, and humility are central to the Department of Psychology and its programs. The Department of Psychology seeks to advance the institutional mission, both nationally and internationally, through academic, research, and practice activities related to behavioral health.

Loma Linda is part of a worldwide network of health-care systems and is uniquely connected and poised to participate globally through its numerous clinics, hospitals, health-care facilities, and educational institutions throughout the world. This globalized health-care orientation provides expanded training opportunities for students who have a passion for a broader life experience in assisting with the health-care needs of diverse peoples both nationally and internationally.

Psychology M.A. degree eligibility

A master's degree in psychology is available to students enrolled in the Ph.D. or Psy.D. program, as part of the overall doctoral program, and is based on the successful completion of course work for the degree. Eligibility for the M.A. degree requires the student to complete 51 units of course work and to formally apply (submission of a petition to graduate) for the degree. The Department of Psychology does not admit students to an M.A.-only degree program; and the M.A. degree is not formally awarded at commencement (i.e., students do not participate in the graduation exercise).

A complete list of part-time and voluntary faculty can be viewed on the department Web site: <http://www.llu.edu/behavioral-health/psychology/>.

Interim chair

David Vermeersch

Primary faculty

Adam Archiga

Hector Betancourt

Kendal C. Boyd

Paul Haerich

Richard Hartman

Sylvia Herbozo

Louis Jenkins
Emeritus Professor

Grace J. Lee

Holly Morrell

Cameron Neece

Jason Owen

David A. Vermeersch

Secondary and adjunct faculty

Helen Hopp Marshak

Kelly R. Morton

Janet Sonne

Emeritus faculty

Louis Jenkins

Associated faculty

Jerry W. Lee

Programs

- Psychology — Psy.D. (p. 196), Ph.D. (p. 194), Comparison (p. 199)

Psychology — Ph.D.

Director of clinical training
David Vermeersch

The APA-accredited Ph.D. degree program in clinical psychology has been informed by the traditional scientist-practitioner model, which emphasizes training in research and clinical practice. The Ph.D. degree program is designed to be completed in six years (or approximately twenty-four quarters of full-time enrollment).

The specific objective of the Ph.D. degree program is to provide students:

- a solid academic foundation (with a 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 involving research as a significant component.

Among the outcomes measures used to determine the Ph.D. degree program's success in achieving the above-mentioned objectives are the following:

1. Psychological science foundation and clinical course performance, as well as successful completion of the comprehensive examination.
2. Training in empirical methods of science—performance in research methods and statistics courses, thesis, and dissertation; presentations, publications, and grants; research and teaching assistantships; teaching positions in area colleges/universities; and membership in scientific/professional organizations.
3. Clinical skills—performance in general clinical, assessment, and treatment courses; ongoing clinical evaluations from practicum placements and internship; and successful completion of the comprehensive examination.

Curriculum

The clinical Ph.D. degree program requires completion of course work in the following areas: psychological science foundations, quantitative/ research foundations, wholeness, general and elective courses, psychological assessment and treatment, clinical practice, and research. The specific course requirements are predicated on the training model (i.e., scientist-practitioner). The specific curriculum requirements associated with the Ph.D. degree program are indicated below.

With regard to elective courses, all students are required to complete a specified number of elective units for the completion of their degree. The department offers elective course work in specialty areas such as clinical health psychology, neuroscience and neuropsychology, clinical child psychology, and social/cultural health psychology, among other areas.

Students have the option (but are not required) to utilize 12 units of their total elective unit requirement to fulfill a professional concentration. In order to complete a professional concentration, students must submit a formal proposal to the Department Academic Affairs Committee indicating the 12 elective units they propose to use toward the completion of their professional concentration, as well as the proposed title of the professional concentration. The Department Academic Affairs Committee will consider each proposal individually in making a recommendation to support/not support the proposed concentration.

Accreditation

The Doctor of Philosophy degree in Clinical Psychology is accredited by the Commission on Accreditation of the American Psychological Association. Questions related to the program's accreditation status should be directed to the Commission on Accreditation:

Office of Program Consultation and Accreditation
American Psychological Association
750 1st Street, NE, Washington, DC 20002
phone: 202/ 336-5979; e-mail: apaaccred@apa.org; website: http://www.apa.org/ed/accreditation

Admissions

In addition to Loma Linda University (p. 24) and School of Behavioral Health (p. 156) and the Faculty of Graduate Studies admissions requirements, the following minimum criteria are preferable to be considered for a pre-admission interview:

- A bachelor's degree in psychology or a related discipline.
- An undergraduate G.P.A. of 3.0 or higher on a 4.0 scale **or** a master's degree G.P.A. of 3.3 or higher from a regionally accredited graduate program
- *Verbal and quantitative scores, Graduate Record Examination (GRE) general test*: The sum of the GRE verbal and quantitative percentile rankings must equal or exceed 100, and neither percentile ranks can be below the 35th percentile. Only the most current GRE scores are admissible (exam must have been taken within the last 5 years and the most recent dated exam will be considered). The GRE psychology subject examination is not required.
- *Writing assessment, GRE general test*: The GRE Analytical Writing section score must equal 4.0 or higher.
- *Structured pre-admission interview by invitation*: The psychology department requires a structured pre-admissions interview.
- *Recommendation letters*: Three letters of recommendation from professionals *unrelated* to the applicant and qualified to assess the applicant's potential for graduate education. **A** minimum of two letters are required from current or previous professors

Any exceptions to the established G.P.A. and GRE minimum criteria, or any other admissions criteria, are made at faculty discretion and grounded on faculty's overall assessment of the applicant and his/her credentials (e.g., demonstrated record of scholarship and/or specialized research training, strength of the applicant's prior academic training / institution, strength of applicant's letters of recommendation, and previous clinical experience).

Program requirements

Core Curriculum I: Foundations of psychological science		
PSYC 524	History, Systems, and Philosophy of Psychology	2
PSYC 545	Cognitive Foundations	4
PSYC 551	Psychobiological Foundations	4
PSYC 564	Foundations of Social and Cultural Psychology	4
PSYC 575	Foundations of Human Development	4
PSYC 591	Colloquia (one unit each year for three years) [5]	3
Core Curriculum II: Quantitative psychology research methodology		
PSYC 501	Advanced Statistics I	4
PSYC 502	Advanced Statistics II	4
PSYC 503	Advanced Multivariate Statistics (required only for M.A. of students pursuing the Ph.D.)	4
PSYC 505	Research Methods in Psychological Science	4
PSYC 511	Psychometric Foundations	3
Core Curriculum III: Wholeness		
PSYC 526	Ethics and Legal Issues in Clinical Psychology	3
PSYC 554	Health Psychology	4
PSYC 567	Human Diversity	3
Choose one course from each prefix		9
RELE 5__	Graduate-level Ethics [1]	
RELR 535	Spirituality and Mental Health (or another RELR graduate-level relational elective)	
RELT 5__	Graduate-level Theological [1]	
Clinical psychology: General		
PSYC 555	Psychopharmacology	2
PSYC 571	Adult Psychopathology	4
PSYC 681	Clinical Supervision and Consultation	2
Psychological assessment		
PSYC 512	Cognitive/Intellectual Assessment	2
PSYC 512L	Cognitive/Intellectual Practice Laboratory	1
PSYC 513	Objective Personality Assessment	2
PSYC 513L	Objective Personality Practice Laboratory	1
PSYC 516	Neuropsychological Assessment	2
PSYC 516L	Neuropsychological Assessment Practice Laboratory	1
Psychological treatment		
PSYC 581	Evidence-Based Psychological Practice I	2
PSYC 581L	Evidence-Based Psychological Practice I	1
PSYC 582	Evidence-Based Psychological Practice II	2
PSYC 582L	Evidence-Based Psychological Practice II	1
PSYC 583	Evidence-Based Psychological Practice III	2

PSYC 583L	Evidence-Based Psychological Practice III	1
PSYC 584	Evidence-Based Psychological Practice IV	2
PSYC 584L	Evidence-Based Psychological Practice IV	1
Elective		
Other options avialable for electives [2]		18
PSYC 566	Cultural Psychology	
PSYC 604	Advanced Topics in Multivariate Analyses	
PSYC 676	Geropsychology [3]	
PSYC 681L	Clinical Supervision and Consultation Laboratory	
PSYC 683	Management and Professional Practice	
PSYC 684	Human Sexual Behavior and Treatment [3]	
PSYC 685	Drug Addiction and Therapy [3]	
PSYC 686	Child, Partner, and Elder Abuse [3]	
PSYC 795	Directed Clinical Experience [4]	
Research		
PSYC 597	Supervised Research [5]	8
PSYC 697	Doctoral Research [5]	43
Clinical Practice [4]		
PSYC 721	Practicum Preparation I	3
PSYC 781	Internal Practicum [5]	8
PSYC 782	External Practicum I	4
PSYC 783	External Practicum II	4
PSYC 784	External Practicum III	4
PSYC 785	External Practicum IV	4
PSYC 798	Pre-Internship [5]	16
PSYC 799B	Internship (10 units per quarters [2000 hours]) [5]	40
Total Units		**157**

1 RELE 600 level courses will also be accepted

2 Students may meet their elective-unit requirement through any of the following: 1) any elective course chosen from this list, 2) any other elective course offered by the Department of Psychology that is not being used to meet another requirement, 3) any graduate-level course offered in any other department in the School of Behavioral Health, or 4) any graduate-level course offered in any other school other than the School of Behavioral Health with department approval.

3 California licensure

4 700-numbered courses do not count toward total graduate units required for the degree

5 Multiple registrations required to fulfill total required units.

Minimum required grade point average

Students must maintain a minimum grade point average of B (3.0) in all courses taken for the degree.

Comprehensive examination

Students in the Ph.D. program must successfully pass the comprehensive examination. The comprehensive examination is taken after completing the core curriculum. Though the specific format of the comprehensive examination is subject to change, the department currently utilizes the Examination for Professional Practice in Psychology (EPPP) or the Practice Examination for Professional Practice in Psychology (PEPPP) as the comprehensive examination. This examination covers the following domains:

- Biological bases of behavior
- Cognitive—affective bases of behavior
- Social and multicultural bases of behavior
- Growth and lifespan development
- Assessment and diagnosis
- Treatment/Intervention
- Research Methods
- Ethical/Legal/Professional issues

Doctoral research

Students in the Clinical Ph.D. program are expected to meet specified research requirements, among which are a thesis and a dissertation. The requirements for the thesis and dissertation are delineated by the Department in accordance with standards established by the School of Behavioral Health (SBH) and the Faculty of Graduate Studies (FGS). For both the thesis and doctoral dissertation, a formal proposal must be submitted to and approved by a faculty supervisory committee. Furthermore, upon completion of each 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
- required practicum experiences
- the comprehensive examination
- the thesis
- the doctoral dissertation proposal

Normal time to complete the program

6 years — full-time enrollment required

Psychology — Psy.D.

Director of clinical training
Adam Arechiga

The APA-accredited Psy.D. degree program, 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. degree program is designed to be completed in five years (or approximately 20 quarters of full-time enrollment).

The specific objective of the Psy.D. degree program is to provide students:

- a solid academic foundation (with a 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. Psychological science foundation and clinical course performance, as well as successful completion of the comprehensive examination.
2. Clinical skills development as evidenced by performance in general clinical, assessment, and treatment courses; ongoing

clinical evaluations from practicum placements and internship; and successful completion of the comprehensive 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 Psy.D. degree program makes a systematic attempt to promote an understanding of human behavior in relation to psychological, physical, spiritual, and social/cultural dimensions. For this purpose, the program provides a positive environment for the study of psychological, biological, cultural, social, and spiritual issues relevant to psychological research and practice.

Curriculum

The clinical Psy.D. degree program requires completion of course work in the following areas: psychological science foundations, quantitative/ research foundations, wholeness, general and elective courses, psychological assessment and treatment, clinical practice, and research. The specific course requirements are predicated on the training model (i.e., practitioner-scholar). The specific curriculum requirements associated with the Psy.D. degree program are indicated below.

With regard to elective courses, all students are required to complete a specified number of elective units for the completion of their degree. The department offers elective course work in specialty areas such as clinical health psychology, neuroscience and neuropsychology, clinical child psychology, and social/cultural health psychology, among other areas.

Students have the option (but are not required) to utilize 12 units of their total elective unit requirement to fulfill a professional concentration. In order to complete a professional concentration, students must submit a formal proposal to the Department Academic Affairs Committee indicating the 12 elective units they propose to use toward the completion of their professional concentration, as well as the proposed title of the professional concentration. The Department Academic Affairs Committee will consider each proposal individually in making a recommendation to support/not support the proposed concentration.

Accreditation

The Doctor of Psychology degree in clinical psychology is is accredited by the Commission on Accreditation of the American Psychological Association. Questions related to the program's accreditation status should be directed to the Commission on Accreditation:

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- *Verbal and quantitative scores, Graduate Record Examination (GRE) general test*: The sum of the GRE verbal and quantitative percentile rankings must equal or exceed 100, and neither percentile ranks can be below the 35th percentile. Only the most current GRE scores are admissible (exam must have been taken within the last 5 years and the most recent dated exam will be considered). The GRE psychology subject examination is not required.
- *Writing assessment, GRE general test*: The GRE analytical writing section score must equal 4.0 or higher.
- *Structured pre-admission interview by invitation*: The psychology department requires a structured pre-admissions interview.
- *Recommendation letters*: Three letters of recommendation from professionals *unrelated* to the applicant and qualified to assess the applicant's potential for graduate education. **A** minimum of two letters are required from current or previous professors

Any exceptions to the established G.P.A. and GRE minimum criteria, or any other admissions criteria, are made at faculty discretion and grounded on faculty's overall assessment of the applicant and his/her credentials (e.g., demonstrated record of scholarship and/or specialized research training, strength of the applicant's prior academic training / institution, strength of applicant's letters of recommendation, and previous clinical experience).

Degree requirements

Core Curriculum I: Foundations of psychological science		
PSYC 524	History, Systems, and Philosophy of Psychology	2
PSYC 545	Cognitive Foundations	4
PSYC 551	Psychobiological Foundations	4
PSYC 564	Foundations of Social and Cultural Psychology	4
PSYC 575	Foundations of Human Development	4
PSYC 591	Colloquia (One unit each year for three years) [5]	3
Core Curriculum II: Quantitative psychology research methodology		
PSYC 501	Advanced Statistics I	4
PSYC 502	Advanced Statistics II	4
PSYC 505	Research Methods in Psychological Science	4
PSYC 511	Psychometric Foundations	3
Core Curriculum III: Wholeness		
PSYC 526	Ethics and Legal Issues in Clinical Psychology	3
PSYC 554	Health Psychology	4
PSYC 567	Human Diversity	3
Choose one course from each prefix		9
RELE 5__	Graduate-level ethics	
RELR 535	Spirituality and Mental Health (or another RELR graudate-level relational elective)	
RELT 5__	Graduate-level theological [1]	
Clinical psychology: General		
PSYC 555	Psychopharmacology	2
PSYC 571	Adult Psychopathology	4
PSYC 681	Clinical Supervision and Consultation	2
PSYC 681L	Clinical Supervision and Consultation Laboratory	1
PSYC 683	Management and Professional Practice	1

Psychological assessment		
PSYC 512	Cognitive/Intellectual Assessment	2
PSYC 512L	Cognitive/Intellectual Practice Laboratory	1
PSYC 513	Objective Personality Assessment	2
PSYC 513L	Objective Personality Practice Laboratory	1
PSYC 516	Neuropsychological Assessment	2
PSYC 516L	Neuropsychological Assessment Practice Laboratory	1
Psychological treatment		
PSYC 581	Evidence-Based Psychological Practice I	2
PSYC 581L	Evidence-Based Psychological Practice I	1
PSYC 582	Evidence-Based Psychological Practice II	2
PSYC 582L	Evidence-Based Psychological Practice II	1
PSYC 583	Evidence-Based Psychological Practice III	2
PSYC 583L	Evidence-Based Psychological Practice III	1
PSYC 584	Evidence-Based Psychological Practice IV	2
PSYC 584L	Evidence-Based Psychological Practice IV	1
Electives		19
Other options available for electives [2]		
PSYC 566	Cultural Psychology	
PSYC 604	Advanced Topics in Multivariate Analyses	
PSYC 676	Geropsychology	
PSYC 684	Human Sexual Behavior and Treatment [3]	
PSYC 685	Drug Addiction and Therapy [3]	
PSYC 686	Child, Partner, and Elder Abuse [3]	
Research		
PSYC 696	Psy.D. Doctoral Research [5]	16
Clinical Practice [4]		
PSYC 721	Practicum Preparation I	3
PSYC 781	Internal Practicum [5]	8
PSYC 782	External Practicum I	4
PSYC 783	External Practicum II	4
PSYC 784	External Practicum III	4
PSYC 785	External Practicum IV	4
PSYC 798	Pre-Internship [5]	16
PSYC 799B	Internship (10 units per quarter [2000 hours]) [5]	40
Total Units		**121**

1. RELE 600 level courses will also be accepted
2. Students may meet their elective-unit requirement through any of the following: 1) any elective course chosen from this list, 2) any other elective course offered by the Department of Psychology that is not being used to meet another requirement, 3) any graduate-level course offered in any other department in the School of Behavioral Health, or 4) any graduate-level course offered in any other school other than the School of Behavioral Health with department approval.
3. California licensure
4. 700-numbered courses do not count toward total didactic units required for the degree
5. Multiple registrations required to fulfill total required units.

Minimum required grade point average

Students must maintain a minimum grade point average of B (3.0) in all courses taken for the degree.

Comprehensive examination

Students in the Psy.D. program must successfully pass the comprehensive examination. The comprehensive examination is taken after completing the core curriculum. Though the specific format of the comprehensive examination is subject to change, the department currently utilizes the Examination for Professional Practice in Psychology (EPPP) or the Practice Examination for Professional Practice in Psychology (PEPPP) as the comprehensive examination. This examination covers the following domains:

- Biological bases of behavior
- Cognitive—affective bases of behavior
- Social and multicultural bases of behavior
- Growth and lifespan development
- Assessment and diagnosis
- Treatment/Intervention
- Research Methods
- Ethical/Legal/Professional issues

Doctoral research

Students in the Psy.D. programs are expected to complete specified research requirements, among which is the doctoral project, the requirements of which are delineated by the Department in accordance with standards established by the School of Behavioral Health (SBH). For the doctoral project, a formal proposal must be submitted to and approved by a faculty supervisory committee. Furthermore, upon completion of the 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);
- required practicum experiences
- the comprehensive examination
- the doctoral project proposal

Normal time to complete the program

5 years — full-time enrollment required

Psychology — Ph.D., Psy.D. Comparison

Core Curriculum I: Foundations of Psychological Science	**Course Title**	**PsyD**	**PhD**
PSYC 524	History, Systems, and Philosophy of Psychology	2.0	2.0
PSYC 545	Cognitive Foundations	4.0	4.0
PSYC 551	Psychobiological Foundations	4.0	4.0
PSYC 564	Foundations of Social and Cultural Psychology	4.0	4.0
PSYC 575	Foundations of Human Development	4.0	4.0
PSYC 591	Colloquia (One unit each year for three years)	3.0	3.0
Totals		**21.0**	**21.0**
Core Curriculum II: Quantitative Psychology Research Methodology	**Course Title**	**PsyD**	**PhD**
PSYC 501	Advanced Statistics I	4.0	4.0
PSYC 502	Advanced Statistics II	4.0	4.0
PSYC 505	Research Methods in Psychological Science	4.0	4.0
PSYC 511	Psychometric Foundations	3.0	3.0
PSYC 503	Advanced Multivariate Statistics (Required only for MA of students pursuing the PhD)		4.0
Totals		**15.0**	**19.0**
Core Curriculum III: Wholeness	**Course Title**	**PsyD**	**PhD**
Select one course from each prefix.		9.0	
RELE 5__ Graduate-level ethics[1]			
RELR 535	Spirituality and Mental Health (or another RELR graduate-level relational elective)		
RELT 5__ Graduate-level Theological[2]			
Select one course from each prefix.			9.0
RELE 5__ Graduate-level ethics[1]			
RELR 535	Spirituality and Mental Health (or another RELR graduate-level relational elective)		
RELT 5__ Graduate-level Theological[2]			
PSYC 526	Ethics and Legal Issues in Clinical Psychology	3.0	3.0
PSYC 554	Health Psychology	4.0	4.0
PSYC 567	Human Diversity	3.0	3.0
Totals		**19.0**	**19.0**
Clinical Psychology: General	**Course Title**	**PsyD**	**PhD**
PSYC 571	Adult Psychopathology	4.0	4.0
PSYC 555	Psychopharmacology	2.0	2.0
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	
Totals		**10.0**	**8.0**
Psychological Assessment	**Course Title**	**PsyD**	**PhD**
PSYC 512	Cognitive/Intellectual Assessment	2.0	2.0
PSYC 512L	Cognitive/Intellectual Practice Laboratory	1.0	1.0
PSYC 513	Objective Personality Assessment	2.0	2.0
PSYC 513L	Objective Personality Practice Laboratory	1.0	1.0
PSYC 516	Neuropsychological Assessment	2.0	2.0

PSYC 516L	Neuropsychological Assessment Practice Laboratory	1.0	1.0
Totals		**9.0**	**9.0**
Psychological Treatment	**Course Title**	**PsyD**	**PhD**
PSYC 581	Evidence-Based Psychological Practice I	2.0	2.0
PSYC 581L	Evidence-Based Psychological Practice I	1.0	1.0
PSYC 582	Evidence-Based Psychological Practice II	2.0	2.0
PSYC 582L	Evidence-Based Psychological Practice II	1.0	1.0
PSYC 583	Evidence-Based Psychological Practice III	2.0	2.0
PSYC 583L	Evidence-Based Psychological Practice III	1.0	1.0
PSYC 584	Evidence-Based Psychological Practice IV	2.0	2.0
PSYC 584L	Evidence-Based Psychological Practice IV	1.0	1.0
Totals		**12.0**	**12.0**
Electives	**Course Title**	**PsyD**	**PhD**
Other options available for electives[3]		19.0	
PSYC 566	Cultural Psychology		
PSYC 604	Advanced Topics in Multivariate Analyses		
PSYC 676	Geropsychology		
PSYC 684	Human Sexual Behavior and Treatment		
PSYC 685	Drug Addiction and Therapy		
PSYC 686	Child, Partner, and Elder Abuse		
Other options available for electives[3]			18.0
PSYC 566	Cultural Psychology		
PSYC 604	Advanced Topics in Multivariate Analyses		
PSYC 676	Geropsychology		
PSYC 681L	Clinical Supervision and Consultation Laboratory		
PSYC 683	Management and Professional Practice		
PSYC 684	Human Sexual Behavior and Treatment		
PSYC 685	Drug Addiction and Therapy		
PSYC 686	Child, Partner, and Elder Abuse		
PSYC 795	Directed Clinical Experience		
Totals		**19.0**	**18.0**
Research	**Course Title**	**PsyD**	**PhD**
PSYC 696	Psy.D. Doctoral Research	16.0	
PSYC 597	Supervised Research		8.0
PSYC 697	Doctoral Research		43.0
Totals		**16.0**	**51.0**
Clinical Practice	**Course Title**	**PsyD**	**PhD**
PSYC 721	Practicum Preparation I[4]	3.0	3.0
PSYC 781	Internal Practicum[4]	8.0	8.0
PSYC 782	External Practicum I[4]	4.0	4.0
PSYC 783	External Practicum II[4]	4.0	4.0
PSYC 784	External Practicum III[4]	4.0	4.0
PSYC 785	External Practicum IV[4]	4.0	4.0
PSYC 798	Pre-Internship[4]	16.0	16.0
PSYC 799B	Internship (10 units per quarter, total 40 units (2000 hours)) [4]	40.0	40.0
Totals			
Overall Totals		**121.0**	**157.0**

1 RELE 500- or 600-level courses will also be accepted

2 RELT 500- or 600-level courses will also be accepted

[3] Students may meet their elective-unit requirement through any of the following: 1) any elective course chosen from this list, 2) any other elective course offered by the Department of Psychology that is not being used to meet another requirement, 3) any graduate-level course offered in any other department in the School of Behavioral Health, or 4) any graduate-level course offered in any other school other than the School of Behavioral Health with department approval.

[4] 700-numbered courses do not count toward total didactic units required for the degree

Department of Social Work and Social Ecology

The Department of Social Work and Social Ecology is an interdisciplinary academic unit that follows in the institution's commitment to human wholeness and its belief that one's fullest development is achieved when all subsystems affecting the individual are understood and in balance. Both conceptually and pragmatically, the programs found in the Department of Social Work and Social Ecology are guided by an overarching ecological (bio-psycho-social-spiritual) perspective and methodological framework that supports the use of scientific methods of problem analysis and program design.

A key component in this framework is the importance of interdisciplinary scholarship when studying the interrelated aspects of behavioral, socio-political, economic, and environmental problems. The result is an interdisciplinary teaching, learning, and practice environment brought together for the purpose of creating sustainable interventions directed toward improving the functioning of individuals, families, groups, organizations, institutions, and communities. As such, priority has been given to creating an academic milieu favorable to educating competent, ethical, and compassionate professionals and scholars for advanced practice roles—capable of respecting and addressing the needs of diverse populations.

A complete list of part-time and voluntary faculty can be viewed on the department Web site <http://www.llu.edu/behavioral-health/socialwork/>.

Chair

Beverly J. Buckles

Executive associate chair

Kimberly Freeman

Primary faculty

Walleska Bliss

Beverly J. Buckles

Monte Butler

Kimberly Freeman

Froylana Heredia-Miller

G. Victoria Jackson

Sigrid James

Viola Lindsey

Allison Maxwell

Susanne Montgomery

Larry Ortiz

Secondary faculty

Craig R. Jackson

Clinical faculty

Lauren R. Ball

Emeritus faculty

Dianna Simon

Ignatius Yacoub

Programs

- Criminal Justice — M.S. (p. 202)
- Gerontology — M.S. (p. 204)
- Play Therapy — Certificate (p. 206)
- Social Policy and Social Research — Ph.D. (p. 207)
- Social Work — M.S.W. (p. 209)

Criminal Justice — M.S.

Program director
Froylana Heredia-Miller

Loma Linda University's mission, "To make man whole," provides a powerful and much-needed context in which criminal justice, within a behavioral health framework, can be addressed on the basis of healing and restoration. The Criminal Justice Program comprises two concentration tracks: forensic mental health and criminal justice administration.

A multidisciplinary approach considers the biological, psychological, social, 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 in a behavioral health context.

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, to work with the legal system as it relates to mental health issues, and to work within a forensic mental health framework.

Program objectives

Students will demonstrate:

- The ability to integrate and utilize knowledge of social science and criminological theory as they apply to problems of criminal justice and/or behavioral health settings.
- 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/forensic mental health 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 major mental illness and treatment interventions within a forensic mental health framework.
- 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 24 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 15 units of concentration course work and specific selectives.

To complete the program, the student has two options:

1. Nonthesis: Professional practica (540 hours of integrated practicum and seminar) and 9 units of didactic selectives; OR
2. Thesis: 6 units of academic thesis and 3 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.

Liberal arts preparation

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.) 20-24 units
- English and Communication Skills (e.g., oral and written communication media, etc.) 9-13 units
- Natural and Social Sciences (e.g. mathematics, human biology, physiology, psychology, sociology, anthropology, human development, ethnic studies, economics, political sciences or government, etc.) 24-32 units.

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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, this program follows the admission requirements of the and School of Behavioral Health (p. 156) as follows:

1. 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 Behavioral Health. 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 a grade point average 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
      - comportment
3. Submission of three letters of recommendation (one from an academic source and one from a work supervisor, preferred).

Program requirements

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.

Core		
CRMJ 515	Crime and Society	3
CRMJ 517	Criminal Procedure and Rules of Evidence	3
CRMJ 520	Restorative Justice	3
CRMJ 574	Criminological Theory	4
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services	3
Religion, philosophy, and ethics		3
Choose from the following:		
RELE 524	Bioethics and Society	
REL_5__	Graduate-level Religion. An approved 3-unit course within subject area, in consultation with advisor	
Social research methods		
SOWK 548	Research Methods	5
Concentration		
Only one concentration required. See below.		15
Degree completion options		9
Nonthesis option:		
Selectives (9 units) [1]		
CRMJ 518	Legal Discourse	
CRMJ 519	Expert Testimony: Procedure and Practice	
CRMJ 599	Directed Study/Special Project	
GLBH 548	Violence and Terrorism Issues	
GLBH 550	Women in Development	
SOWK 514	Social Welfare Policies and Services	
SOWK 659	Recovery in Behavioral Health	
SOWK 683	Advanced Policy Analysis	
SOWK 684	Advanced Policy Projects	
Professional Practicum [2]		
CRMJ 757A	Professional Practicum and Seminar	
CRMJ 757B	Professional Practicum and Seminar	
CRMJ 757C	Professional Practicum and Seminar	
SOWK 578	Field Orientation	
Thesis option:		
Selective (3 units from nonthesis option above)		
SOWK 697	Applied Research (4 units)	
SOWK 698	Thesis	
Total Units		**48**

1 Other courses may be approved for elective credits in consultation with the faculty advisor and in accordance with University policies for academic variances

2 Professional practicum and seminar units are not calculated into total didactic units required for the degree. Students pay program fees for professional practicum units instead of tuition. Practicum and seminar hours: 480 + 60.

Concentrations

Only one concentration required

Policy, planning, and administration		
CRMJ 630	Criminal Justice Planning and Administration (Required)	3
SOWK 672	Theories of Organizations and Systems (Required)	3
Choose from the following:		9
SOWK 673	Program Planning and Implementation	
SOWK 676	Human Resources Planning and Development	
SOWK 681	Global Practice III: Behavioral Health Policies and Services	
SOWK 683	Advanced Policy Analysis	
Total Units		**15**

Forensic mental health		
CRMJ 620	Forensic Mental Health (Required)	3
SOWK 662	Behavioral and Cognitive Therapies	4
SOWK 662L	Behavioral and Cognitive Therapies Practice	1
Choose from the following:		7
MFAM 638	Family Therapy and Chemical Abuse	
MFAM 644	Child Abuse and Family Violence	
PSYC 685	Drug Addiction and Therapy	
PSYC 686	Child, Partner, and Elder Abuse	
SOWK 648	Co-occurring Processes and Interventions	
SOWK 659	Recovery in Behavioral Health	
SOWK 681	Global Practice III: Behavioral Health Policies and Services	
Total Units		**15**

Normal time to complete the program

2 years (7 quarters) based on full-time enrollment; part time permitted

Gerontology — M.S.

Program director
Carrie Eskay

Gerontology is the multidisciplinary-multidimensional study of aging and the 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 to understanding the social, cultural, and economic factors that affect services for this population.

The study of older adults has become increasingly important with the aging of the general population. In the next twenty years, the older adult population is projected to double—resulting in a wide spectrum of needs facing this population, which necessitates competently educated professionals.

Mission

The mission of the Gerontology Program is to provide graduate-level education for future and current professionals who are dedicated to enhancing the lives of older adults through advanced, evidenced-based 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 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.
- Students will demonstrate the ability to utilize and integrate a strengths-based perspective, acknowledging the unique and special gifts and talents present in the older adult population.

General overview

The 48-unit program begins with 22 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 15 units of concentration-specific course work.

Regardless of the concentration students choose, they are given either a thesis or a nonthesis (professional practicum) option.

1. Thesis: Students who choose the thesis option complete 6 research-related units and 5 units of selectives.
2. Nonthesis: Students choosing the internship option complete a practical orientation, 540 hours of integrated practicum and seminar, and 11 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.

Liberal arts preparation

A balance of course work in three liberal arts areas:

- Humanities (e.g., history, philosophy, literature, art, music, etc.) 20-24 units
- English and Communication Skills (e.g., oral and written communication media, etc.) 9-13 units
- Natural and Social Sciences (e.g. mathematics, human biology, physiology, psychology, sociology, anthropology, human development, ethnic studies, economics, political sciences or government, etc.) 24-32 units.

Students who fail to meet 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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, this program follows the admission requirements of the School of Behavioral Health (p. 156), as follows:

1. 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 Behavioral Health. 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 a grade point average 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: (1) verbal communication skills, (2) critical thinking ability, (3) values congruent with the profession of gerontology, (4) appreciation for human diversity, (5) evidence of reflective learning, and (6) comportment.
3. Submission of three letters of recommendation (one from an academic source and one from a work supervisor preferred).

Program requirements

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 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.

Social science theory		
GERO 615	Economics and Management Issues of Older Adult Services	4
GERO 617	Bio-psycho-social-spiritual Theories of Aging	4
Clinical practice		
GERO 515	Diversity and Aging	3
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services	3
Religion, philosophy, and ethics		
RELE 524	Bioethics and Society	3
or RELR 568	Care of the Dying and Bereaved	
Social research methods		
SOWK 548	Research Methods	5
Concentration		
Choose one concentration. See below.		15
Degree completion options		11
Nonthesis option:		
Selectives (11 units) [1]		
GERO 599	Directed Study/Special Project	
HPRO 584	Aging and Health	
SOWK 681	Global Practice III: Behavioral Health Policies and Services	
SOWK 683	Advanced Policy Analysis	
SOWK 684	Advanced Policy Projects	
Professional Practicum [2]		
GERO 757A	Professional Practicum and Seminar	
GERO 757B	Professional Practicum and Seminar	
GERO 757C	Professional Practicum and Seminar	
SOWK 578	Field Orientation	
Thesis option:		
Selective (3 units from nonthesis option above)		
SOWK 697	Applied Research (4 units)	
SOWK 698	Thesis	
Total Units		**48**

1. Other courses may be approved for elective credits in consultation with the faculty advisor and in accordance with University policies for academic variances
2. Professional practicum and seminar units are not calculated into total didactic units required for the degree. Students pay program fees for professional practicum units instead of tuition. Practicum and seminar hours: 480 + 60.

Concentrations

Choose one concentration

Policy, planning, and administration		
SOWK 672	Theories of Organizations and Systems	3
SOWK 673	Program Planning and Implementation	5
SOWK 676	Human Resources Planning and Development	4
SPOL 588	Special Topics in Social Policy and Social Research (Topic: Policy and Administration in Aging Services)	3
Total Units		**15**

Clinical services		
GERO 654A	Therapeutic Interventions with Older Adults I	3
GERO 654B	Therapeutic Interventions with Older Adults II	3
Choose from the following:		9
HPRO 548	Community and Domestic Violence	
MFAM 638	Family Therapy and Chemical Abuse	
PSYC 685	Drug Addiction and Therapy	
PSYC 686	Child, Partner, and Elder Abuse	
SOWK 648	Co-occurring Processes and Interventions	
SOWK 659	Recovery in Behavioral Health	
Total Units		**15**

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment; part time permitted

Play Therapy — Certificate

Interim program director
Kimberly Freeman

The Play Therapy Program certificate is housed under the Division of Interdisciplinary Studies in the School of Behavioral Health. Programs under the Division of Interdisciplinary Studies are considered areas of study that are applicable to all of the behavioral health professions. As such, these programs bring together the collective academic and clinical expertise of all of the departments in the School of Behavioral Health.

Program curriculum

Students concurrently enrolled in a degree program in the School of Behavioral Health need to work with their program to determine if any of the courses in the Play Therapy Program may also count toward program electives. University policies regarding double counting of courses apply.

Admissions

Priority in admissions to the Play Therapy Program certificate curriculum is given to students concurrently enrolled in a master's or doctoral degree program in the School of Behavioral Health. These applicants must:

1. Already have been accepted in a master's or doctoral program in the School of Behavioral Health.
2. Be in good behavioral and academic standing (G.P.A. of 3.0 or higher) in their degree program.
3. Submit an abbreviated application—including a personal statement regarding their interest in play therapy, application fee, and two letters

(one from a faculty member and one from their program director or department chair approving their concurrent enrollment in the Play Therapy Program certificate curriculum).

Applicants who are not concurrently enrolled in a degree program in the School of Behavioral Health must meet Loma Linda University (p. 24) and the School of Behavioral Health (p. 156) admission requirements as follows:

1. Have a licensable graduate degree from an accredited university or college. (Official transcripts are evidence of degrees and courses completed.)
2. Submit 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 3.0 or above (on a 4.0 scale).
4. If already licensed as a mental health professional, must provide evidence of good standing with the relevant licensing board.
5. Show evidence of personal qualifications and motivation to complete the Play Therapy Program certificate through:
   - Submission of a completed application (as outlined above).
   - Completion of an admissions interview with the Play Therapy Program admissions committee that evaluates applicants' compatibility with the values of the University and the School of Behavioral Health (including verbal communication skills; critical thinking ability; appreciation of human diversity; evidence of practice maturity, reflective learning, professional comportment, and values congruent with behavioral health professions in the delivery of services).

Program requirements

Required foundation courses		
PLTH 513	Introduction to Play Therapy	3
PLTH 515	Play Therapy III: Assessment and Diagnosis	2
PLTH 516	Child-Centered Play Therapy	3
or MFAM 516	Play Therapy	
PLTH 517	Sandplay: A Therapeutic Process	3
REL_ 5__ [1]		3
Required advanced courses		
PLTH 547	Play Therapy Approaches for Treating Developmental and Behavioral Disorders	2
or PLTH 548	Child Psychosocial Play Therapy	
PLTH 546	Child-Parent Relationship Therapy-CPRT (Filial Therapy)	3
PLTH 549	Therapeutic Play for Children Affected by Illness and Injury	3
PLTH 550	Trauma Focused Play Therapy	3
PLTH 650	Play Therapy with Adolescents and Adults	3
PLTH 700	Practicum in Play Therapy	2
Total Units		**30**

[1] Students concurrently enrolled in a degree program in the School of Behavioral Health may apply 3 units of religion taken at Loma Linda University toward the religion requirement in the Play Therapy Program.
Students who are not concurrently enrolled in another degree program are required to take 3 units of religion. Students select the religion course to be taken in consultation with their advisor.

Normal time to complete the program

7 academic quarters based on less than half-time enrollment

Social Policy and Social Research — Ph.D.

Program director
Larry Ortiz

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.

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.

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 Degrees Programs section of the CATALOG or contact the Department of Social Work and Social Ecology directly.

Admissions

In addition Loma Linda University (p. 24) admission requirements, admission to the program is governed by the policies and procedures established by the School of Behavioral Health (p. 156). 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. Three letters of recommendation (including one from an academic source and one from a work supervisor.)

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 ranges from three-to-four students, depending on the total number of students completing the program and the program's ability to support potential candidates in their area of interest.

Program requirements

Social science theory and policy		
SPOL 600	Colloquium	0
SPOL 613	Social Science Concepts I	4
SPOL 614	Social Science Concepts II	4
SPOL 615	Economic Theory and Social Policy	4
SPOL 656	Organizational Theory and Policy	4
SPOL 658	Methods of Policy Analysis and Research	4
Religion		
RELE 588	Explorers of the Moral Life (Required of all Ph.D. degree students)	4
RELR 525	Health Care and the Dynamics of Christian Leadership	3
RELT 557	Theology of Human Suffering	4
Research methods, statistics, and information technology		
SPOL 654	Research Methods I	4
SPOL 655	Research Methods II	4
SPOL 665	Information Technologies and Decision Science	4
Choose one statistical sequence in consultation with advisor:		12
Sequence 1:		
PSYC 501	Advanced Statistics I	
PSYC 502	Advanced Statistics II	
PSYC 503	Advanced Multivariate Statistics	
Sequence 2		
MFTH 601	Statistics I	
MFTH 602	Statistics II	
MFTH 603	Statistics III	
STAT __	Advanced Course in statistics or methods	4
Applied/structured research and specialized electives		22
Applied/Structered research (6 - 10)		
SPOL 671	Applied/Structured Research I	
SPOL 672	Applied/Structured Research II	
SPOL 673	Applied/Structured Research III	
Electives (10 - 16)		
Dissertation research		
SPOL 681	Dissertation Proposal I	2
SPOL 682	Dissertation Proposal II	2
SPOL 683	Dissertation Proposal III	2
SPOL 697	Research	18
Total Units		**105**

Noncourse requirements

Comprehensive examination

Students must pass a comprehensive examination. The comprehensive examination is administered at the completion of the core curriculum (typically during the Autumn 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 director.

Normal time to complete the program

5 years based on full-time enrollment; part time permitted

Social Work — M.S.W.

Program director
Kimberly Freeman

The profession of social work centers on 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 Behavioral Health 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 polices 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.

Liberal arts preparation

Students in the M.S.W degree program are required to have a broad liberal arts preparation. A balance of course work in three liberal arts areas is reviewed as part of the admissions process.

- Humanities (e.g., history, philosophy, literature, art, music, etc.) 20-24 units
- English and Communication Skills (e.g., oral and written communication media, etc.) 9-13 units
- Natural and Social Sciences (e.g. mathematics, human biology, physiology, psychology, sociology, anthropology, human development, ethnic studies, economics, political sciences or government, etc.) 24-32 units.

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 admission to the M.S.W degree program.

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: human behavior in a cross-cultural environment, social welfare policy and services, practice theory and skills, social research, global social work practice, and field practicum.

These 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. degree 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. Upon approval, eligible B.S.W. degree students may transfer up to 31 quarter units for specified courses. Students receiving practicum advanced standing waive the first-year practicum experience and complete a four-quarter second-year/advanced practicum. As part of this process, advanced standing students are also required to participate in an integrated seminar for the purpose of bridging their B.S.W. degree and M.S.W. degree learning experiences.

Advanced standing for B.S.W. degree students recognizes 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 preapproval 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. 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 Professional Foundation Practicum and Seminar, SOWK 757B Professional Foundation Practicum and Seminar,SOWK 757C Professional Foundation Practicum and Seminar (480 hours of practicum and 60 hours of seminar or 9 professional practica units) 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 Advanced Professional Practicum and Seminar, SOWK 787B Advanced Professional Practicum and Seminar, SOWK 787C Advanced Professional Practicum and Seminar (600 hours of practicum and 60 hours of seminar or 12 professional practica units) 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.
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 Advanced Professional Practicum and Seminar, SOWK 787B Advanced Professional Practicum and Seminar, SOWK 787C Advanced Professional Practicum and Seminar. 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.

Accreditation

The Master of Social Work program is fully accredited by the Council of Social Work Education to provide master's degree-level education, with the next reaffirmation to be completed in 2017.

Admissions

In addition Loma Linda University (p. 24) admission requirements, admission to the Social Work Program is governed by the policies and procedures established by the School of Behavioral Health (p. 156). Admission requirements include:

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 Liberal Arts Preparation).
- Applicants must submit 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 should have a cumulative grade point average of 3.0 or above (on a 4.0 scale). Applicants with lower grade point averages will be considered if the last 45 quarter credits (30 semester units) of course work shows significant improvement or if they have additional attributes that demonstrate preparedness and an appropriate fit for graduate social work education. 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 degree program.

Program requirements

The M.S.W. degree consists of 78 units of didactic course work and 21 units of professional practica experience. 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.

Required cognates		
BHCJ 515	Researching and Writing Graduate Level Papers	2
RELE 522	Bioethical Issues in Social Work	3
or RELE 524	Bioethics and Society	
Professional foundation courses		
SOWK 513	Human Behavior and Cross-Cultural Environment	5
SOWK 514	Social Welfare Policies and Services	5
SOWK 517	Foundation Practice I: Individuals	3
SOWK 518	Foundation Practice II: Groups	3
SOWK 519	Foundation Practice III: Organizations and Communities	3
SOWK 520	Foundation Practice IV: Families [1]	3
SOWK 548	Research Methods	5
SOWK 682	Legal and Ethical Aspects in Health and Mental Health Services	3
SOWK 578	Field Orientation [1]	0
SOWK 757A	Professional Foundation Practicum and Seminar [2,5]	3
SOWK 757B	Professional Foundation Practicum and Seminar [2,5]	3
SOWK 757C	Professional Foundation Practicum and Seminar [2,5]	3
Conjoining curriculum and processes		
Required of all students:		
SOWK 521	Global Practice I: International Social Work	4
SOWK 613	Psychopathology, Psychopharmacology, and Diagnosis of Behavioral Health Conditions	4
SOWK 671	Foundation Practice V: Social Work Administration	3
Advanced curriculum nucleus		
SOWK 680	Global Practice II: Children and Family Policies and Services	2
SOWK 681	Global Practice III: Behavioral Health Policies and Services	2
SOWK 695A	Advanced Research Methods [3]	2
SOWK 695B	Advanced Research Methods [3]	2
SOWK 695C	Advanced Research Methods [3]	2
SOWK 787A	Advanced Professional Practicum and Seminar [4,5]	4
SOWK 787B	Advanced Professional Practicum and Seminar [4,5]	4
SOWK 787C	Advanced Professional Practicum and Seminar [4,5]	4
Advanced curriculum concentrations		
Take courses in one of the following two concentrations:		15
Clinical practice		
SOWK 648	Co-occurring Processes and Interventions	
SOWK 661	Psychodynamic Therapies	
SOWK 661L	Psychodynamic Practice Lab	
SOWK 662	Behavioral and Cognitive Therapies	
SOWK 662L	Behavioral and Cognitive Therapies Practice	
SOWK 663	Crisis and Trauma Interventions	
Policy, planning, and administration		

SOWK 672	Theories of Organizations and Systems	
SOWK 673	Program Planning and Implementation	
SOWK 676	Human Resources Planning and Development	
SOWK 683	Advanced Policy Analysis	
Culminating curriculum and processes		
SOWK 675	Supervision	3
General selectives		
Select 4 units from one of the following lists: [6]		4
Population groups		
GERO 515	Diversity and Aging	
GERO 654A	Therapeutic Interventions with Older Adults I	
GERO 654B	Therapeutic Interventions with Older Adults II	
MFAM 516	Play Therapy	
MFAM 545	Gender Perspectives	
MFAM 638	Family Therapy and Chemical Abuse	
MFAM 644	Child Abuse and Family Violence	
PLTH 650	Play Therapy with Adolescents and Adults	
PSYC 686	Child, Partner, and Elder Abuse	
SOWK 651	Medical Social Work	
SOWK 653	Child Welfare Practice	
SOWK 658	Children's Psychotherapy	
Problem areas		
CRMJ 518	Legal Discourse	
CRMJ 519	Expert Testimony: Procedure and Practice	
CRMJ 520	Restorative Justice	
MFAM 516	Play Therapy	
MFAM 665	Structural and Multidimensional Family Therapy	
PSYC 685	Drug Addiction and Therapy	
SOWK 659	Recovery in Behavioral Health	
SOWK 677	Advanced Integrative Seminar in Psychotherapy	
SOWK 684	Advanced Policy Projects	
Total Units		**78**

1 Not eligible for waiver.

2 Hours: 160 + 20; Not eligible for waiver

3 Thesis option is available for students meeting program criteria.

4 Hours: 200 + 20

5 700-numbered courses are not calculated into the total didactic units required for the degree.

6 Students wishing to take courses that are not included in this list of approved selectives must obtain an academic variance through the department's Academic Standards Committee prior to enrolling in the course.

Normal time to complete the program

2 years (6 academic quarters) based on full-time enrollment; part time permitted

School of Dentistry

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 an evidence-based education that incorporates the most advanced electronic education resources available. We continue to increase the hands-on experience our students receive related to technology during their basic science preclinical dental education. With our new Innovation Center, students now have the opportunity to gain experience with the most contemporary equipment and techniques that enhance the practice of dentistry and the care we provide our patients. You will also 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.

Ronald J. Dailey, Ph.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 internationally 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-four-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.

Beginning with the nineteen-year deanship of Dr. Charles Goodacre in 1994, the School of Dentistry focused particularly on research, service learning, and technology that included the development of electronic learning materials and the acquisition and utilization of 3D computed tomography (3DCT) and computer-aided manufacture (CAD/CAM) technology.

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 faculty presentations and the clinical management system.

The Department of Dental Hygiene added two programs to meet changing professional needs. In 2008, the B.S. Online Degree Completion Program accepted the first cohort, allowing licensed hygienists to complete a B.S. degree online in six quarters.

In the autumn of 2010, the LLU Center for Dentistry and Orthodontics was opened in San Bernardino, three miles from the school. The three-story treatment, research, and teaching facility brought together the University's Advanced Education Program in orthodontics and dentofacial orthopedics and the School of Dentistry's faculty practices—creating the most comprehensive oral health care center in the Inland Empire.

In September 2011, the Department of Dental Hygiene accepted the inaugural class at the off-campus Associate in Science degree program in Palm Desert, California.

A year later (August 2012), another opening featured the school's groundbreaking Hugh Love Center for Research and Education in Technology. Comprising six operatories and a three-chair open clinic, the 3,000-square-foot center enables qualified students, under faculty supervision, the opportunity to treat patients using the very latest in dental technology.

Dr. Ronald J. Dailey was named School of Dentistry dean in July of 2013. Having led the school through all of its academic challenges as an associate dean since 1993, Dr. Dailey is well prepared to pilot the

school's programs through revisions that accommodate new accreditation standards; as well as the Joint Commission on National Dental Board Examination's integration of basic, clinical, and behavioral sciences into a single national board examination.

The School of Dentistry continues to regularly expand the opportunities for enhanced student learning by improving physical facilities; making regular curricular modifications; and reinforcing the excellence of its clinical practices in light of its motto, "Service Is Our Calling."

Our mission

Loma Linda University School of Dentistry seeks to further the healing and teaching ministry of Jesus Christ as:

- 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 to 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

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 six 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. The DENTAL HYGIENE ASSOCIATE IN SCIENCE degree is a three-year college curriculum in which the first year prerequisites are taken at a regionally accredited college, and the remaining two years 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 two-academic-year curriculum, leads to a Doctor of Dental Surgery degree from Loma Linda University. The program is designed for the dentist who has earned a dental degree outside the United States.
4. The POSTBACCALAUREATE BIOMEDICAL SCIENCE DENTAL TRACK program is designed for students who are unsuccessful in their application to the Doctor of Dental Surgery program at Loma Linda University. The students in this program participate in some first-year dental courses. Successful completion of this program leads to a postbaccalaureate certificate in biomedical science.
5. 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 a Master of Science or a Master of Science in Dentistry degree.
6. The COMBINED DEGREES programs lead 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.; or to the Doctor of Dental Surgery degree (through the School of Dentistry) earned concurrently with a Master of Arts degree in Bioethics (through the School of Religion)—D.D.S./M.A.

Combined degrees programs

D.D.S. / M.S. / M.A.

A combined degrees program leading to the Doctor of Dental Surgery and the Master of Science degree 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 leading to the Doctor of Dental Surgery and the Master of Arts in bioethics 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.

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 General Dentistry
Academy of Osseointegration
Academy of Operative Dentistry
Alpha Omega Certificate of Academic Achievement
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 Orthodontists
American College of Dentists, Southern California Section
American College of Prosthodontists
American Dental Association Foundation Scholarship
American Dental Society of Anesthesiology
American Student Dental Association
Ben W. Oesterling Award
Christ-like Service Award
California Association of Oral and Maxillofacial Surgeons
California Dental Association—Senior Award
Clinical Group Awards
Clinical Overall Award
David Lee Anderson Departmental Award
David Lee Anderson Tuition Scholarship
Delta Dental Student Leadership
Dental Trade Alliance Foundation Scholarship
Dentsply Student Clinician
Fixed Prosthodontics Department
G. Hartzell & Son Clinician
Graduate Implant Dentistry
ICOI/Dentsply Predoctoral Student Achievement
International College of Dentists
Kenneth E. Wical Award
LLU Center for Dental Research Basic Science Award
LLU Excellence in Prosthodontics
OKU William S. Kramer
Oral and Maxillofacial Surgery Department Award
Pacific Dental Services Scholarship
Pierre Fauchard Academy
Pierre Fauchard Academy Scholarship
Restorative Aesthetic Dentistry Award
Service-Learning Award
Southern California Academy of Endodontics
Southern California Academy of Oral Pathology
Southern California Society of Dentistry for Children
Terry Tanaka Award
Wil Alexander Award
Wilfred A. Nation Award

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.

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 twenty (20) percent of the class qualify for consideration. A maximum of twelve (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 ten percent of the class, chosen from the top twenty (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.

Student life

School of Dentistry technical standards

In harmony with its own didactic, clinical, research, and service objectives, and using the American Dental Education Association suggested guidelines, Loma Linda University School of Dentistry has identified the following technical standards for entry into all its programs.

Cognition

Students must have the cognitive abilities that allow the accurate and effective ability to measure, verify, calculate, reason, analyze, synthesize, and critically problem solve. Effective dental education requires the capacity to gather, organize, and assess relevant information in order to arrive at integrated solutions. Students must be able to comprehend three-dimensional relationships and understand the spatial relationships of structures in order to fully solve clinical problems.

Sensory and perceptual abilities

For learning to occur, students must be able to visualize and comprehend physical demonstrations in the classroom, laboratory, and clinic. Such observation requires the functional use of vision, touch, hearing, smell, and somatic sensation.

Specifically, students must be able to acquire information from written documents and to visualize information presented in images from papers, videos, and digital media—including interpretation of radiographic and other graphic images, with or without the use of assistive devices. Sufficient visual acuity is required to read charts, records, small print, and handwritten notations.

Adequate visual and tactile skills are also necessary to perform dental examinations and provide treatment. Visual acuity, accommodation, and color vision are necessary to discern variations in color, shape, and general appearance between normal and abnormal hard and soft tissues.

Students must be able to observe and describe changes in mood, activity, and posture in their patients, possessing skills in effective perception and understanding of nonverbal communications. Accurately noting verbal and nonverbal communication is essential when performing dental operations or administering medications.

Communication abilities

Students must be fluent in the use of standard written and spoken English. They must be able to communicate effectively and sensitively with patients, faculty, staff, and other students. Specifically, students must be able to observe, hear, and speak to patients in order to elicit and provide information. In addition, they must have the ability to read and understand written communications and generate effective oral and written communications with all members of the health-care team. This includes the ability to discern when a matter is of a confidential nature in order to maintain confidentiality. Students may be required to remediate

written and/or verbal language skills before admission or during their program. This remediation may include accent modification.

Fine and gross motor skills

Students need sufficient motor and sensory capability in both hands to provide general dental care to perform palpation, percussion, auscultation and other diagnostic maneuvers; basic laboratory tests; and diagnostic procedures. These actions require fine and gross muscular movements, coordination, and equilibrium. Individuals must be able to operate foot controls utilizing fine movements, operating high- or low-speed dental instruments to achieve accurate movements of less than one-half millimeter.

Students must be able to perform basic life support (e.g., CPR), transfer and position disabled patients, physically restrain patients who lack motor control, and position themselves around the patient and dental chair.

Behavioral and psychosocial abilities

Students must possess the emotional stability and demonstrate the resilience required by a challenging educational program. Success requires use of good judgment, insight, self-motivation, self-assessment and self-control, high achievement striving, and the development of a mature, sensitive, and effective personal relationship style.

It is 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, demonstrate flexibility, and learn to function in the face of uncertainties inherent in the clinical issues of many patients. Compassion, integrity, honesty, concern for others, and cultural sensitivity are required personal qualities.

Disabled applicants and students

LLU School of Dentistry provides reasonable and appropriate accommodations in accordance with the Americans with Disabilities Act for individuals with documented disabilities who demonstrate a need for accommodation.

The Americans with Disabilities Act defines a person with a disability as an individual with a physical or mental impairment that substantially limits one or more major life activities. Problems such as English as a second language, test anxiety, or slow reading without an identified underlying physical or mental deficit, or failure to achieve a desired outcome are generally not covered by the Americans with Disabilities Act.

To be considered for an accommodation based on a learning disability, a student must experience marked difficulty when compared with the average person in the general population, not just other dental school students, in one or more basic academic areas as a result of a significant information processing or attentional disorder.

Students requesting accommodations must provide supporting documentation for the disability requiring accommodation, including:

- A report from a licensed professional approved by Loma Linda University School of Dentistry identifying the diagnosed disability and the recommended accommodations.
- Record of any previous accommodations provided by educational institutions or other testing agencies.
- If no prior accommodations were provided, the licensed professional should include a detailed explanation as to why no accommodations were given in the past and why they are needed now.

Documentation needs to be reviewed by the associate dean for student affairs, before accommodation is formally implemented. While awaiting assessment and documentation, temporary accommodation may be granted. The temporary accommodation will not exceed ninety (90) days.

Students requesting accommodation are responsible for:

- Reporting their request for accommodation to the Office for Student Affairs
- Providing the supporting documentation
- Informing relevant course directors and instructors at the beginning of each term

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* at <http://www.llu.edu/assets/central/handbook/documents/Student-Handbook.pdf>.

Professional ethics

Successful students should demonstrate behaviors and attributes in harmony with School of Dentistry's core values. The school seeks students who openly and enthusiastically align themselves with the following core values:

- Belief in God
- Spiritual maturity
- Care and compassion
- Service to others
- Commitment to excellence
- Critical thinking
- Respect for self and others
- Ethical integrity
- Principled care
- Pursuit of knowledge
- Conscientiousness and 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 if dentistry is to continue to maintain its position of trust in society. The establishment of peer review committees, ethics committees, codes of ethics, and other regulatory and/or advisory processes and standards within the profession indicate a vital and continuing concern for maintaining high standards of integrity.

The School of Dentistry is a partner in this process where future professionals are selected and trained in the development of professional and ethical attitudes consistent with the highest goals of the profession.

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 not only will reflect concern for his or her fellows, but also will reflect an intimate relationship with the Creator God.

The code contains specific admonitions that are limited in number but comprehensive in nature. It is anticipated that the values of honesty, integrity, and altruism will be enhanced during professional training so that, following graduation, these virtues will be second nature in the 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 dental professionals to become competent in all aspects of patient care.

The School of Dentistry code of ethics applies to all students (associate and baccalaureate dental hygiene; predoctoral, including international dentist students; 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 Section VII of the LLU *Student Handbook*.

Student leadership

Professional organizations

Students are invited to represent the school in the relevant professional organizations. The Office of Student Affairs facilitates the process of electing 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)

Dental Student Association

All predoctoral dental and dental hygiene students automatically become members of the Dental Student Association (DSA) at matriculation.

While class leadership serves to represent its members on various School committees and meeting, the DSA serves the student body as a whole for the purpose of fostering service-learning activities, and encourage recreational and social experiences, often in conjunction with University Student Affairs.

Class leadership

Class leaders are elected annually during the Autumn term for the first year and Summer terms thereafter. Class colleagues elect leaders by 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.

Committee representation

Students are invited to serve on school standing committees. The Office for Student Affairs consults with class leadership to select students to serve on committees—including the Admissions Committees, Academic Review Committees, Curriculum Committee, and Professional Standards Committee. The selection process takes place during the Summer term.

For professional organizations and class 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.

Special opportunities

Alumni-Student Convention

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.

Research presentation

Students have the opportunity to give research presentations in the form of table clinics. The winners are invited to present their table clinics at state and national conventions.

Dedication service

A dedication service is held during the Alumni-Student Convention, giving students an opportunity to dedicate their professional lives to Christ. Incoming students are presented with personalized Bibles and graduating students are given personalized white coats embroidered with the School logo.

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 is completed online at the myLLU registration portal <https://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 year 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 as required by law.

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. 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 associate dean for academic affairs.

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 junior year for the Associate in Science degree; and 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 review period. The eligibility requirements are:

- Complete at least 12 units of graded course work during the term.
- Achieve a term grade point average of at least 3.5 with no grade lower than a B-.
- Receive no incomplete (I) 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 associate dean for academic affairs. 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

Predoctoral

Level D1 to Level D2

- Cumulative didactic and preclinical laboratory G.P.A. at or above 2.0.
- 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 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 IDP3 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

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 an Associate in Science degree or certificate 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 Board Examinations

Successful completion of the National Board Dental Examination, Parts I and II (NBDE-I and NBDE-II) is a requirement for graduation. The National Board Dental Examinations are designed to assess cognitive knowledge of the basic, behavioral, and clinical sciences. Eligibility to sit for either part of the National Board Dental 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 Dental Examination. The eligibility requirements and timetable for passing the National Board Dental Examination are as follows:

Part I

First attempt

Part I examination is 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 re-examination no later than December.

Second attempt

If a student does not successfully complete the second attempt of the Part I examination, s/he will be required to take a six-month leave of absence to prepare for re-examination prior to the succeeding year.

Third attempt

If the student successfully completes the Part I examination, s/he will continue to work on the clinic for the initial half of the year and will begin didactic courses again during the later part with the current third-year students. If the student does not successfully complete the National Board Dental Examination, Part I on the third attempt, s/he will be discontinued from the program.

Part II

First attempt

Part II examination is scheduled in 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. National Board Dental Examination policy requires subsequent attempts to be at least ninety (90) 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 Dental 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 associate dean for academic affairs, 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, the clinic director, 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 associate dean for student affairs and DSA officers. Student committee members will be in the class one year ahead of the class being reviewed.

The academic review committees meet a minimum of two times annually 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 academic sanctions 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 recommendation 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 recommendation. 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. 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 year.
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 year.
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.

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 that 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 reviews or terms on academic probation.

- Student has not passed the National Board Dental Examination on schedule after two attempts and needs full study time to prepare for the National Board Dental 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 associate dean for academic affairs. 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 reviews or terms 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 Dental Examination within three attempts.
- Failure to achieve eligibility for graduation within five full academic years of enrollment in the dental program. *Exception: 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 A.S. degree sophomores or B.S. degree 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 dental hygiene A.S. junior or dental hygiene B.S. senior year by the end of the dental hygiene A.S. sophomore or dental hygiene B.S. junior year.

Dental hygiene A.S. degree juniors or B.S. degree 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 Dental Hygiene 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.

Scholastic standing

Grades and grade points for the predoctoral, IDP, and dental hygiene programs may be found in Section II of this catalog, with the following exceptions:

- Satisfactory (S)—grade if the student exceeded the minimum requirements for overall performance.
- Marginal Satisfactory (MS)—grade if the student met but did not exceed the minimum requirements for overall performance.
- Unsatisfactory (U)—grade if the student did not meet the minimum requirements for overall performance.

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 associate dean for academic affairs (for further discussion of the academic grievance process, see Loma Linda University *Student Handbook*, Section V—University Policies).

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 thirty of the remaining eighty hours may be completed doing nondental service. Dental hygiene students must complete seventy-five service-learning hours. Thirty-five hours of local service are required, and up to fifteen nondental service hours may be credited. International Dentist Program students must complete sixty hours of service. Of the sixty hours, forty will be assigned by the program. Up to ten hours of nondental service may be completed as part of the sixty 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 be 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 predoctoral, IDP, and dental hygiene programs must maintain a minimum cumulative grade point average of 2.0. In addition, dental hygiene students must achieve no grade lower than a C- in all core courses.

Yearly progress requirement

Each student's academic progress is evaluated by the Academic Review Committee throughout 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 Office of Financial Aid, along with the School of Dentistry Office of Student Affairs, 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 term of registration. If their academic standing or degree progress is not raised to

the standard by the end of the term in which the financial aid warning was issued, their financial aid will be terminated 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. The Doctor of Dental Surgery degree is scheduled to be completed in four years and may not exceed six. The Bachelor of Science degree in dental hygiene is scheduled to be completed in two years 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. The Associate in Science degree in dental hygiene is scheduled to be completed in seven quarters and may not exceed 14 quarters.

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 the Office of 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 <finaid@llu.edu> or 909/558-4509.

Schedule of charges (2014-2015)

Dentistry

All tuition, enrollment fees and technology fees are set for one academic year.

	1st Year	2nd Year	3rd Year	4th Year
Tuition	$59,208	$71,724	$71,724	$71,724
Enrollment Fees				
University	$2,250	$3,000	$3,000	$3,000
SD	$105	$140	$140	$140
Technology fees (Computer set-up, technical support)	$1,585	$780	$780	$780
The following are estimates based on the information available at this time and are subject to change.				
Instrument issue (Includes usage fees)	$6,894	$6,284	$422	$96
Computer (Budget revised at purchase with financial aid)	$2,200	$0	$0	$0
CPR (Mandatory on-campus training)	$40	$0	$0	$0
Optics (Loupes and light)	$1,750	$0	$0	$0
Clinic camera (Budget revised at purchase with financial aid)	$2,200	$0	$0	$0
Isolite system	$0	$0	$1,500	$0
Laboratory fees	$144	$148	$128	$44
Dental supplies (Billed with usage)	$90	$510	$420	$550
Departmental fees (Includes course materials; dental laboratory gold)	$310	$1,575	$600	$385
Books	$900	$1,460	$700	$0
ASDA/CDA required fees (Not covered with financial aid)	$80	$80	$80	$80
National Board Examinations	$0	$300	$0	$360
Estimated living expenses (For off-campus student, not living with relative)	$15,500	$18,600	$18,600	$18,600
Total	$93,256	$104,601	$98,094	$95,759

International Dentist Program

All tuition, enrollment fees and technology fees are set fees for one academic year.

	IDP 3rd Year	IDP 4th Year
Tuition	$94,328	$94,328
Enrollment fees		
University	$3,000	$3,000
SD	$140	$140
Technology fees (Computer set-up, technical support)	$1,780	$780
The following are estimate based on the information available at this time and are subject to change.		
Instrument issue (Includes usage fees)	$9,024	$0

Computer (Budget revised at purchase with financial aid)	$2,200	$0
CPR (Mandatory on-campus training)	$40	$0
Optics (Loupes and light)	$1,750	$0
Clinic camera (Budget revised at purchase with financial aid)	$2,200	$0
Isolite system	$1,500	$0
Laboratory fees	$160	$160
Dental supplies (Billed with usage)	$110	$312
Endodontics	$335	$0
Orthodontics	$40	$0
Books	$565	$0
ASDA/CDA (Not covered with financial aid)	$80	$80
Estimated living expenses (For off-campus student, not living with relative)	$18,600	$18,600
Total	$135,852	$117,400

Dental Hygiene—B.S. (Entry Level)

All tuition, enrollment fees and technology fees are set for one academic year and are divided equally per term.

	Junior	Senior
Tuition	$31,476	$41,968
Enrollment fees		
University	$2,250	$3,000
SD	$51	$68
Technology fees (Computer set-up, technical support)	$1,585	$780
The following are estimates based on the information available at this time and are subject to change.		
Instrument issue (Includes usage fee)	$6,079	$88
Computer (Budget revised at purchase with financial aid)	$2,200	$0
CPR (Mandatory on-campus training)	$40	$0
Optics (Loupes)	$1,200	$0
Laboratory fees	$60	$0
Supplies (Billed with usage)	$55	$125
Books	$880	$705
SADHA dues	$90	$90
National Board Review Course (Budgeted for students to purchase their choice)	$0	$360
National Board Examination	$0	$360
Extramural	$0	$960
Estimated living expenses (For off-campus student, not living with relative)	$13,680	$18,240
Total	$59,646	$66,744

Dental Hygiene—A.S.

All tuition, enrollment fees and technology fees are set for one academic year and are divided equally per term.

	Sophomore	Junior
Tuition	$19,371	$25,828
Enrollment fees		
University	$2,250	$3,000
SD	$51	$68
Technology fees (Computer set-up, technical support)	$1,585	$780
The following are estimates based on the information available at this time and are subject to change.		
Instrument issue (Includes usage fee)	$6,079	$88
Computer (Budget revised at purchase with financial aid)	$2,200	$0
CPR (Mandatory on-campus training)	$40	$0
Optics (Loupes)	$1,200	$0

Laboratory fees	$60	$0
Supplies (Billed with usage)	$55	$125
Books	$880	$705
SADHA dues	$90	$90
National Board Review Course (Budgeted for students to purchase their choice)	$0	$360
National Board Examination	$0	$390
Extramural	$240	$240
Estimated living expenses (For off-campus student, not living with relative)	$13,680	$18,240
Total	$47,781	$49,914

Dental Hygiene—B.S. Completion Program

Tuition

$614 per unit

On- and off-campus student housing

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

Programs

Undergraduate

- Dental Hygiene — A.S. and B.S. (Entry Level) (p. 230), B.S. (completion) (p. 235)

Professional

- Dentistry — D.D.S. (p. 238)
- International Dentist Program (IDP) — D.D.S. (p. 251)
- Biomedical Sciences — Certificate (p. 238)

Advanced Education

- Dental Anesthesiology — post-D.D.S. Certificate, M.S.D. (p. 261)
- Endodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 262)
- Implant Dentistry — post-D.D.S. Certificate, M.S.D., M.S. (p. 264)
- Oral and Maxillofacial Surgery — post-D.D.S. Certificate, M.S.D., M.S. (p. 266)
- Orthodontics and Dentofacial Orthopedics — post-D.D.S. Certificate, M.S. (p. 267)
- Pediatric Dentistry — post-D.D.S. Certificate, M.S.D., M.S. (p. 269)
- Periodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 270)
- Prosthodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 271)

Undergraduate

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 A.S. and B.S. degree curricula are approved by Loma Linda University Board of Trustees, Western Association of Schools and Colleges, and the Commission on Dental Accreditation of the American Dental Association. The B.S. online completion program is approved by Loma Linda University Board of Trustees and Western Association of Schools and Colleges.

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.

Chair

Kristi J. Wilkins

Primary faculty

Darlene A. Armstrong

D. Darlene Cheek

Janeen C. Duff

Debra K. Friesen

Shelley L. Hayton

Marilynn G. Heyde

Michelle T. Hurlbutt

Shirley A. Lee

Patricia M. Lennan

Dyonne R. Strilaeff

Colleen A. Whitt

Kristi J. Wilkins

Shelly Withers

Debra A. Zawistowski

Emeritus faculty

Joni A. Stephens

Application procedures

The Dental Hygiene Program is an undergraduate curriculum 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, in the sophomore year for the Associate in Science degree, and in the senior year for the Bachelor of Science completion program.

The application is available at <http://www.adea.org/>. Applications, a nonrefundable supplemental application fee of $100, and all other required documentation must be submitted between August and February 1 for the Bachelor of Science degree. The Bachelor of Science Degree Completion Program requires that applications and all other required documentation be submitted between August and June 16. The Associate in Science degree dental hygiene program requires applications and all other required documentation be submitted between August and June 16.

Application procedure

1. *DHCAS application*. The DHCAS application is completed online by the applicant at adea.org. The Office of Admissions receives applications from DHCAS four weeks after they are submitted.
2. *Supplemental application*. The applicant then receives an email invitation from LLU to complete an electronic supplemental application.
3. *Supplemental application deadline*. The applicant must return the completed supplemental application and materials within thirty (30) days. This includes an essay specific to Loma Linda University, a photograph, and the nonrefundable application fee of $100.
4. *Transcripts*. Official transcripts must be sent to DHCAS. When an applicant becomes an accepted student, official transcripts—mailed directly from all high schools/colleges/universities to LLU—are required in order for the student to be registered for the first quarter of classes. International students must submit official transcripts at time of supplemental application.
5. *References.* The applicant is asked to supply a minimum of three personal references. These must include an academic reference from a science instructor; a reference from an employer; a character or religious reference; such as, from a minister. 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 DHCAS.
6. *Interview*. The applicant's records will be screened when the supplemental application, recommendation, 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 dental hygiene. At the time of the interview, a tour of the school will be given by a current student.
7. *Observation*. It is important that students seek experience observing and assisting in a dental office in order to become familiar with the work of a dental hygienist. Prior to interviewing, applicants are expected to complete a minimum of twenty (20) hours of observation/work experience in a dental facility.
8. *Acceptance*. The accepted student receives an acceptance letter. Upon payment of the deposit, accepted students receive an email that serves as a receipt, as well as information about how to access registration information.

Pre-entrance requirements:

1. *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 registration information made available electronically to the student by LLU. In order to avoid having a hold placed on registration, the student is encouraged to return the documentation forms to Student Health Service no later than six weeks prior to the beginning of classes.
   For a complete list of required immunizations and tests, see Section II of this CATALOG under the heading "Health Care." Documentation verifying compliance with this requirement must be provided before registration can be completed.

For further information, consult the *Student Handbook*, Section V—University Policies—Communicable disease transmission prevention policy; or contact the Student Health Service office at 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.

2. *Deposits*. The student accepted into one of the dental hygiene programs must submit a nonrefundable deposit. All deposits become part of the first quarter tuition. Failure to submit this deposit will result in loss of the applicant's position in the class. The remaining balance of the first quarter tuition and fees are 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.
3. *Financial requirement*. Non-U.S. citizens and non-permanent residents are required by U.S. Immigration regulation to pay for their first year of tuition and fees before they can register for Autumn term. In addition, they must provide documentary evidence of sufficient funds for their second year. International students will receive the necessary via applications and registration information after they have submitted their deposit and payment plan.
4. *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>.

General regulations

The student is also subject to School of Dentistry academic information (p. 220), technical standards (p. 218), financial policy (p. 225), and University academic policies (p. 36) outlined in 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.

Programs

Dental Hygiene — A.S., B.S. (Entry Level) (p. 230)

Dental Hygiene — B.S. (completion) (p. 235) (Comparison (p. 237))

Dental Hygiene — A.S., B.S. (Entry Level)

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.

Institutional learning outcomes

Students who graduate with the Associate in Science or the Bachelor of Science degree in dental hygiene will meet the University outcomes (p. 19).

Dental hygiene's 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.

Accreditation

The A.S. and B.S. degree curricula are accredited by the Commission on Dental Accreditation of the American Dental Association. 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; website: <http://www.wascweb.org> or <wascsr@wascsr.org>

Programs

- Dental Hygiene — A.S. (entry-level) (p. 231), B.S. (entry-level) (p. 233)

Dental Hygiene — A.S. (Entry Level)

Site coordinator
Janeen C. Duff

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. A.S. degree graduates 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.

Admissions

The Associate in Science degree dental hygiene applicant must meet the following minimum requirements:

- 44 quarter or 32 semester units of transferable college course work.
- A grade point average of 2.5 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 (20) 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. A student may be accepted with a deficiency in one or more of the areas but is expected to eliminate deficits before registering for the Dental Hygiene program.

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. *R*equired 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 (two semesters or two quarters); and a speech/interpersonal communication/persuasion course are required. Introductory courses in computers are 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.

Program requirements

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
Sophomore Year, Autumn Quarter						
ANAT 301	Head and Neck Anatomy, DH	46			46	4.0
DNHY 216	Oral Health and Preventive Dentistry	22			22	2.0
DNHY 305	Oral Anatomy Lecture	21			21	2.0
DNHY 305L	Oral Anatomy Laboratory		30		30	1.0
DNHY 321	Preclinical Dental Hygiene I Lecture	22			22	2.0
DNHY 321L	Preclinical Dental Hygiene I Laboratory		60		60	2.0
Winter Quarter						
ANAT 303	General and Oral Histology and Embryology	42			42	3.0
ANES 314	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	40	16		56	4.0
DNHY 309	Radiology I	22	40		62	3.0
DNHY 322	Preclinical Dental Hygiene II Lecture	22			22	2.0
DNHY 322L	Preclinical Dental Hygiene II Laboratory		60		60	2.0
DNHY 375	Dental Hygiene Clinic			30	30	1.0
RELT 423	Loma Linda Perspectives	20	30		50	2.0-3.0
Spring Quarter						
DNHY 310	Radiology II	22	40		62	3.0
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	22			22	2.0
DNHY 381	Pharmacology for the Dental Hygienist I	22			22	2.0
ODRP 311	General and Oral Pathology DH	50			50	5.0
Summer Quarter						
DNHY 217	Community Oral Health Theory	22			22	2.0
DNHY 303	Dental Materials and Techniques	12	30		42	2.0
DNHY 376	Dental Hygiene Clinic			120	120	4.0
DNHY 380	Medically Compromised Patients	22			22	2.0
DNHY 382	Pharmacology for the Dental Hygienist II	22			22	2.0
DNHY 405	Introduction to Periodontics	22			22	2.0
DNHY 450	Junior Clinical Seminar	22			22	1.0
RELE 457	Christian Ethics and Health Care	20	30		50	2.0-3.0
Junior Year, Autumn Quarter						
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	22			22	1.0
DNHY 475	Dental Hygiene Clinic I			176	176	4.0
Winter Quarter						
DNHY 218	Community Oral Health Practicum			60	60	2.0
DNHY 415	Applied Nutrition	22			22	2.0
DNHY 435	Special Topics in Periodontal Therapy	22			22	2.0
DNHY 452	Clinical Seminar II	22			22	1.0
DNHY 476	Dental Hygiene Clinic II			176	176	4.0
DNHY 495	Dental Hygiene National Board Preparation	22			22	1.0-2.0
Spring Quarter						
DNHY 409	Jurisprudence and Practice Management	22			22	2.0
DNHY 412	Dental Hygiene Topics II	22			22	2.0
DNHY 453	Clinical Seminar III	22			22	1.0
DNHY 477	Dental Hygiene Clinic III			204	204	4.0
Total Units		**790**	**376**	**886**	**2052**	**99-102**

Normal time to complete the program

2 years (7 academic quarters) at LLU — full-time enrollment required

Dental Hygiene — B.S. (Entry Level)

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.

Admissions

The Bachelor of Science degree in dental hygiene applicant must meet the following minimum requirements:

- 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.
- Three personal letters of reference.
- A minimum of twenty (20) hours observation with a dental hygienist. Completion of observation hours prior to an interview is recommended. 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 registering for the Dental Hygiene Program.
- Required science courses must be completed within five years prior to the desired date of matriculation.

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; humanities courses (20-24 quarter units or 14 semester units) selected from a minimum of three content areas—history and/or civilization, fine arts theory, 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. Introductory courses in computers are highly recommended.

Domain IV: 2-6 units

Health and Wellness

A personal health or nutrition course and two physical education activity courses are required.

For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Program requirements

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
Junior Year, Autumn Quarter						
ANAT 301	Head and Neck Anatomy, DH	46			46	4.0
DNES 200	Curricular Practical Training[1]		75		75	0.0
DNES 400	Interprofessional Laboratory Experience[1]		4		4	0.0
DNHY 305	Oral Anatomy Lecture	21			21	2.0
DNHY 305L	Oral Anatomy Laboratory		30		30	1.0
DNHY 309	Radiology I	22	40		62	3.0
DNHY 321	Preclinical Dental Hygiene I Lecture	22			22	2.0
DNHY 321L	Preclinical Dental Hygiene I Laboratory		60		60	2.0
RELT 423	Loma Linda Perspectives	20	30		50	2.0-3.0
Winter Quarter						
ANAT 303	General and Oral Histology and Embryology	42			42	3.0
ANDN 314	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	33	30		63	4.0
DNHY 310	Radiology II	22	40		62	3.0
DNHY 322	Preclinical Dental Hygiene II Lecture	22			22	2.0
DNHY 322L	Preclinical Dental Hygiene II Laboratory		60		60	2.0
DNHY 375	Dental Hygiene Clinic			30	30	1.0
DNHY 380	Medically Compromised Patients	22			22	2.0
DNHY 381	Pharmacology for the Dental Hygienist I	22			22	2.0
Spring Quarter						
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	22			22	2.0
DNHY 382	Pharmacology for the Dental Hygienist II	22			22	2.0
DNHY 405	Introduction to Periodontics	22			22	2.0
DNHY 450	Junior Clinical Seminar	22			22	1.0
ODRP 311	General and Oral Pathology DH	50			50	5.0
RELE 457	Christian Ethics and Health Care	20	30		50	2.0-3.0
Senior Year, Summer Quarter						
DNES 305	Etiology and Management of Dental Caries	22			22	2.0
DNHY 303	Dental Materials and Techniques	12	30		42	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	12			12	1.0
DNHY 416	Dental Health Education I	22			22	2.0
DNHY 421	Research I	22			22	2.0
DNHY 450	Junior Clinical Seminar	22			22	1.0
Senior Year, Autumn Quarter						
DNES 200	Curricular Practical Training[1]		75		75	0.0
DNES 400	Interprofessional Laboratory Experience[1]		4		4	0.0
DNHY 411	Dental Hygiene Topics I	22			22	2.0
DNHY 415	Applied Nutrition	22			22	2.0
DNHY 417	Dental Health Education II	22			22	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	22			22	1.0
DNHY 475	Dental Hygiene Clinic I			176	176	4.0
DNHY 495	Dental Hygiene National Board Preparation	22			22	1.0-2.0
RELR 475	Art of Integrative Care	20	30		50	2.0-3.0
Winter Quarter						

DNHY 408	Professional Ethics	22			22	2.0
DNHY 412	Dental Hygiene Topics II	22			22	2.0
DNHY 431	Public Health Dentistry	33			33	3.0
DNHY 452	Clinical Seminar II	22			22	1.0
DNHY 476	Dental Hygiene Clinic II			176	176	4.0
DNHY 495	Dental Hygiene National Board Preparation	22			22	1.0-2.0
Spring Quarter						
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	22			22	1.0
DNHY 477	Dental Hygiene Clinic III			204	204	4.0
RELR 408	Christian Perspectives on Marriage and the Family	20	30		50	2.0-3.0
Total Units		**1017**	**608**	**826**	**2451**	**117-123**

[1] Course may be taken in the junior or senior year.

Normal time to complete the program

2 years (7 academic quarters) at LLU — full-time enrollment required

NOTE: Consult advisor regarding other courses that may be applied towards graduation.

Dental Hygiene — B.S. (Completion)

Program director
Michelle T. Hurlbutt

The online Dental Hygiene—B.S. (Completion) Program in dental hygiene 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 earn a baccalaureate degree.

The B.S. degree completion curriculum in dental hygiene is designed to be 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, which 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.

- Dental Hygiene—Education Track
- Dental Hygiene—Public Health Track

Program goals

The Loma Linda University B.S. degree completion curriculum in dental hygiene 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.

Student learning outcomes

Students who graduate with a Bachelor of Science degree in dental hygiene will meet the University outcomes (p. 19), as well as the following student learning outcomes (SLOs) for the dental hygiene B.S. degree completion program.

Graduating Dental Hygiene—B.S. (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.

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; website: <http://www.wascweb.org> or <http://www.wascsenior.org/contact>.

Admissions

Application for admission to this online curriculum must be submitted by February 1 for the class beginning the following Autumn 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.
- Current RDH license in any U.S. state.

All applicants must provide the following:

- All college transcripts.
- Applications submitted starting September 15. The application is available at <http://www.adea.org>.
- Three letters of reference, including one from the director of the accredited dental hygiene program from which the applicant graduated.

Program requirements

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.

Education

Core

Minimum grade of C- required on all the following courses including those in the concentration		
DNHY 390	Introductory Statistics	2
DNHY 391	Introduction to Grant Writing	2
DNHY 400	Oral Disease Management	2
DNHY 421	Research I	2
DNHY 422	Research II	2
DNHY 425	Educational Psychology for Health Professionals	3
DNHY 436	Ethical and Legal Principles in Education	2
DNHY 441	Principles of Education I	3
DNHY 442	Principles of Education II	3
DNHY 444	Teaching Practicum	3
DNHY 446	Principles of Clinical Instruction	3
DNHY 464	Evidence-based Decision Making	2
DNHY 478	Advanced Clinical Concepts	2
DNHY 498	Dental Hygiene Directed Study [1]	2
DNHY 499	Research Writing	2
RELE 457	Christian Ethics and Health Care [2]	2
RELT 423	Loma Linda Perspectives [3]	2
Total Units		**39**

1 Variable-unit course: minimum 2 units required. Additional units may be added.

2 LLU DH AS graduates will substitute RELR 475.

3 LLU DH AS graduates will substitute RELT 436.

Public Health

Core

Minimum grade of C- required on all the following courses including those in the concentration		
DNHY 390	Introductory Statistics	2
DNHY 391	Introduction to Grant Writing	2
DNHY 392	Grant Writing II	2
DNHY 400	Oral Disease Management	2
DNHY 419	Essentials of Public Health for Dental Hygienists	3
DNHY 421	Research I	2
DNHY 422	Research II	2
DNHY 425	Educational Psychology for Health Professionals	3
DNHY 428	Health-Care Management	3
DNHY 437	Ethical and Legal Principles in Public Health for the Dental Hygienist	2
DNHY 441	Principles of Education I	3
DNHY 449	Treating the Special-Needs Patient	3
DNHY 464	Evidence-based Decision Making	2
DNHY 498	Dental Hygiene Directed Study [1]	2
DNHY 499	Research Writing	2
RELE 457	Christian Ethics and Health Care [2]	2
RELT 423	Loma Linda Perspectives [3]	2
Total Units		**39**

1 Variable-unit course: minimum 2 units required. Additional units may be added.

2 LLU DH AS graduates will substitute RELR 475.

3 LLU DH AS graduates will substitute RELT 436.

NOTE: Consult advisor regarding other courses that may be applied to the curriculum.

Normal time to complete the program

2 years (6 academic quarters) based on half-time enrollment

Comparison

See the comparison (p. 237) of the Education and Public Health tracks of this program.

Dental Hygiene B.S. Completion — Education, Public Health Comparison

Minimum grade of C- required on all the following courses including those in the concentration

Core	Course Title	Education	Public Health
DNHY 390	Introductory Statistics	2.0	2.0
DNHY 391	Introduction to Grant Writing	2.0	2.0
DNHY 400	Oral Disease Management	2.0	2.0
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 441	Principles of Education I	3.0	3.0
DNHY 464	Evidence-based Decision Making	2.0	2.0
DNHY 498	Dental Hygiene Directed Study (Variable unit course: minimum 2 units required. Additional units may be added.)	2.0	2.0
DNHY 499	Research Writing	2.0	2.0
RELE 457	Christian Ethics and Health Care	2.0	2.0
RELT 423	Loma Linda Perspectives	2.0	2.0
DNHY 436	Ethical and Legal Principles in Education	2.0	
DNHY 442	Principles of Education II	3.0	
DNHY 444	Teaching Practicum	3.0	
DNHY 446	Principles of Clinical Instruction	3.0	
DNHY 478	Advanced Clinical Concepts	2.0	
DNHY 392	Grant Writing II		2.0
DNHY 419	Essentials of Public Health for Dental Hygienists		3.0
DNHY 428	Health-Care Management		3.0
DNHY 437	Ethical and Legal Principles in Public Health for the Dental Hygienist		2.0
DNHY 449	Treating the Special-Needs Patient		3.0
Totals		**39.0**	**39.0**

Professional

Programs

- Dentistry — D.D.S. (p. 238)
- International Dentist Program (IDP) — D.D.S. (p. 251)
- Biomedical Sciences — Certificate (p. 238)

Biomedical Sciences — Certificate

Program director
Daniel E. Tan

Students accepted into the Biomedical Sciences Program certificate curriculum enroll in basic science and restorative dentistry courses with first-year dental students. Faculty responsible for teaching these students will be those who teach the first-year courses.

Students in the certificate program complete their studies in one academic year of full-time commitment. The program is intended to provide postbaccalaureate experience in the rapidly changing area of biodental sciences. As such, it will augment other career choices or improve the preparation for professional training in dentistry.

Admissions

Applicants to the Biomedical Sciences Program certificate curriculum must satisfy the same requirements as those applying to the dental 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, biochemistry, and general physics. Applicants are required to take the Dental Aptitude Test (DAT) and achieve a minimum score of 20 on each part.

Program requirements

Students are currently required to complete 34 units of courses selected by the program coordinator. The certificate curriculum is developed in consultation with the executive associate dean and will typically include anatomy, physiology, biochemistry, microbiology, restorative dentistry courses, and three units of religion.

Although several of the courses may share lecture experience and tests with the dental program, such courses will not be transferred to the D.D.S. degree program; and a student subsequently admitted to the D.D.S. degree program should expect to take, and pay for, the normal D.D.S. degree curriculum.

Required		
ANAT 511	Human Anatomy for Dentists I	5
ANAT 512	Human Anatomy for Dentists II	5
DNES 700	Orientation to Tooth Morphology	2
DNES 705	Etiology and Management of Dental Caries	2
ODRP 501	Principles of Microbiology DN	4
PHSL 503	Biochemical Foundations of Physiology	4
PHSL 505	Homeostatic Mechanisms of the Human Body	5
REL_ 5__	Graduate-level Religion	3
RESD 701	Restorative Dentistry I Lecture	2
RESD 701L	Restorative Dentistry I Laboratory	2
Total Units		**34**

Normal time to complete the program

1 year — full-time enrollment required

Dentistry — D.D.S.

Dean, School of Dentistry
Ronald J. Dailey

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 health, disease, and ways to improve health and the dental health-care delivery system through basic and applied research.

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.

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. Thereafter, such employment 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 at the office of 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 Dental 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 global 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 symptoms, and available resources and treatments.

   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

1. 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, social, and dental history.
   c. Perform an appropriate clinical and radiographic examination using necessary diagnostic aids and tests.
   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.
2. 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 identified disorder.
   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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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 aesthetics

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.

Departments and faculty

- Dental Anesthesiology (p. 247)
- Dental Education Services (p. 247)
- Endodontics (p. 247)
- Oral Diagnosis, Radiology, and Pathology (p. 248)
- Oral and Maxillofacial Surgery (p. 248)
- Orthodontics and Dentofacial Orthopedics (p. 248)
- Pediatric Dentistry (p. 249)
- Periodontics (p. 249)
- Restorative Dentistry (p. 249)

Admissions

The Admissions Committee looks for evidence of scholastic competence, high 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 and documents should be sent to:

Admissions Processing
Loma Linda University
Loma Linda, CA 92350

Admission requirements

Although the predental curriculum 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 programs and must be taken in an accredited college in the U.S. or Canada:

Humanities

English composition (complete course sequence, two semesters or two quarters) to include composition and literature

Natural Sciences

A complete course sequence, two semesters or three 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 (3 semester or 12 quarter units) in general biology, general chemistry, organic and inorganic chemistry, and general physics are 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 four units or two quarters or a minimum of six 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.

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 resolution 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 U.S. or Canada or from a nonaccredited college or university in the U.S. 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 U.S. or Canada. 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.)

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.

Application procedure

The school participates in the American Association of Dental Schools Application Service (AADSAS). Applications are available online at <http://www.llu.edu/central/apply/index.page>.. 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. Preference is given to applicants who file by November 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. *Supplemental application.* The applicant then receives an e-mail invitation from LLU to complete an electronic supplemental application.
3. *Supplemental application deadline.* The applicant must return the completed supplemental application and materials within thirty (30) days. This includes an essay specific to Loma Linda University, a photograph, and the application fee of $100.
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 academic year of classes. *International students must submit official transcripts at time of supplemental application.
5. *References.* The applicant is asked to supply a minimum of three personal references. It is recommended these include an academic reference from a science professor; 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 is 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.
7. *Interview.* The applicant's records will be screened when the supplemental 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 in order to become familiar with the work of a dentist. Prior to interviewing, applicants are expected to complete a minimum of fifty (50) hours of observation/work experience in a dental facility, ten (10) of which must be done in a general practitioner's office.
9. *Acceptance.* The accepted student receives an acceptance letter. Upon payment of the deposit, accepted students receive an e-mail that serves as a receipt, as well as information about how to access registration information.
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 registration information made available electronically to the student by LLU. In order to avoid having a hold placed on registration, the student is encouraged to return the documentation forms to Student Health Service no later than six weeks prior to the beginning of classes.
    For a complete list of required immunizations and tests, see Section II of this CATALOG under the heading "Health Care." Documentation verifying compliance with this requirement must be provided before registration can be completed.

    For further information, consult the *Student Handbook*, Section V—University Policies—Communicable disease transmission prevention policy; or contact the Student Health Service office at 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 nonrefundable deposit of $1,000 to the Office of Admissions. All deposits become part of the first term's tuition. Failure to submit this deposit will result in loss of the applicant's position in the class. A second nonrefundable deposit of $1,000 is due on May 1 in order to secure a place in the class. The remaining balance of the first term's tuition and fees are due no later than the day of matriculation in August. 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 pay for their first year's tuition and fees before they can register for Autumn term. In addition, they must provide documentary evidence of sufficient funds for their second year. International students will receive the necessary visa applications and registration information 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 e-mail, <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. A transfer applicant should expect to begin at the first-year level and will be considered only if there is space available. 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 LLUSD Office of Academic Affairs for both predental and dental school courses completed;
- Dental Admission Test results.

Program requirements

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
First Year						
ANAT 511	Human Anatomy for Dentists I	44	40		84	5.0
ANAT 512	Human Anatomy for Dentists II	44	40		84	5.0
ANAT 513	Human Anatomy for Dentists III	45	38		83	5.0
DNES 705	Etiology and Management of Dental Caries	22			22	2.0
DNES 707	Personal Development	20			20	2.0
DNES 708	Introduction to the Dental Profession	10			10	1.0
ODRP 501	Principles of Microbiology DN	44			44	4.0
PERI 705	Fundamentals of Periodontics I	22			22	2.0
PHSL 503	Biochemical Foundations of Physiology	40			40	4.0
PHSL 504	Physiological Systems of the Human Body	56			56	5.0
PHSL 505	Homeostatic Mechanisms of the Human Body	51			51	5.0
RELE 734	Christian Ethics for Dentists	20			20	2.0
RELT 775	Spirituality and the Christian Health Professional	20			20	2.0
RESD 701	Restorative Dentistry I Lecture	25			25	2.0
RESD 701L	Restorative Dentistry I Laboratory		60		60	2.0
RESD 702	Restorative Dentistry II	20			20	2.0
RESD 702L	Restorative Dentistry II Laboratory		62		62	2.0
RESD 708	Restorative Dentistry III Lecture	23			23	2.0
RESD 708L	Restorative Dentistry III Laboratory		74		74	2.0
Second Year						
ANDN 751	Dental Anesthesia: Local Anesthesia and Inhalation Sedation	30	30		60	4.0
DNES 500	Curricular Practical Training (May be taken multiple times to meet total required hours of 120.)	120			120	0.0
DNES 718	Communication Basics for the Dentist	10			10	1.0
DNES 789	National Board Part I Review	38			38	2.0
ENDN 831	Endodontics I	10			10	1.0
ENDN 832	Endodontics II		60		60	2.0
ODRP 701	Radiology I: Clinical Procedures	18	16		34	1.5
ODRP 725	Patient Assessment and Data Management	38	24		62	3.0
ODRP 726	Patient Diagnosis and Treatment Planning	35			35	1.5
ODRP 735	Dental Emergency Diagnosis and Treatment	10			10	1.0
ODRP 751	General and Systemic Pathology I	40			40	4.0
ODRP 752	General and Systemic Pathology II	40			40	4.0
ODRP 755	Radiology II: Theory and Interpretation	24			24	2.0
ODRP 761	Oral Pathology and Diagnosis	65			65	6.0
ORDN 751	Principles of Orthodontics I	11			11	1.0
PEDN 753	Pediatric Dentistry I Lecture	22			22	2.0
PEDN 753L	Pediatric Dentistry I Laboratory		44		44	1.0
PERI 741	Fundamentals of Periodontics II	22			22	2.0
PERI 742	Essential Periodontal Therapy Laboratory	10	30		40	2.0
PHRM 501	Pharmacology and Therapeutics SD	44			44	4.0
RESD 709	Restorative Dentistry IV Lecture	22			22	2.0
RESD 709L	Restorative Dentistry IV Laboratory		60		60	2.0
RESD 764	Removable Prosthodontics	44	49		93	5.5
RESD 771	Single Casting Technique Lecture	24			24	2.0
RESD 771L	Single Casting Technique Laboratory		60		60	2.0
RESD 772	Fixed Prosthodontics Lecture	22			22	2.0
RESD 772L	Fixed Prosthodontics Laboratory		66		66	2.0
RESD 875	Restorative Dentistry Clinic			1125	1125	37.5
SDCL 711	Clinic Orientation I	22			22	2.0
SDCL 712	Clinic Orientation II	22			22	2.0
Third Year						

ANDN 801	Dental Anesthesia: Advanced Topics	22			22	2.0
DNES 794	Public Health Dentistry	22			22	2.0
DNES 800	Interprofessional Laboratory Experience		4		4	0.0
DNES 804	Applied Statistics	22			22	2.0
DNES 806	Research Design	20			20	2.0
DNES 806L	Research Design Laboratory		33		33	1.0
ENDN 834	Endodontics III	12			12	1.0
ODRP 807	Oral Medicine I: TMJ/Orofacial Pain I	12			12	1.0
ODRP 808	Oral Medicine II: Medically Compromised Patient	22			22	2.0
ODRP 811	Oral Medicine III: TMJ/Orofacial Pain II	12			12	1.0
ODRP 821	Clinical Management of Older Adults	11			11	1.0
ODRP 825	Oral Diagnosis, Radiology, and Pathology Clinic			90	90	3.0
OMFS 805	Oral and Maxillofacial Surgery I	12			12	1.0
OMFS 811	Oral and Maxillofacial Surgery II	22			22	2.0
OMFS 825	Oral and Maxillofacial Surgery Clinic I			30	30	1.0
ORDN 801	Minor Tooth Movement	18	16		34	2.0
ORDN 811	Principles of Orthodontics II	11			11	1.0
PEDN 821	Pediatric Dentistry II	12			12	1.0
PEDN 825	Pediatric Dentistry Clinic			105	105	3.5
PERI 765	Essential Periodontal Therapy	22			22	2.0
PERI 805	Periodontal Surgical Therapy	16			16	1.0
PHRM 503	Clinical Pharmacology in Dentistry	20			20	2.0
RELR 717	Diversity and the Christian Health Professional	20			20	2.0
RELR 749	Personal and Family Wholeness	20			20	2.0
RELT 726	Jesus (elective religion course) [1]	20			20	2.0
RESD 773	Fixed Prosthodontics II Lecture	22			22	2.0
RESD 773L	Fixed Prosthodontics II Laboratory		68		68	2.0
RESD 801	Fixed Prosthodontics and Occlusion	10			10	1.0
RESD 811	Dental Materials II	12			12	1.0
RESD 822	Operative Dentistry II Lecture	11			11	1.0
RESD 822L	Operative Dentistry II Laboratory		33		33	1.0
RESD 823	Aesthetic Dentistry	16			16	1.0
RESD 823L	Aesthetic Dentistry Laboratory		30		30	1.0
RESD 854	Implant Dentistry	22			22	2.0
RESD 854L	Implant Dentistry Laboratory		30		30	1.0
Fourth Year						
DNES 800	Interprofessional Laboratory Experience		4		4	0.0
DNES 807	Practice Management I	20			20	2.0
DNES 809	Practice Management II	20			20	2.0
DNES 851	The Dentist and the Law	20			20	2.0
DNES 889	National Board Part II Review	32			32	2.0
ENDN 835	Endodontics IV		40		40	1.0
ENDN 875	Endodontics Clinic			30	30	1.0
ODRP 826	Oral Medicine IV: Clinical Oral Pathology and Oncology	20			20	2.0
ODRP 875	Oral Diagnosis, Radiology, and Pathology Clinic			120	120	4.0
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			90	90	3.0
PERI 875	Periodontics Clinic			225	225	7.5
RELR 715	Christian Dentist in Community	20			20	2.0
RESD 844	Restorative Study Club Seminar	8			8	0.5
RESD 861	Senior Topics in Removable Prosthodontics	22			22	2.0
Total Units		**1852**	**1011**	**1875**	**4738**	**246.5**

[1] May be substituted with another course in religion.

Normal time to complete the program

4 years (15 academic quarters) — full-time enrollment required

Dental Anesthesiology

The Dental Anesthesiology Department is staffed by dentists with advanced training in anesthesiology. The faculty provides didactic and clinical instruction in all areas of pain and anxiety control in dentistry. Didactic and clinical instruction in the use of local anesthetics, clinical pharmacology, and medical emergency management is provided to the predoctoral dental and undergraduate dental hygiene students. Postdoctoral students receive instruction in physical diagnosis, clinical medicine, hospital protocol, medical emergency management, and local anesthesia; as well as all forms of sedation and general anesthesia. The anesthesia management of the medically and physically compromised dental patient is emphasized.

Chair

John W. Leyman

Director, Advanced Education Program

Larry D. Trapp

Director, Special Care Dentistry clinic

John W. Leyman

Primary faculty

John W. Leyman

Dezireh Sevanesian

Chad A. Tomazin

Larry D. Trapp

Dental Education Services

The Division of Dental Education 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 as the underlying philosophy of dental practice is studied. 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."

Chair

Ronald J. Dailey

Primary faculty

Marjorie R. Arnett

Edwin L. Christiansen

Ronald J. Dailey

Graciela G. Duran

William M. Hooker

Neal A. Johnson

Krista J. Juhl

Fred C. Kasischke

R. Steven Kurti, Jr.

Edna M. Loveless

Lancelot S. McLean

Kathleen L. Moore

Daniel J. Ninan

Udochukwu E. Oyoyo

Thomas C. Rogers

D. Graham Stacey

James R. Trott

Rodney L. Turner

P. Esther Valenzuela

Wu Zhang

Emeritus faculty

James M. Crawford

George M. Lessard

Endodontics

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.

Chair

Bonnie J. Retamozo

Director, Advanced Specialty Education Program

Mahmoud Torabinejad

Primary faculty

Leif K. Bakland

Robert A. Handysides

Steven G. Morrow

Bonnie J. Retamozo

Mahmoud Torabinejad

Emeritus faculty

Donald L. Peters

Oral Diagnosis, Radiology, and Pathology

The Department of Oral Diagnosis, Radiology, and Pathology covers a variety of disciplines. The overall focus of the department is to train dental students in the comprehensive assessment of patients and 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 and the medically compromised patient, geriatric and special needs dentistry, emergency diagnosis and treatment, oral pathology, radiology, patient assessment, 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.

Chair

Heidi L. Christensen

Primary faculty

Perry D. Burtch

Heidi L. Christensen

Lynda M. Juhl-Burnsed

Dwight D. Rice

Susan D. Richards

Susan Roche

Scott C. Smith

Erin E. A. Stephens

Emeritus faculty

Lane C. Thomsen

Oral and Maxillofacial Surgery

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 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 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, judgment, and interest in oral and maxillofacial surgery.

Chair

Alan S. Herford

Director, Advanced Specialty Education Program

Alan S. Herford

Director, Predoctoral Program

Wayne K. Tanaka

Primary faculty

Eun-Hwi Elizabeth Cho

Alan S. Herford

Rafik R. Rofael

Wayne K. Tanaka

Orthodontics

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.

Chair

Joseph M. Caruso

Director, Advanced Specialty Education Program

V. Leroy Leggitt

Faculty

Josepht M. Caruso

James Farrage

Gabriela Garcia

V. Leroy Leggitt

Roland Neufeld

Gregory W. Olson

Kitichai Rungcharassaeng

R. David Rynearson

Pediatric Dentistry

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.

Chair

Bonnie A. Nelson

Directory, Advanced Speciality Education Program

Jung-Wei Chen

Primary faculty

Jung-Wei Chen

Afsaneh Matin

Bonnie A. Nelson

Wesley K. Okumura

Samah Omar

Melva Wyatt

Emeritus faculty

John E. Peterson, Jr.

Periodontics

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."

Interim chair

Jeffrey M. Henkin

Director, Advanced Speciality Education Program

Jeffrey M. Henkin

Director, Predoctoral Programs

Ahmed Khocht

Primary faculty

R. Leslie Arnett, Jr.

Loredana E. Burciu

Martyn S. Green

Jeffrey M. Henkin

Oliver C. Hoffmann

Yoon-Jeong Kim

Leticia C. Lenoir

Adrian Mobilia

Manoochehr G. Parsi

Erik F. Sahl

Dennis H. Smith

Chun Xiao Sun

Barbara Valadez

Klaus D. Wolfram

Adjunct faculty

Nikola Angelov

Restorative Dentistry

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.

Chair

Ronald E. Forde

Director, Advanced Specialty Education Proram in Prosthodontics

Mathew T. Kattadiyil

Director, Advanced Education Program in Implant Dentistry

Jaime L. Lozada

Primary faculty

Aladdin Al-Ardah

Daniel R. Armstrong

Andrea R. Beckford

Frederick A. Berry

H. Brooks Burnsed

Vincent K. Chee

Eun-Joo P. Choi

Iris H. Choi

L. Todd Cochran

Mark E. Estey

Madelyn L. Fletcher-Stark

Ronald E. Forde

Gary J. Golden

Charles J. Goodacre

Wendy C. Gregorius

William H. Heisler

Paula M. Izvernari

Rami R. Jekki

Zina F. Johnston

Joseph Y. K. Kan

Mathew T. Kattadiyil

Jeong Suk Kim

Jessica Jung Hwa Kim

Soh Yeun Kim

S. Alejandro Kleinman

Edward Ko

Doris R. Kore

Sean S. H. Lee

Yiming Li

Jaime L. Lozada

Gregory D. Mitchell

Doyle R. Nick

Paul L. Richardson

Holli C. Riter

Clyde L. Roggenkamp

Brent E. Shakespeare

Ronald L. Sorrels

Raghad J. Sulaiman Shammo

Daniel E. Tan, Jr.

L. Parnell Taylor

F. Jose Torres

Robert D. Walter

Myron S. Winer

John B. Won

Ronald L. Young

Adjunct faculty

Michael R. Meharry

Mostafa Nazari

Brian B. Novy

Emeritus faculty

Douglass B. Roberts

International Dentist Program — D.D.S.

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 486 students from eighty-one 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.

Regulations

The student is also subject to the conditions of registration, attendance, financial policy, governing practices, and graduation requirements outlined in Section II (p. 36) and in the School of Dentistry (p. 220) general information in Section III of this CATALOG.

Program director

Jessica Kim

Faculty

Andrea R. Beckford

H. Brooks Burnsed

Michael J. Fitzpatrick

Paula M. Izvernari

Balsam F. Jekki

Rami R. Jekki

Ronald L. Sorrels

Klaus D. Wolfram

Admissions

Applications are available online at <http://www.llu.edu/central/apply/index.page>. Requests for information are accepted by e-mail or telephone.

Admission requirements

- Dental degree from a recognized international dental school.
- Successful completion of the National Dental Board Examination, Part I and Part II.
- TOEFL examination, with a minimum score of twenty (20) in each area of the Internet-based examination.
- Dental school transcript (evaluated by an LLU-approved organization).

Other documentation is required, as outlined in the application. A nonrefundable application fee of $100 is required with the application and accompanying documentation between April 16 and July 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. *CAAPID application.* The CAAPID application is completed online by the applicant at <http://www.adea.org>. The Office of Admissions receives applications from CAAPID four weeks after they are submitted.
2. *Supplemental application.* The applicant then receives an email invitation from LLU to complete an electronic supplemental application.
3. *Supplemental application deadline.* The applicant must return the completed supplemental application and materials within thirty (30) days. This includes an essay specific to Loma Linda University, a photograph, and the application fee of $100.
4. *Transcripts.* Prior to offers of admission, official transcripts with English translations and documentation of all postsecondary education must be mailed directly from all colleges/universities attended by the student.
5. *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.
6. *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 CAAPID.
7. *Selection process*
   - *Screening: Completed applications submitted before the application deadline will first be evaluated by the Office of Admissions.*
   - *Admissions testing:* Testing is conducted one or more Sundays in the fall.
   - *Interview:* Based on Admissions 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 (24) applicants are accepted each year for enrollment in the International Dentist Program which begins Spring term.
8. *Deposits.* A student accepted into the International Dentist Program must submit a deposit of $4,000 USD to Loma Linda University by the date specified. Students must also pay in advance for two term's tuition costs. For students eligible for government-sponsored financial aid programs, only the first term 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.
9. *Financial requirement.* Students applying for or holding F-1 U.S. student visas are required by U.S. immigration regulation to pay for the first year's tuition and fees and provide documented evidence of sufficient funds for their second year prior to enrolling for the Spring Quarter.
10. *Financial aid.* A financial aid advisor and financial aid programs are available. Applicants should contact the Office of Financial Aid at

e-mail <finaid@llu.edu>; or by telephone, 909/558-4509. Web site information can be obtained at <llu.edu/central/ssweb/finaid>.

11. *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 registration information made available electronically to the student by LLU. In order to avoid having a hold placed on registration, the student is encouraged to return the documentation forms to Student Health Service no later than six weeks prior to the beginning of classes.

For a complete list of required immunizations and tests, see Section II of this CATALOG under the heading "Health Care." Documentation verifying compliance with this requirement must be provided before registration can be completed.

For further information, consult the *Student Handbook*, Section V—University Policies—Communicable disease transmission prevention policy; or contact the Student Health Service office at 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.

Students in the International Dentist Program have the same benefits, including health-care coverage, as are described elsewhere in this CATALOG.

Program requirements

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
Third Year						
DNES 504	Curricular Practical Training for IDP[1]		60		60	0.0
DNES 707	Personal Development	20			20	2.0
DNES 800	Interprofessional Laboratory Experience[1]		4		4	0.0
ENDN 831	Endodontics I	10			10	1.0
ENDN 832	Endodontics II		60		60	2.0
ENDN 835	Endodontics IV		40		40	1.0
IDPC 815	Clinical Orientation I - IDP	11	30		41	2.0
IDPC 816	Clinical Orientation II - IDP	10			10	1.0
IDPC 817	Clinical Orientation III - IDP			30	30	1.0
IDPC 825	General Clinics			480	480	16.0
IDPG 845	Evidence-Based Dentistry	22			22	2.0
IDPO 534	Oral Medicine: Orofacial Pain and TMD[2]	22			22	2.0
IDPO 535	Oral Pathology and Diagnosis	33			33	3.0
IDPO 725	Patient Assessment and Data Management	22			22	2.0
IDPO 726	Patient Diagnosis and Treatment Planning	22			22	2.0
IDPO 826	Oral and Maxillofacial Surgery	11	33		44	2.0
IDPO 827	Oral and Maxillofacial Surgery	11	33		44	2.0
IDPP 754	Clinical Periodontics	11	33		44	2.0
IDPP 755	Pediatric Dentistry Clinic--IDP			48	48	1.0
IDPP 756	Pediatric Dentistry	22			22	2.0
IDPP 756L	Pediatric Dentistry Laboratory		44		44	1.0
IDPP 759	Special Topics in Periodontal Therapy	22			22	2.0
IDPR 701	Operative Dentistry I	11	33		44	2.0
IDPR 702	Operative Dentistry II	11	33		44	2.0
IDPR 704	Introduction to Occlusion	22			22	2.0
IDPR 750	Dental Materials	22			22	2.0
IDPR 761	Removable Prosthodontics I	11	33		44	2.0
IDPR 762	Removable Prosthodontics II	11	33		44	2.0
IDPR 771	Fixed Prosthodontics I	11	33		44	2.0
IDPR 772	Fixed Prosthodontics II	11	33		44	2.0
IDPR 773	Advanced Prosthodontics for IDP	22			22	2.0
IDPR 803	Operative Dentistry III	11	33		44	2.0
IDPR 854	Implant Dentistry for the IDP Student	22	44		66	3.0
ORDN 801	Minor Tooth Movement	18	16		34	2.0
ORDN 811	Principles of Orthodontics II	11			11	1.0
RELE 734	Christian Ethics for Dentists	20			20	2.0
RELR 749	Personal and Family Wholeness	20			20	2.0
Fourth Year						
DNES 504	Curricular Practical Training for IDP[1]		60		60	0.0
DNES 800	Interprofessional Laboratory Experience[1]		4		4	0.0
DNES 817	Practice Management I for IDP Students	10			10	1.0
DNES 818	Practice Management II for IDP Students	10			10	1.0
IDPC 835	General Clinics			880	880	24.0
IDPC 845	General Clinics - Direct Patient Care			480	480	16.0
PEDN 821	Pediatric Dentistry II	12			12	1.0
RELT 717	Christian Beliefs and Life	20			20	2.0
Total Units		**535**	**692**	**1918**	**3145**	**124**

1 This course may be taken in the D3 or D4 year.

2 Course for IDP students offered in odd-numbered years

Normal time to complete the program

2 years at LLU—full-time enrollment required

Advanced Dental Education

Assistant dean for advanced dental education
Steven G. Morrow

The School of Dentistry offers advanced dental education programs in specialty and nonspecialty disciplines of dentistry. Postdoctoral certificates and 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>

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.

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 2014-2015.

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 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.

Admissions

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 4.0 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). 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.

Students have five years from the date of acceptance of the certificate program to complete the requirements for the MS degree. All the MSD requirements may be completed during the program but no later than one year from the candidate's program completion date.

Admissions criteria for advanced dental education programs 2014

Program	Official Transcript(s)[1]	Cumulative G.P.A.[2]	GRE[3]	National Boards Part I[3]	DAT	TOEFL[4]	Letters of Recommendation
Dental Anesthesiology[5] (24 mo./6 positions)	Required	3.0	Not required	Required all applicants	Not required	Required (internationally trained)	3
Endodontics [10] (27 mo./2 positions; 36 mo./1 position)	Required	3.0	Not required for certificate program	Required (only U.S.-trained applicants)	Not required	Required (internationally trained)	3
Implant Dentistry (36 mo./3 positions)	Required	3.0	Not required for certificate program	Not required	Not required	Required (internationally trained)	3
Oral and Maxillofacial Surgery [7, 12] (4 yrs./2 positions; 6 yrs./2 positions)	Required	3.0	Not required for certificate program	Required (all applicants) score of 86 or higher	Required (all 6-year applicants)	Required (internationally trained)	3
Orthodontics and Dentofacial Orthopedics [6, 8, 10] (27 mo./6 positions)	Required	3.0	Required	Required (all applicants)	Required (all applicants)	Required (internationally trained)	3
Pediatric Dentistry [11, 13] (24 mo./4 positions)	Required	3.0	Required for internationally trained applicants	Required (only U.S.-trained applicants)	Not required	Required (internationally trained)	3
Periodontics [9] (36 mo./3 positions)	Required	3.0	Not required for certificate program	Required (only U.S.-trained applicants)	Not required	Required (internationally trained)	3
Prosthodontics (36 mo./4 positions)	Required	3.0	Not required for certificate program	Required (only U.S.-trained applicants)	Not required	Required (internationally trained)	3

Application and program dates

Program	LLU Applications Open	LLU Applications Close	Admissions Committee Meets	Pass Applications Open	Pass Applications Close	Advanced Education Programs Start Date	Advanced Education Programs Ending Date
Dental ANES	1/1/2013	9/1/2013	November	5/2013 Match participant	9/1/2013	July 1	June 30
ENDN	1/1/2013	8/1/2013	September	5/2013	8/1/2013	July 1	Late September
IMPD	1/1/2013	8/15/2013	December	n/a	n/a	July 1	June 30
OMFS	1/1/2013	10/15/2013	January	5/2013 Match participant	10/15/2013	July 1	June 30
ORDN	1/1/2013	8/1/2013	November	n/a	n/a	July 1	Late September
PEDN	1/1/2013	10/1/2013	January	5/2013 Match participant	10/1/2013	July 1	June 30
PERI	1/1/2013	9/1/2013 (rolling admissions)	September	5/2013	9/1/2013	July 1	June 30

PROS	1/1/2013	8/15/2013	September	5/2013	8/15/2013	July 1	June 30

[1] *Transcripts.* Transcripts from all postsecondary schools from which credit was received, whether or not the work pertains to your LLU degree, are required to complete your application.

[2] *Grade Point Average (G.P.A.).* A cumulative G.P.A. of 3.0 (on a 4.0 scale) is required for admission.

[3] *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.

[4] *English Language Skills.* Non-U.S. 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. They 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.

[5] *Dental License.* All applicants for the Advanced Education Program in Dental Anesthesiology who are not currently enrolled in a U.S. or Canadian dental school must have a current U.S. or Canadian dental license.

[6] *International Dentist Program.* All graduates from non-ADA-accredited dental schools who apply to the Advanced Specialty Education Program in Orthodontics and Dentofacial Orthopedics must complete an accredited International Dentist Program.

[7] *Oral and Maxillofacial Surgery.* All applicants to the six-year program also must submit their DAT scores to University Admissions through official channels.

[8] *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. To be considered, applicants must take the GRE.

[9] *Periodontics.* This program has a rolling admission process between January 1 and September 1, which means it reserves the right to fill some but not all of its entering class prior to the September 1 deadline.

[10] *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 due by the regular application deadline.

[11] *Pediatric Dentistry.* All applicants for the Pediatric Dentistry Program who have received their dental school training outside the U.S. or Canada must have a current dental license from their country and submit a notarized copy with their application.

[12] *National Board Medical Examination (NBME) Comprehensive Basic Science Examination.* Applicants for the Oral and Maxillofacial Surgery Program who take the National Board Dental Examination (NBDE) Part I after January 1, 2012—and, therefore, do not have a numerical score—must take the National Board Medical Examination (NBME) Comprehensive Basic Science Examination and have their official test results reported to Loma Linda University by the application deadline.

[13] *TOEFL Scores for Pediatric Dentistry.* The Pediatric Dentistry Program requires a minimum paper-based TOEFL score of 590 or an internet-based score of 90. TOEFL scores are valid for two years from the test date.

Master of Science in Dentistry (M.S.D.) Degree, Advanced

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 requirements.

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. The Part I form can be found in the advanced education section of Canvas. The Part I form 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. The 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 electronically to the Office of Advanced Dental Education.

Master of Science (M.S.) Degree, Advanced

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
   - 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 Canvas and 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 electronically to the Office of Advanced Dental Education.

Academic policies

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.
B-	2.7	Passing grade but 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 if their cumulative G.P.A. is below 3.0.

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.
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."

* 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.

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 for advanced education 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 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 C+ or lower.
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 C+, or lower; 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 recommendation of the program director.
3. Behavioral probation (Level I to III)—by the associate dean for advanced education or upon recommendation of the program director.
4. Clinical probation (Level I to III)—by the associate dean for advanced education or upon recommendation of the program director.
5. Discontinuation—by the associate dean for advanced education or upon recommendation of the program director 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 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.

Programs

- Dental Anesthesiology — post-D.D.S. Certificate, M.S.D. (p. 261)
- Endodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 262) (Comparison (p. 264))
- Implant Dentistry — post-D.D.S. Certificate, M.S.D., M.S. (p. 264)
- Oral and Maxillofacial Surgery — post-D.D.S. Certificate, M.S.D., M.S. (p. 266)
- Orthodontics and Dentofacial Orthopedics — post-D.D.S. Certificate, M.S. (p. 267)
- Pediatric Dentistry — post-D.D.S. Certificate, M.S.D., M.S. (p. 269)
- Periodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 270)
- Prosthodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 271)

General degree requirements

Master of Science in Dentistry (M.S.D.) Degree, Advanced

Graduate students and residents enrolled in certain advanced education certificate 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 requirements.

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.
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. A publishable paper and public presentation of the research are required. The manuscript must be in a format approved by the respective program director.
4. Students who do not complete the publishable paper while completing the curriculum will have one year from their program end date to fulfill this requirement.
5. After conducting an internal degree audit, the program director completes and signs the Part III form (Statement of Completion) to verify that all requirements for the M.S.D. degree have been met.
6. The associate dean for advanced education reviews the student's file and academic record (final degree audit) before signing the Part III 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

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.

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 the beginning of the certificate program to fulfill this requirement for the master's degree.
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.

Dual majors

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 (p. 271) and prosthodontics (p. 272), comparison (p. 273); periodontics (p. 271) and implant dentistry (p. 265), comparison (p. 274); or prosthodontics (p. 272) and implant dentistry (p. 265), comparison (p. 275)— 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.

Length of program

- Periodontics and Prosthodontics (up to 5 years in length)
- Periodontics and Implant Dentistry (approximately 4 1/2 years in length)
- Prosthodontics and Implant Dentistry (approximately 4 1/2 years in length)

Dental Anesthesiology — Certificate (post-D.D.S.), M.S.D.

The Advanced General Dentistry Education Program in dental anesthesiology 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. Scheduled simulation training is obtained at the LLU Medical Simulation Center. 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 their topics 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

Goal 1	To provide the dental anesthesia resident with anesthesia-related skills and knowledge that are the basis for a safe and responsible practice of office-based or hospital-based dental anesthesiology after completion of the training program.
Goal 2	To provide an in-depth education in acute pain and anxiety as it pertains to dental treatment and an understanding of the application of the pharmacologic and behavioral treatments of these conditions.
Goal 3	To provide a background in the health sciences and clinical medicine that will allow a dentist anesthesiologist to recognize and appropriately refer the patient who is at elevated risk for anesthesia due to comorbidities.
Goal 4	To develop desirable character values and attributes in residents—including professionalism, respect for others, responsibility, compassion, integrity, and ethical behavior; and to instill the importance of a commitment to lifelong learning.
Goal 5	To develop professional presentation skills to enhance professional communications.

Program link: <llu.edu/dentistry/anesthesia/graduateprogram.page>.

Director, Advanced General Dentistry Education Program in Dental Anesthesiology

Larry D. Trapp

Associate Director, Advanced General Dentistry Education Program in Dental Anesthesiology

Dezirah Sevanesian

Director, Koppel Special Care Dentistry Center

John W. Leyman

Faculty

John W. Leyman

Dezireh Sevanesian

Chad A. Tomazin

Larry D. Trapp

Admissions

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.

The advanced specialty education program in dental anesthesiology 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.

All applicants must complete and submit an online application (<llu.edu/central/apply>) directly to Loma Linda University and the Match (<https://portal.passweb.org/) application. A PASS application is available (<https://portal.passweb.org/), but not required.

Application deadline

Application for admission should be submitted no later than September 15 of the year prior to the summer of intended enrollment.

Tuition

Tuition and fees for the 2014-15 academic year are waived. Residents are paid a stipend during training.

Program requirements

Certificate

Major		
ANDN 521	Principles of Medicine, Physical Diagnosis, and Hospital Protocol	8
ANDN 549	Contemporary Anesthesia	2
ANDN 547	Anesthesia Grand Rounds	8
ANDN 604	Anesthesia Literature Review	2
ANDN 652	Introduction to General Anesthesia	1
ANDN 654	Practice Teaching in Anesthesia	1
ANDN 674	Crisis Management in Anesthesia	4
ANDN 696	Scholarly Activity in Dental Anesthesiology	1
Interdisciplinary		
REL_ 5__	Graduate-level Religion	3
Clinical [1]		
ANDN 746	General Anesthesia	80
Total Units		**30**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

2 years (24 months) — full-time enrollment required

M.S.D.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

ANDN 697A	Research	1
ANDN 697B	Research	1
ANDN 697C	Research	1

Normal time to complete the program

2 years (24 months) — full-time enrollment required

Endodontics — Certificate (post-D.D.S.), M.S.D., M.S.

The mission of the twenty-seven-month Endodontics, Advanced Specialty 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 mission of the thirty-six-month Endodontics, Advanced Program is to provide additional care for patients who have failed root canal treatment and require a single tooth implant. The thirty-six-month program consists of the entire twenty-seven-month curriculum; as well as additional courses in periodontics, radiology, and implant dentistry.

The goals of the Endodontics Advanced Specialty 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; as well as implant as a part of the thirty-six-month program.
3. Participated in endodontic research and teaching.
4. Been prepared for careers in clinical practice.
5. If completing the thirty-six-month program, the knowledge and skills to diagnose and treat patients with failed root canals who would benefit from surgical placement and restoration of a single tooth implant, when such care is needed.

The programs begin in July and require twenty-seven or thirty-six months in residence, depending on the specialty training pursued.

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.

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>.

Director, Advanced Specialty Education Program

Mahmoud Torabinejad

Faculty

Bonnie J. Retamozo

Mahmoud Torabinejad

Admissions

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>) directly to Loma Linda University.

This program also will accept direct applications for individuals who are not applying to other institutions through PASS.

Application deadline

Application for admission should be submitted by August 1 of the year prior to the summer of intended enrollment.

Tuition

Tuition and fees for the 2014-15 academic year (effective July 1, 2014) is $15,139.00 per quarter. Tuition is adjusted annually every July 1st. These fees do not include instruments and textbooks that may be required.

A separate fee of $800 is charged for GRDN 632 Basic Microsurgery Techniques, taken by students during the first quarter.

Program requirements

27-month Certificate

Major		
ENDN 534	Endodontic Treatment Conference	18
ENDN 601	Principles of Endodontics	10
ENDN 604	Literature Seminar in Endodontics	12
ENDN 654	Practice Teaching in Endodontics	4
ENDN 697A	Research	1
ENDN 697B	Research	1
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 609	Professional Ethics	2
GRDN 622	Biomedical Science I	2
GRDN 623	Biomedical Science II	4
GRDN 632	Basic Microsurgery Techniques	2
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
ORPA 533	Radiology Topics for Graduate Dental Programs	2
PERI 608	Dental Specialty Practice Management	2
PERI 624	Moderate Sedation in Periodontics	4
REL 5	Gradauate-level Religion	3
Clinical [1]		
ENDN 725	Clinical Practice in Endodontics	72
Total Units		**77**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

2.3 years (9 academic quarters) — full-time enrollment required

36-month Certificate

Major		
ENDN 534	Endodontic Treatment Conference	21
ENDN 601	Principles of Endodontics	10
ENDN 604	Literature Seminar in Endodontics	12
ENDN 654	Practice Teaching in Endodontics	4
ENDN 697A	Research	1
ENDN 697B	Research	1
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 609	Professional Ethics	2
GRDN 622	Biomedical Science I	2
GRDN 623	Biomedical Science II	4
GRDN 632	Basic Microsurgery Techniques	2
IMPD 505	Patient Presentation Seminar (1.0)	7
IMPD 533	Applied Radiology for Implant Dentistry	1.5
IMPD 604	Current Literature Review in Implant Dentistry	14
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1.0)	7
ORPA 533	Radiology Topics for Graduate Dental Programs	2
PERI 524	The Periodontium	2
PERI 608	Dental Specialty Practice Management	2
PERI 611	Introduction to Periodontics	2
PERI 624	Moderate Sedation in Periodontics	4
REL 5	Graduate-level Religion	3
Clinical [1]		
ENDN 725	Clinical Practice in Endodontics	64.5
ENDN 726	Clinical Practice of Implant Dentistry in Endodontics	8
Total Units		**113.5**

[1] Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

Normal time to complete the program

3 years (12 academic quarters) — full-time enrollment required

Comparison

See the comparison (p. 264) of the 27-month and 36-month Certificates.

M.S.D.

In addition to completing the requirements for the 27-month certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

ENDN 697C	Research	1

Normal time to complete the program

2.3 years (9 academic quarters) — full-time enrollment required

M.S.

In addition to completing the requirements for the 27-month certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

ENDN 698	Thesis	1

Normal time to complete the program

2.3 years (9 academic quarters) — full-time enrollment required

Endodontics Certificate — 27-month, 36-month Comparison

Major	Course Title	27-month Certificate	36-month Certificate
ENDN 534	Endodontic Treatment Conference	18.0	21.0
ENDN 601	Principles of Endodontics	10.0	10.0
ENDN 604	Literature Seminar in Endodontics	12.0	12.0
ENDN 654	Practice Teaching in Endodontics	4.0	4.0
ENDN 697A	Research	1.0	1.0
ENDN 697B	Research	1.0	1.0
Totals		**46.0**	**49.0**
Interdisciplinary	**Course Title**	**27-month Certificate**	**36-month Certificate**
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0
GRDN 622	Biomedical Science I	2.0	2.0
GRDN 623	Biomedical Science II	4.0	4.0
GRDN 632	Basic Microsurgery Techniques	2.0	2.0
IMPD 611	Introduction to Implant Dentistry	2.0	2.0
IMPD 612	Advanced Implant Dentistry	2.0	2.0
ORPA 533	Radiology Topics for Graduate Dental Programs	2.0	2.0
PERI 608	Dental Specialty Practice Management	2.0	2.0
PERI 624	Moderate Sedation in Periodontics	4.0	4.0
REL_ 5__ Graduate-level Religion		3.0	
IMPD 505	Patient Presentation Seminar		7.0
IMPD 533	Applied Radiology for Implant Dentistry		1.5
IMPD 604	Current Literature Review in Implant Dentistry		14.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry		7.0
PERI 524	The Periodontium		2.0
PERI 611	Introduction to Periodontics		2.0
REL_ 5__ Graduate-level Religion			3.0
Totals		**31.0**	**64.5**
Clinical	**Course Title**	**27-month Certificate**	**36-month Certificate**
ENDN 725	Clinical Practice in Endodontics[1]	72.0	64.5
ENDN 726	Clinical Practice of Implant Dentistry in Endodontics[1]		8.0
Totals			
Overall Totals		**77.0**	**113.5**

[1] Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

Implant Dentistry — Certificate (post-D.D.S.), M.S.D., M.S.

The Implant Dentistry, Advanced Program leads to a certificate. The postdoctoral student may also obtain a Master of Science (M.S.) or a Master of Science in Dentistry (M.S.D.) 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 Oral Implantology/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 or a publishable paper. The additional time must be in residence.

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>.

Director, Advanced Education Program

Jaime L. Lozada

Faculty

Aladdin J. Al-Ardah

Joseph Y. Kan

Jaime L. Lozada

John B. Won

Admissions

Application process

All applicants must meet the admission requirements (p. 24) of Loma Linda University.

This program does not participate in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions or the MATCH program which 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 August 15 of the year prior to the summer of intended enrollment.

Tuition

Tuition and fees for the 2014-15 academic year (effective July 1, 2014) is $15,139.00 per quarter. Tuition is adjusted annually every July 1st. These fees do not include instruments and textbooks that may be required. Students should plan on an annual increase consistent with inflation in the education sector.

A separate fee of $800.00 is charged for GRDN 632 Basic Microsurgery Techniques, taken by students during the first quarter.

Program requirements

Certificate

Major		
IMPD 505	Patient Presentation Seminar	10
IMPD 533	Applied Radiology for Implant Dentistry	1.5
IMPD 547	Implant Dentistry Grand Rounds	10
IMPD 561	Dental Bioengineering	2
IMPD 585	Implant Prosthodontics	10
IMPD 601	Literature Review in Implant Dentistry	22
IMPD 604	Current Literature Review in Implant Dentistry	20
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
IMPD 631	Oral Implant Surgery	11
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry	10
IMPD 637	Peri-Implant Histopathology	1
IMPD 654	Practice Teaching in Implant Dentistry	3
IMPD 696	Scholarly Activity in Implant Dentistry	1
PERI 601	Periodontal Therapy	4
PERI 606	Modern Concepts of Periodontal Wound Healing	2
PERI 624	Moderate Sedation in Periodontics	4
PROS 500	Prosthodontic Literature Review	6
PROS 546	Occlusion and Morphology	2
PROS 547	Occlusion: Principles and Instrumentation	2
PROS 555	Removable Partial Prosthodontics	2
PROS 565	Complete Denture Prosthodontics	2
PROS 566	Advanced Complete Denture Prosthodontics	2
PROS 575	Fixed Partial Prosthodontics	2
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)	2
PROS 595	Maxillofacial Prosthetics	2
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 609	Professional Ethics	2
GRDN 622	Biomedical Science I	2
GRDN 632	Basic Microsurgery Techniques	2
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	4
OMFS 606	Applied Surgical Anatomy	1
REL_ 5__	Graduate-level Religion	3
Clinical [1]		
IMPD 725	Clinical Practice in Implant Dentistry	40
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry	4
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry	20
Total Units		**157.5**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

3 years (36 months) — full-time enrollment required

M.S.D.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

IMPD 697A	Research	1
IMPD 697B	Research	1
IMPD 697C	Research	1

Normal time to complete the program

3 years (36 months) — full-time enrollment required

M.S.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

IMPD 697A	Research	1
IMPD 697B	Research	1
IMPD 698	Thesis	1

Normal time to complete the program

3 years (36 months) — full-time enrollment required

Oral and Maxillofacial Surgery — Certificate (post-D.D.S.), M.S.D., M.S

The Oral and Maxillofacial Surgery, Advanced Specialty 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 Dental Accreditation (CODA) 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.

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>.

Director, Advanced Specialty Education Program

Alan S. Herford

Faculty

Jeffrey A. Elo

Alan S. Herford

Murray K. Jacobs

Frederick R. Mathews

Dale E. Stringer

Jayini S. Thakker

Admissions

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 (<llu.edu/central/apply>) 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. A Match application (<https://portal.passweb.org/) is also required.

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

Students in the Oral and Maxillofacial Surgery program with the School of Medicine are charged tuition and fees (p. 279) for the first two and one-half years of the program; tuition for the remaining years is waived.

Program requirements

Certificate

Major		
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	12
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities	12
OMFS 606	Applied Surgical Anatomy	1
OMFS 607	Principles of Medical History, Physical Examination, and Clinical Medicine	2
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	6
OMFS 609	Literature Review in Oral and Maxillofacial Surgery	6
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery	12
OMFS 618	Introduction to General Anesthesia	1
OMFS 696	Scholarly Activity in Oral and Maxillofacial Surgery	1
Interdisciplinary		
GRDN 601	Practice Management	2
GRDN 632	Basic Microsurgery Techniques	2
IMPD 547	Implant Dentistry Grand Rounds	4
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
RELE 534	Ethical Issues in Public Health	3
Clinical [1]		
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice	70
OMFS 615	Current Trends in Medicine and Surgery	12
Total Units		**69**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

Certificate—4 years (48 months) — full-time enrollment required

Certificate/M.D.—6 years — full-time enrollment required

M.S.D.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

OMFS 697A	Research	1
OMFS 697B	Research	1
OMFS 697C	Research	1

Normal time to complete the program

4 years (48 months) + research — full-time enrollment required

M.S.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

OMFS 697A	Research	1
OMFS 697B	Research	1
OMFS 698	Thesis	1

Normal time to complete the program

4 years (48 months) + thesis — full-time enrollment required

Orthodontics and Dentofacial Orthopedics — Certificate (post-D.D.S.), M.S.

The Orthodontics and Dentofacial Orthopedics, Advanced Specialty 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.

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 standards.

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>.

Director, Advanced Speciality Education Program

V. Leroy Leggitt

Faculty

Joseph M. Caruso

James R. Farrage

Gabriela E. Garcia

V. Leroy Leggitt

Roland D. Neufeld

Gregory W. Olson

Kitichai Rungcharassaeng

R. David Rynearson

Rodrigo F. Viecilli

Admission

Candidates apply for admission to the Master of Science (M.S.) degree program and have the option of applying later for a certificate as well.

All applicants must meet the admission requirements (p. 24) of Loma Linda University.

This program does not participate in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association (ADEA), which allows applicants to apply to multiple participating institutions or the MATCH program which 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

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 and fees for the 2014-15 academic year (effective July 1, 2014) is $15,139.00 per quarter. Tuition is adjusted annually every July 1st. These fees do not include instruments and textbooks that may be required

Program requirements

Major		
ORDN 524	Introduction to Graduate Orthodontics	12
ORDN 524L	Introduction to Graduate Orthodontics Laboratory	6
ORDN 525	Materials Science and Mechanics	2
ORDN 526	Applied Anatomy	2
ORDN 527	Clinical Photography	1
ORDN 535	Advanced Cephalometrics	2
ORDN 536	Concepts of Physical Anthropology	2
ORDN 545	Growth and Development	3
ORDN 546	Fundamentals of Occlusion	2
ORDN 571	Diagnosis and Treatment Planning I	2
ORDN 574	Diagnosis and Treatment Planning II	2
ORDN 584	Current Orthodontics Literature I	2
ORDN 591	Current Orthodontics Literature II	2
ORDN 597	Orthognathic Surgery Theory and Literature Review	2
ORDN 604	Seminar in Orthodontics	1
ORDN 605	Advanced Seminar in Orthodontics	2
ORDN 606	Craniofacial Genetics	2
ORDN 608	Physiology and Pathology of Speech	1
ORDN 634	Orthodontics Clinical Conference	2
ORDN 635	Finishing Mechanics I	2
ORDN 636	Finishing Mechanics II	1
ORDN 654	Practice Teaching in Orthodontics	4
ORDN 655	Temporomandibular Function and Dysfunction	2
ORDN 657	Orthodontic Board Preparation	6
ORDN 697A	Research	1
ORDN 697B	Research	1
ORDN 698	Thesis	3
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics	2
GRDN 623	Biomedical Science II	5
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	2
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1
REL 5	Graduate-level Religion	3
Clinical [1]		
ORDN 725	Clinical Practice in Orthodontics	56
Total Units		**89**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

2.25 years (27 months) — full-time enrollment required

Pediatric Dentistry — Certificate (post-D.D.S.), M.S.D., M.S

The Pediatric Dentistry, Advanced Specialty 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.

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>.

Director, Advanced Specialty Education Program

Jung-Wei Chen

Faculty

Jung-Wei Chen

Afsaneh Matin

Bonnie A. Nelson

Wesley K. Okumura

Samah I. Omar

Melva Wyatt

Ji Min Yochim

Admissions

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. A PASS application (<https://portal.passweb.org/) is required.

PASS applicants for the advanced education program in pediatric dentistry must also complete and submit an online application (<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. A Match application (<https://portal.passweb.org/) is also required.

For admissions requirements, please refer to the Program's website: <http://www.llu.edu/dentistry/pediatrics/graduateprogram.page?>.

Application deadline

Application for admission should be submitted by October 1 of the year prior to the summer of intended enrollment.

Tuition

Tuition and fees for the 2014-15 academic year (effective July 1, 2014) is $15,139.00 per quarter. Tuition is adjusted annually every July 1st. These fees do not include instruments and textbooks that may be required.

Program requirements

Certificate

Major		
PEDN 503	Pediatric Dental Seminar	16
PEDN 508	Pediatric Hospital Dentistry Seminar	2
PEDN 512	Oral Sedation Seminar	2
PEDN 521	Principles of Medicine and Physical Diagnosis	2
PEDN 524	Introduction to Orthodontics	2
PEDN 524L	Introduction to Orthodontics Laboratory	1
PEDN 604	Pediatric Dental Literature	14
PEDN 654	Practice Teaching for Pediatric Dentistry	5
PEDN 680	Elective Study for Advanced Education Students of Pediatric Dentistry	5
PEDN 696	Scholarly Activity in Pediatric Dentistry	1
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics	2
GRDN 622	Biomedical Science I	2
ORDN 526	Applied Anatomy	2
ORDN 545	Growth and Development	3
ORDN 606	Craniofacial Genetics	2
ORDN 608	Physiology and Pathology of Speech	1
ORPA 533	Radiology Topics for Graduate Dental Programs	2
REL 5	Graduate-level Religion	3

Clinical [1]		
PEDN 725	Pediatric Dental Clinic	64
Total Units		**75**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

2 years (24 months) — full-time enrollment required

M.S.D.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

PEDN 697A	Research	1
PEDN 697B	Research	1
PEDN 697C	Research	1

Normal time to complete the program

2 years — full-time enrollment required

M.S.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

PEDN 697A	Research	1
PEDN 697B	Research	1
PEDN 698	Thesis	1-3

Normal time to complete the program

2 years — full-time enrollment required

Periodontics — Certificate (post-D.D.S.), M.S.D., M.S

The three-year Periodontics, Advanced Specialty 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 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 July 1 each year.

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>.

Director, Advanced Specialty Education Program

Jeffrey M. Henkin

Faculty

R. Leslie Arnett

Martyn S. Green

James Grisdale

Jeffrey M. Henkin

Ahmed Khocht

Yoon J. Kim

Erik F. Sahl

Dennis Smith

Chun Xiao Sun

Admissions

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.

All applicants to the advanced education in periodontics program must complete and submit an online application (<llu.edu/central/apply>) directly to Loma Linda University. A PASS application is available (<https://portal.passweb.org/), but not required.

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 and fees for the 2014-15 academic year (effective July 1, 2014) is $15,139.00 per quarter. Tuition is adjusted annually every July 1st. These fees do not include instruments and textbooks that may be required.

Program requirements

Certificate

Major		
PERI 524	The Periodontium	2
PERI 531	Periodontal Pathology	10
PERI 601	Periodontal Therapy	12
PERI 604	Current Periodontal and Implant Literature	18
PERI 605	Implant Literature Review	4
PERI 606	Modern Concepts of Periodontal Wound Healing	2
PERI 608	Dental Specialty Practice Management	2
PERI 611	Introduction to Periodontics	2
PERI 614	Implant Treatment Planning	24
PERI 624	Moderate Sedation in Periodontics	4
PERI 634	Clinical Conference	9
PERI 654	Practice Teaching in Periodontics	4
PERI 696	Scholarly Activity in Periodontics	1
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 609	Professional Ethics	2
GRDN 622	Biomedical Science I	2
GRDN 632	Basic Microsurgery Techniques	2
REL_ 5__	Graduate-level Religion	3
Clinical [1]		
PERI 725	Clinical Practice in Periodontics	72
PERI 726	Clinical Practice in Implant Surgery	24
Total Units		**109**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

3 years (36 months) — full-time enrollment required

M.S.D.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

PERI 697A	Research	1
PERI 697B	Research	1
PERI 697C	Research	1

Normal time to complete the program

3 years — full-time enrollment required

M.S.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

PERI 697A	Research	1
PERI 697B	Research	1
PERI 698	Thesis	1

Normal time to complete the program

3 years — full-time enrollment required

Prosthodontics — Certificate (post-D.D.S.), M.S.D., M.S

The School of Dentistry's Prosthodontics, Advanced Specialty 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.

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>.

Director, Advanced Specialty Education Program

Mathew T. Kattadiyil

Faculty

Nadim Baba

Charles J. Goodacre

Mathew T. Kattadiyil

Myron S. Winer

Admissions

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.

All applicants to the advanced education in prosthodontics program must complete and submit an online application (<llu.edu/central/apply>) directly to Loma Linda University. A PASS application is available (<https://portal.passweb.org/), but not required.

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 August 15 of the year prior to the summer of intended enrollment.

Tuition

Tuition and fees for the 2014-15 academic year (effective July 1, 2014) is $15,139.00 per quarter. Tuition is adjusted annually every July 1st. These fees do not include instruments and textbooks that may be required.

Program requirements

Certificate

Major		
IMPD 533	Applied Radiology for Implant Dentistry	1.5
IMPD 561	Dental Bioengineering	2
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
PROS 500	Prosthodontic Literature Review	22
PROS 501	Removable Partial Prosthodontics Literature Review	2
PROS 502	Complete Denture Prosthodontics Literature Review	2
PROS 505	Patient Presentation Seminar (Prosthodontics, Implant, Perio)	9
PROS 515	Practice Teaching in Prosthodontics	2
PROS 525	Dental Materials Science	2
PROS 527	Clinical Application of Dental Materials	2
PROS 546	Occlusion and Morphology	2
PROS 547	Occlusion: Principles and Instrumentation	2
PROS 555	Removable Partial Prosthodontics	2
PROS 556	TMJ Function and Dysfunction	1
PROS 557	Advanced Removable Partial Prosthodontics	2
PROS 565	Complete Denture Prosthodontics	2
PROS 566	Advanced Complete Denture Prosthodontics	2
PROS 575	Fixed Partial Prosthodontics	2
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)	2
PROS 595	Maxillofacial Prosthetics	2
PROS 604	Literature Review in Implant Dentistry for Prosthodontists	14
PROS 634	Diagnosis and Treatment Planning	18
PROS 637	Geriatric Dentistry	1
PROS 696	Scholarly Activity in Prosthodontics	1
Interdisciplinary		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics	2
GRDN 622	Biomedical Science I	2
GRDN 623	Biomedical Science II	4
REL_ 5__	Graduate-level Religion	3
Clinical [1]		
PROS 710	Clinical Practice of Prosthodontics	66
Total Units		**120.5**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Normal time to complete the program

3 years (36 months) — full-time enrollment required

M.S.D.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

PROS 697A	Research	1
PROS 697B	Research	1
PROS 697C	Research	1

Normal time to complete the program

3 years — full-time enrollment required

M.S.

In addition to completing the requirements for the certificate as listed above, students must also complete the following courses and fulfill the general requirements (p. 260) for the degree.

PROS 697A	Research	1
PROS 697B	Research	1
PROS 698	Thesis	2

Normal time to complete the program

3 years — full-time enrollment required

Dual Major — Periodontics, Prosthodontics Comparison

Major	Course Title	Periodontics	Prosthodontics
PERI 524	The Periodontium	2.0	
PERI 531	Periodontal Pathology	10.0	
PERI 601	Periodontal Therapy	12.0	
PERI 604	Current Periodontal and Implant Literature	18.0	
PERI 605	Implant Literature Review	4.0	
PERI 606	Modern Concepts of Periodontal Wound Healing	2.0	
PERI 608	Dental Specialty Practice Management	2.0	
PERI 611	Introduction to Periodontics	2.0	
PERI 614	Implant Treatment Planning	24.0	
PERI 624	Moderate Sedation in Periodontics	4.0	
PERI 634	Clinical Conference	9.0	
PERI 654	Practice Teaching in Periodontics	4.0	
PERI 696	Scholarly Activity in Periodontics	1.0	
IMPD 533	Applied Radiology for Implant Dentistry		1.5
IMPD 561	Dental Bioengineering		2.0
IMPD 611	Introduction to Implant Dentistry		2.0
IMPD 612	Advanced Implant Dentistry		2.0
PROS 500	Prosthodontic Literature Review		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)		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		14.0
PROS 634	Diagnosis and Treatment Planning		18.0
PROS 637	Geriatric Dentistry		1.0
PROS 696	Scholarly Activity in Prosthodontics		1.0
Totals		**94.0**	**101.5**
Interdisciplinary	**Course Title**	**Periodontics**	**Prosthodontics**
GRDN 632	Basic Microsurgery Techniques	2.0	
GRDN 601	Practice Management		2.0
GRDN 623	Biomedical Science II		4.0
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0
GRDN 622	Biomedical Science I	2.0	2.0
REL_ 5__ Graduate-level Religion		3.0	3.0
Totals		**15.0**	**19.0**

Clinical	Course Title	Periodontics	Prosthodontics
PERI 725	Clinical Practice in Periodontics[1]	72.0	
PERI 726	Clinical Practice in Implant Surgery[1]	24.0	
PROS 710	Clinical Practice of Prosthodontics[1]		66.0
Totals			
Overall Totals		**109.0**	**120.5**

[1] Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

Dual Major — Periodontics, Implant Dentistry Comparison

Major	Course Title	Periodontics	Implant Dentistry
PERI 606	Modern Concepts of Periodontal Wound Healing	2.0	2.0
PERI 624	Moderate Sedation in Periodontics	4.0	4.0
PERI 524	The Periodontium	2.0	
PERI 531	Periodontal Pathology	10.0	
PERI 601	Periodontal Therapy	12.0	4.0
PERI 604	Current Periodontal and Implant Literature	18.0	
PERI 605	Implant Literature Review	4.0	
PERI 608	Dental Specialty Practice Management	2.0	
PERI 611	Introduction to Periodontics	2.0	
PERI 614	Implant Treatment Planning	24.0	
PERI 634	Clinical Conference	9.0	
PERI 654	Practice Teaching in Periodontics	4.0	
PERI 696	Scholarly Activity in Periodontics	1.0	
IMPD 505	Patient Presentation Seminar		10.0
IMPD 533	Applied Radiology for Implant Dentistry		1.5
IMPD 547	Implant Dentistry Grand Rounds		10.0
IMPD 561	Dental Bioengineering		2.0
IMPD 585	Implant Prosthodontics		10.0
IMPD 601	Literature Review in Implant Dentistry		22.0
IMPD 604	Current Literature Review in Implant Dentistry		20.0
IMPD 611	Introduction to Implant Dentistry		2.0
IMPD 612	Advanced Implant Dentistry		2.0
IMPD 631	Oral Implant Surgery		11.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry		10.0
IMPD 637	Peri-Implant Histopathology		1.0
IMPD 654	Practice Teaching in Implant Dentistry		3.0
IMPD 696	Scholarly Activity in Implant Dentistry		1.0
PROS 500	Prosthodontic Literature Review		6.0
PROS 546	Occlusion and Morphology		2.0
PROS 547	Occlusion: Principles and Instrumentation		2.0
PROS 555	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
Totals		**94.0**	**137.5**
Interdisciplinary	**Course Title**	**Periodontics**	**Implant Dentistry**
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0

GRDN 622	Biomedical Science I	2.0	2.0
GRDN 632	Basic Microsurgery Techniques	2.0	2.0
REL_ 5__ Graduate-level Religion		3.0	3.0
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery		4.0
OMFS 606	Applied Surgical Anatomy		1.0
Totals		**15.0**	**20.0**
Clinical	**Course Title**	**Periodontics**	**Implant Dentistry**
PERI 725	Clinical Practice in Periodontics[1]	72.0	
PERI 726	Clinical Practice in Implant Surgery[1]	24.0	
IMPD 725	Clinical Practice in Implant Dentistry[1]		40.0
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry[1]		4.0
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry[1]		20.0
Totals			
Overall Totals		**109.0**	**157.5**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

Dual Major — Prosthodontics, Implant Dentistry Comparison

Major	Course Title	Prosthodontics	Implant Dentistry
IMPD 533	Applied Radiology for Implant Dentistry	1.5	1.5
IMPD 561	Dental Bioengineering	2.0	2.0
IMPD 611	Introduction to Implant Dentistry	2.0	2.0
IMPD 612	Advanced Implant Dentistry	2.0	2.0
PROS 546	Occlusion and Morphology	2.0	2.0
PROS 547	Occlusion: Principles and Instrumentation	2.0	2.0
PROS 555	Removable Partial Prosthodontics	2.0	2.0
PROS 565	Complete Denture Prosthodontics	2.0	2.0
PROS 566	Advanced Complete Denture Prosthodontics	2.0	2.0
PROS 575	Fixed Partial Prosthodontics	2.0	2.0
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)	2.0	2.0
PROS 595	Maxillofacial Prosthetics	2.0	2.0
PROS 500	Prosthodontic Literature Review	22.0	6.0
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)	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 556	TMJ Function and Dysfunction	1.0	
PROS 557	Advanced Removable Partial Prosthodontics	2.0	
PROS 604	Literature Review in Implant Dentistry for Prosthodontists	14.0	
PROS 634	Diagnosis and Treatment Planning	18.0	
PROS 637	Geriatric Dentistry	1.0	
PROS 696	Scholarly Activity in Prosthodontics	1.0	
IMPD 505	Patient Presentation Seminar		10.0
IMPD 547	Implant Dentistry Grand Rounds		10.0
IMPD 585	Implant Prosthodontics		10.0
IMPD 601	Literature Review in Implant Dentistry		22.0
IMPD 604	Current Literature Review in Implant Dentistry		20.0
IMPD 631	Oral Implant Surgery		11.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry		10.0
IMPD 637	Peri-Implant Histopathology		1.0

IMPD 654	Practice Teaching in Implant Dentistry		3.0
IMPD 696	Scholarly Activity in Implant Dentistry		1.0
PERI 601	Periodontal Therapy		4.0
PERI 606	Modern Concepts of Periodontal Wound Healing		2.0
PERI 624	Moderate Sedation in Periodontics		4.0
Totals		**101.5**	**137.5**
Interdisciplinary	**Course Title**	**Prosthodontics**	**Implant Dentistry**
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0
GRDN 622	Biomedical Science I	2.0	2.0
REL_ 5__ Graduate-level Religion		3.0	3.0
GRDN 601	Practice Management	2.0	
GRDN 623	Biomedical Science II	4.0	
GRDN 632	Basic Microsurgery Techniques		2.0
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery		4.0
OMFS 606	Applied Surgical Anatomy		1.0
Totals		**19.0**	**20.0**
Clinical	**Course Title**	**Prosthodontics**	**Implant Dentistry**
PROS 710	Clinical Practice of Prosthodontics[1]	66.0	
IMPD 725	Clinical Practice in Implant Dentistry[1]		40.0
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry[1]		4.0
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry[1]		20.0
Totals			
Overall Totals		**120.5**	**157.5**

[1] Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

School of Medicine

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. For more than a century, the School of Medicine has kept pace with the rapid growth of knowledge and technology. Over 10,000 students have graduated from the school and have gone on to all corners of the earth, fulfilling the University's mission—"To make man whole."

Since 1909

Since the school's inception, the first two years of the medical school program have always been taught on the Loma Linda campus. From 1913 to the mid-1960s, however, 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 concentrated on the Loma Linda campus, beginning with the 1966-1967 school year.

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.

Doctor of Medicine degree/Oral and Maxillofacial Surgery Program 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 third 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.)

Residency programs

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, 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, interventional vascular 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.

Research centers

Basic science investigation is advanced, and patient treatment is enhanced through the ground-breaking 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 National Institutes of Health (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 NIH—and foreign medical institutions, including Nanjing Universit and the Freie University of Berlin.

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.

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.

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.

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.

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

$46,768	Full time
$23,384	Full time, per term

Fees

$3,328*	Per academic year: student services, health insurance, etc.

Supplies and instruments (estimated)

$3,200*	Per school calendar year
$900*	First-year medical equipment

* Fees subject to change

Living expenses (estimated)

Students should contact the Office of Financial Aid for current living allowance information (<finaid@llu.edu> or 909/558-4509).

On- and off-campus student housing

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

Special charges 2013-2014

$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

Programs

- Anatomy—M.S., Ph.D (p. 316).
- Biochemistry - M.S., Ph.D (p. 284)
- Biology - M.S. (p. 299), Ph.D. (p. 299)
- Biomedical Sciences - M.M.S. (p. 319)
- Earth Science - Ph.D. (p. 303)
- Environmental Sciences - B.S. (p. 305)
- Geology - B.S. (p. 308), M.S. (p. 311)
- Medical Scientist—M.D. and Ph.D. (p. 325)
- Medicine—M.D. (p. 326)
- Microbiology and Molecular Genetics - M.S., Ph.D. (p. 286)
- Natural Sciences - M.S. (p. 313)
- Pharmacology - M.S., Ph.D. (p. 289)
- Physiology - M.S., Ph.D. (p. 292)

Graduate

Mission

It is the mission of the Loma Linda University basic sciences 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.

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.

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.

Department of Basic Sciences

The Department of Basic Sciences in the School of Medicine offers graduate programs leading to the M.S. and Ph.D. degrees in four areas (biochemistry, microbiology, pharmacology, and physiology) through the Integrated Biomedical Graduate Studies program (IBGS). This program includes a common integrated first-year core curriculum that explores the biochemical, molecular, cellular, and physiological functions of living systems in a way that emphasizes analytical thinking and problem solving. During this first year, students also attend seminars and rotate through up to three research laboratories. After completing the first year of study, students select both a program and a laboratory from which they wish to obtain a degree. Advanced, discipline-specific courses are taken during the second year; and research leading to the publication of peer-reviewed articles and doctoral dissertation defense is carried out between the time a research laboratory is selected and the completion of the degree.

Chair

Penelope J. Duerksen-Hughes

Primary faculty

Danilyn M. Angeles

Wilson Aruni

Vladimar Bashkirov

Danilo Boskovic

Eileen J. Brantley

John N. Buchholz

Edouard M. Cantin

Carlos A. Casiano

Shin-Tai Chen

Valeri Filippov

Maria Filippova

Ronald R. Fiscus

Hansel M. Fletcher

Ravi Goyal

Daila S. Gridley

David A. Hessinger

Salma Khan

Paul R. Krafft

William H. Langridge

Tim Lekic

Daisy D. De Leon

Marino A. De Leon

Charles A. Ducsay

Penelope J. Duerksen-Hughes

Lawrence D. Longo

Xiao W. Mao

Eugenica I. Mata-Greenwood

Jonathan W. Neidigh

Gregory A. Nelson

Stephen A. Nyirady

William J. Pearce

Michael J. Pecaut

Christopher C. Perry

Gordon G. Power

Hongyu Qiu

John J. Rossi

Keith E. Schubert

Ihsan Solarouglu

Ubaldo A. Soto-Wegner

Lawrence C. Sowers

Richard S. Sun

Jiping Tang

Julia J. Unternaehrer-Hamm

Roman Vlkolinsky

Nathan R. Wall

Charles Wang

Kylie J. Watts

R. Bruce Wilcox

Christopher G. Wilson

Sean M. Wilson

David L. Wolf

Daliao Xiao

Zhice Xu

Steven M. Yellon

John H. Zhang

Lubo Zhang

Anthony J. Zuccarelli

General regulations

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 includeRELT 617 Seminar in Religion and the Sciences; as well as RELE 525 Ethics for Scientists and RELR 588 Personal and Family Wholeness. A course in biblical studies (RELT 559 New Testament Thought, RELT 560 Jesus the Revealer: The Message of the Gospel of John, RELT 564 Apostle of Hope: The Life, Letters, and Legacy of Paul, or RELT 565 Vision of Healing: The Message of the Book of Revelation) 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.

Programs

- Biochemistry — M.S. (p. 285), Ph.D. (p. 285) (Comparison (p. 286))
- Microbiology and Molecular Genetics — M.S. (p. 287), Ph.D. (p. 288) (Comparison (p. 289))
- Pharmacology — M.S. (p. 290), Ph.D. (p. 291) (Comparison (p. 292))
- Physiology — M.S. (p. 293), Ph.D. (p. 294) (Comparison (p. 295))

Biochemistry — M.S., Ph.D.

Program coordinator
Penelope Duerksen-Hughes

The School of Medicine's Division of Biochemistry offers curricula leading to the Master of Science and Doctor of Philosophy 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.

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.

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 biochemistry.
3. Students will interpret the current literature in biochemistry.
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.

Admissions

In addition to Loma Linda University (p. 24) application requirements, the applicant must also complete the following prerequisites:

- a bachelor's degree from an accredited U.S. college or the equivalent from an international university.
- results of the general test of the Graduate Record Examination (GRE)
- a full year of each of the following undergraduate courses:
  - general biology
  - general chemistry
  - organic chemistry
  - general physics
- Recommended
  - upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended.
  - calculus

The program reserves the right to decide on the equivalence of courses presented by the applicant.

M.S. requirements

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.

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELT 617	Seminar in Religion and the Sciences	3
Degree completion options		9
Course work track:		
BCHM___	Graduate Biochemistry Elective (9 units)	
Research track:		
BCHM___	Graduate biochemistry elective (2 units)	
IBGS 605	Integrative Biology Presentation Seminar (1 unit)	
BCHM 697	Research (6 units)	
Total Units		**45**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Noncourse requirements

Course work track: a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

Research track: pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

Normal time to complete the program

2 year— based on full-time enrollment; part time permitted

Comparison

See the comparison (p. 286) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Ph.D. requirements

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, 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		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 503	Biomedical Grant Writing	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Major		
BCHM___	Graduate Biochemistry Elective	12
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar (1.0)	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELE 525	Ethics for Scientists	3
RELR 549	Personal and Family Wholeness	3
RELT 617	Seminar in Religion and the Sciences	3
Research/Dissertation or Thesis		
BCHM 697	Research (1.0-10.0)	15
IBGS 696	Research Rotations (1.0)	2
Total Units		**75**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Noncourse requirements

- pass both written and oral comprehensive examinations in order to advance to candidacy.
- successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree.

Normal time to complete the program

4 years — full-time enrollment, part-time permitted

Comparison

See the comparison (p. 286) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Biochemistry — M.S., Ph.D. Comparison

Basic Science Core	Course Title	MS Coursework	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 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
IBGS 503	Biomedical Grant Writing			2.0
Totals		**32.0**	**32.0**	**34.0**
Major	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
BCHM ___	Graduate Biochemistry Elective (Elective courses in biochemistry)			12.0
BCHM ___	Graduate Biochemistry Elective (Elective courses in biochemistry)	9.0		
BCHM ___	Graduate Biochemistry Elective (Elective courses in biochemistry)		2.0	
Totals		**9.0**	**2.0**	**12.0**
Seminars	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar[1]	0.0	0.0	0.0
IBGS 605	Integrative Biology Presentation Seminar		1.0	2.0
Totals		**1.0**	**2.0**	**3.0**
Religion	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
Totals		**3.0**	**3.0**	**9.0**
Research/ Dissertation or Thesis	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
BCHM 697	Research		6.0	15.0
IBGS 696	Research Rotations			2.0
Totals			**6.0**	**17.0**
Overall Totals		**45.0**	**45.0**	**75.0**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Microbiology and Molecular Genetics — M.S., Ph.D.

Program coordinator
Hansel M. Fletcher

The School of Medicine's Division of Microbiology and Molecular Genetics offers curricula leading to the Master of Science and Doctor of Philosophy 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.

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.

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.

Admissions

In addition to Loma Linda University (p. 24) application requirements, the applicant must also complete the following prerequisites:

- a bachelor's degree from an accredited U.S. college or the equivalent from an international university.
- general text of the Graduate Record Examination (GRE)
- International applicants must have their transcripts evaluated by an accredited agency for equivalency to a U.S. degree.
- a full year of each of the following undergraduate courses:
  - general biology
  - general chemistry
  - organic chemistry
  - general physics.
- Recommended:
  - Calculus
  - Upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended.

The program reserves the right to decide on the equivalence of courses presented by the applicant.

M.S. requirements

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.

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELT 617	Seminar in Religion and the Sciences	3
Degree completion options		9
Course work track:		
MICR___	Graduate Microbiology Elective (9 units)	
Research track:		
IBGS 605	Integrative Biology Presentation Seminar (1 unit)	
MICR 697	Research (6 units)	
MICR___	Graduate Microbiology Elective (2 units)	
Total Units		**45**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation

Noncourse requirements

Course work track: a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

Research track: pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

Normal time to complete the program

2 years — based on full-time enrollment; part time permitted

Comparison

See the comparison (p. 289) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Ph.D. requirements

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. 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		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 503	Biomedical Grant Writing	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
MICR___	Graduate Micobiology Elective [1]	9
MICR 530	Immunology	3
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar [2]	0
Religion		
RELE 525	Ethics for Scientists	3
RELR 549	Personal and Family Wholeness	3
RELT 617	Seminar in Religion and the Sciences	3
Research/Dissertation or Thesis		
IBGS 696	Research Rotations [3]	2
MICR 697	Research (1.0-7.0) [3]	15
Total Units		**75**

1. Must include at least 6 units in a didactic, literature-based course
2. Registration and attendance required every quarter in residence, but units do not count toward total required for graduation
3. Repeated registrations required to fulfill total units.

Noncourse requirements

- pass both written and oral comprehensive examinations in order to advance to candidacy.
- successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree.

Normal time to complete the program

4 years — based on full-time enrollment; part-time permitted

Comparison

See the comparison (p. 289) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Microbiology and Molecular Genetics — M.S., Ph.D. Comparison

Basic Science Core	Course Title	MS Coursework	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 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
IBGS 503	Biomedical Grant Writing			2.0
Totals		**32.0**	**32.0**	**34.0**
Major	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
MICR ___ Graduate Microbiology Elective[1]				9.0
MICR 530	Immunology			4.0
MICR ___ Graduate Microbiology Elective[1]		9.0		
MICR ___ Graduate Microbiology Elective[1]			2.0	
Totals		**9.0**	**2.0**	**13.0**
Seminars	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar[2]	0.0	0.0	0.0
IBGS 605	Integrative Biology Presentation Seminar		1.0	2.0
Totals		**1.0**	**2.0**	**3.0**
Religion	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
Totals		**3.0**	**3.0**	**9.0**
Research/ Dissertation or Thesis	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
IBGS 696	Research Rotations			2.0
MICR 697	Research		6.0	15.0
Totals			**6.0**	**17.0**
Overall Totals		**45.0**	**45.0**	**76.0**

1 Must include at least 6 units in a didactic, literature-based course

2 Registration and attendance required every quarter in residence, but units do not count toward total required for graduation

Pharmacology — M.S., Ph.D.

Program coordinator
John Buchholz

The School of Medicine's Division of Pharmacology offers curricula leading to the Master of Science and Doctor of Philosophy 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.

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.

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.

Admissions

In addition to Loma Linda University (p. 24) application requirements, the applicant must also complete the following prerequisites:

- a bachelor's degree from an accredited U.S. college or the equivalent from an international university.
- results of the general test of the Graduate Record Examination (GRE)
- a full year of each of the following undergraduate courses:
  - general biology
  - general chemistry
  - organic chemistry
  - general physics
- Recommended
  - calculus
  - upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended.

The program reserves the right to decide on the equivalence of courses presented by the applicant.

M.S. requirements

Two options, a research track and a course work track, are available. A minimum of 47 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..

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
PHRM 584	Drug Metabolism and Biochemical Pharmacology	4
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELT 617	Seminar in Religion and the Sciences	3
Degree completion options		7
Course work track:		
PHRM 554	Neuropharmacology	
PHRM 564	Cardiovascular and Renal Pharmacology	
Research track:		
IBGS 605	Integrative Biology Presentation Seminar (1 unit)	
PHRM 697	Research (6 units) [2]	
Total Units		**47**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

[2] Multiple registrations required to fulfill total unit requirement.

Noncourse requirements

Course work track: a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

Research track: pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

Normal time to complete the program

2 years — based on full-time enrollment; part time permitted

Comparison

See the comparison (p. 292) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Ph.D. requirements

For the Ph.D. degree, students must complete a minimum of 74 units, as detailed in the table below, and 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.

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 503	Biomedical Grant Writing	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Major		
PHRM 554	Neuropharmacology	4
PHRM 564	Cardiovascular and Renal Pharmacology	3
PHRM 584	Drug Metabolism and Biochemical Pharmacology	4
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar [2]	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELE 525	Ethics for Scientists	3
RELR 549	Personal and Family Wholeness	3
RELT 617	Seminar in Religion and the Sciences	3
Research/Dissertation or Thesis		
IBGS 696	Research Rotations [2]	2
PHRM 697	Research [2]	15
Total Units		**74**

1 Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

2 Multiple registrations required to fulfill total unit requirement.

Noncourse requirements

- pass both written and oral comprehensive examinations in order to advance to candidacy.
- successfully defend the dissertation before their guidance committee prior to being awarded the Ph.D. degree.

Normal time to complete the program

4 years — based on full-time enrollment; part-time permitted

Comparison

See the comparison (p. 292) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Pharmacology — M.S., Ph.D. Comparison

Basic Science Core	Course Title	MS Coursework	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 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
IBGS 503	Biomedical Grant Writing			2.0
Totals		**32.0**	**32.0**	**34.0**
Major	**Course Title**	**MS Coursework**	**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	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar[1]	0.0	0.0	0.0
IBGS 605	Integrative Biology Presentation Seminar			2.0
Totals		**1.0**	**1.0**	**3.0**
Religion	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
Totals		**3.0**	**3.0**	**9.0**
Research/ Dissertation or Thesis	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
IBGS 696	Research Rotations			2.0
PHRM 697	Research			15.0
Totals				**17.0**
Overall Totals		**47.0**	**47.0**	**74.0**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Physiology — M.S., Ph.D.

Program coordinator
John H. Zhang

The School of Medicine's Division of Physiology offers curricula leading to the Master of Science and Doctor of Philosophy degrees. The core curriculum provides a broad background in physiology. In this Christian environment in which students pursue study oriented to their specific interests, individual attention is assured by maintenance of a small student/faculty ratio.

The research-oriented curriculum leading to the Ph.D. degree is designed to provide students with the information and tools needed to succeed as independent lifelong learners and investigators in careers that include independent research and teaching in university, clinical, biotechnological, or government environments. The program offers cutting-edge opportunities in areas of research excellence that are supported by nationally competitive extramural funding. These areas include perinatal biology, health disparities, neurosciences, and cardiovascular science. Doctoral degree students are expected to develop creativity and independence, in addition to technical skills.

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.

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.

Admissions

In addition to Loma Linda University (p. 24) application requirements, the applicant must also complete the following prerequisites:

- a bachelor's degree from an accredited U.S. college or the equivalent from an international university.
- results of the general test of the Graduate Record Examination (GRE)
- a full year of each of the following undergraduate courses:
  - general biology
  - general chemistry
  - organic chemistry
  - general physics
- Recommended
  - calculus
  - upper division biology (such as cell and molecular biology) and chemistry (such as biochemistry) are strongly recommended.

The program reserves the right to decide on the equivalence of courses presented by the applicant.

M.S. requirements

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.

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELT 617	Seminar in Religion and the Sciences	3
Degree completion options		9
Course work track:		
PHSL___	Graduate Physiology Elective (and/or statistics courses) (9 units)	
Research track:		
IBGS 605	Integrative Biology Presentation Seminar (1 unit)	
PHSL 697	Research (6 units) [2]	
PHSL___	Graduate Physiology Elective (and/or statistics courses) (2 units)	
Total Units		**45**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

[2] Multiple registrations required to fulfill total units required.

Noncourse requirements

Course work track: a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

Research track: pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

Normal time to complete the program

2 years — based on full-time enrollment; part time permitted

Comparison

See the comparison (p. 295) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Ph.D. requirements

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		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 503	Biomedical Grant Writing	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Major		
PHSL___	Graduate Physiology Elective (and/or statistics courses)	10
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar (1.0)	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELE 525	Ethics for Scientists	3
RELR 549	Personal and Family Wholeness	3
RELT 617	Seminar in Religion and the Sciences	3
Research/Dissertation or Thesis		
IBGS 696	Research Rotations (1.0)	2
PHSL 697	Research (1.0-8.0)	15
Total Units		**73**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Normal time to complete the program

4 years — based on full-time enrollment; part-time permitted

Comparison

See the comparison (p. 295) of the M.S. Course work, M.S. Research and Ph.D. tracks of this program.

Physiology — M.S., Ph.D. Comparison

Basic Science Core	Course Title	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 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
IBGS 503	Biomedical Grant Writing			2.0
Totals		**32.0**	**32.0**	**34.0**
Major	**Course Title**	**MS Course Work**	**MS Research**	**PhD**
PHSL ___	Graduate Physiology Elective and/or statistics course			10.0
PHSL ___	Graduate Physiology Elective and/or statistics course			
PHSL ___	Graduate Physiology Elective and/or statistics course		2.0	
Totals			**2.0**	**10.0**
Seminars	**Course Title**	**MS Course Work**	**MS Research**	**PhD**
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar[1]	0.0	0.0	0.0
IBGS 605	Integrative Biology Presentation Seminar		1.0	2.0
Totals		**1.0**	**2.0**	**3.0**
Religion	**Course Title**	**MS Course Work**	**MS Research**	**PhD**
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
Totals		**3.0**	**3.0**	**9.0**
Research/ Dissertation or Thesis	**Course Title**	**MS Course Work**	**MS Research**	**PhD**
IBGS 696	Research Rotations			2.0
PHSL 697	Research		6.0	15.0
Totals			**6.0**	**17.0**
Overall Totals		**36.0**	**45.0**	**73.0**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Department of Earth and Biological Sciences

Graduate degree programs

Master of Science and Doctor of Philosophy

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.

Advisors for Doctor of Philosophy degree candidates are required to have demonstrated scholarship productivity in their chosen disciplines. Each program maintains a list of qualified doctoral degree mentors.

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 degree program until the prerequisites are completed (at Loma Linda University or elsewhere) with acceptable grades. 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

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. The time allowed from admission to conferring of the master's degree may not exceed five years. Time allowed for the Ph.D. degree is seven years. Extension may be considered upon recommendation of the guidance committee and endorsed by the dean.

Course credit allowed toward the master's degree is nullified seven years from the required date of course completion. For the Ph.D. degree, course credit is nullified eight years from the required date of course completion. Nullified courses may be revalidated through reading, conferences, written reports, or examination— to assure currency in the content.

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 master's or doctoral degree. This average is to be computed separately for courses and research. At the discretion of the guidance committee, courses in which a student earns a grade between C (2.0) and B (3.0) may or may not apply toward the degree. An average of B is required for transfer credits and on all work taken at this University, computed separately. In some cases, programs have specified higher or additional requirements. For proper guidance, students should consult with their program coordinators.

Professional performance probation

Graduate programs in the Department of Earth and Biological Sciences 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

Master's degrees: 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 in which the program is housed. The student receives a copy of the committee's recommendation.

Doctoral degree: 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 completed the majority of units required beyond the master's degree or its equivalent.

Research competence

Student skills required in research, language, investigation, and computation are specified in each program description in this CATALOG.

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.

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 in which the program is housed or designation of regular graduate standing does not constitute admission to candidacy for a graduate degree. After achieving regular status, admission to candidacy is initiated by a written petition (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 in which the program is housed 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. The student's petition for candidacy for the Doctor of Philosophy degree will also include confirmation that comprehensive written and oral examinations have been passed.

Students are usually advanced to candidacy during the third quarter after entering their course of study toward a master's degree.

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

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); .and doctoral students are required to take at least three 3-unit religion courses (numbered between 500 and 600). Students should check with their specific program coordinators for guidelines.

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 retyping of large sections of manuscript. The last day for submitting copies to the appropriate office in final approved form is published in the events calendar (available at the office of the academic dean of the school housing the program).

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.

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 of the school in which the program is housed, with recommendations about the student's future relation to the school. The student receives a copy of the committee's recommendation.

Dissertation

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, to be paid during registration each quarter. A 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.

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. A year of residence is defined as three quarters of academic work. The master's degree candidate must complete one year of residency. Students may be advised to pursue studies for limited periods at special facilities not available at Loma Linda University. Such time away may be considered residence if the arrangement is approved in advance by the dean of the school offering the program.

Programs in the Department of Earth and Biological Sciences at the doctoral level require a minimum of two years of residency, during which the student devotes 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; and 36 or more clock hours per week comprise full-time research.

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. The maximum number of transfer credits toward a master's degree or doctoral degree may not exceed 20 percent of the minimum credits required for the degree.

Transfer credits may reduce the minimum requirements of credit units for a degree earned at Loma Linda University; however, residency requirements are not to be altered. Transfer credits are normally not applicable if the course work was completed more than seven years prior to registration at Loma Linda University. Transfer credit courses must be equivalent to courses appropriate to degree requirements as specified in this CATALOG of the 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 achieve a 3.0 for the next quarter or who fail to achieve an overall G.P.A. of 3.0 after two quarters may be dismissed from the school offering the program.

Financial information

Schedule of charges (2014-2015)

Tuition

$715	Per unit, graduate credit
$290	Per unit, undergraduate credit; $3,480 per quarter
$350	Per unit, audit, graduate

Special charges*

$60	Application fee
$733	Enrollment fee per quarter
$60	Fee for credit by examination
$30	Per unit fee to have credit earned by examination appear on transcript

* Programs may have additional fees.

Chair

Suzanne E. Phillips

Primary faculty

Leonard R. Brand

H. Paul Buchheim

Ronald L. Carter

Stephen G. Dunbar

Ricardo A. Escobar III

William K. Hayes

Kevin E. Nick

Suzanne E. Phillips

Secondary faculty

V. Leroy Leggitt

Samuel Soret

Adjunct faculty

Gordon J. Atkins

Stanley M. Awramik

Roberto E. Biaggi

Douglas R. Britton

Benjamin Clausen

Raul Esperante

L. James Gibson, Jr.

H. Thomas Goodwin

Ronald Nalin

Timothy G. Standish

Admissions

In addition to Loma Linda University admission requirements (https://nextcatalog.llu.edu/about-university/admission-policies-information/#admissionrequirementstext), the applicant must also complete the following requirements:

Application procedure

1. The application instructions, available on the Web at <llu.edu/central/apply>, allow students to apply online and begin an application, as indicated in the general University section.
2. A personal interview is often desirable and is recommended by the Department of Earth and Biological Sciences. The interview should

be arranged with the coordinator of either the Geology Program or the Biology Program.

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 in which the program is housed takes official action and notifies the applicant. The applicant must respond affirmatively before becoming eligible to register for programs within the Department of Earth and Biological Sciences
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. New students are required to pass a background check before they register for classes.

From master's to Ph.D. 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 in which the program is housed. If the master's degree is sought, the student will be expected to complete that degree before starting any 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.

Undergraduate programs

Admission requirements

High school and college subject requirements for each program are outlined in the respective programs. Students are required to provide 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.

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 unless otherwise specified in specific program requirements; C- grades are not acceptable for transfer. 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.

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 graduate programs in the Department of Earth and Biological Sciences. 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; and 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 during the junior and senior years are superior or there is other evidence of capability for completing the program.

Graduate Record Examination

Scores on the general test of the Graduate Record Examination (GRE) are required for 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 <http://www.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

- Biology — M.S. (p. 299), Ph.D. (p. 299)
- Earth Science — Ph.D. (p. 303)
- Environmental Sciences — B.S. (p. 305)
- Geology — B.S. (p. 308), M.S. (p. 311)
- Natural Sciences — M.S. (p. 313)

Biology — M.S., Ph.D.

The Biology Program leading to the Master of Science and Doctor of Philosophy degrees is offered by the Department of Earth and Biological Sciences. 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 that will facilitate the biologist's attainment of the highest potential in scholarship, research, teaching, and interdisciplinary service learning.
- Challenge graduate students to consider the relationships among science, faith, and societal responsibility.

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.

Programs

- Biology — M.S. (p. 300), Ph.D. (p. 301)

Biology — M.S.

Program director
Stephen G. Dunbar

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 of the school in which this program is housed.

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 early in the third quarter of study. A comprehensive plan for completion of the degree will be approved at this time.

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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

- Expected undergraduate preparation includes a bachelor's degree with a biology major or equivalent from an accredited college or university, including the following corequisite courses:
  - 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.
- An undergraduate G.P.A. of at least 3.0 is expected.
- an acceptable score on the general Graduate Record Examination (GRE) (the subject GRE is not required).

It is also recommended that applicants contact the department at <ebs@llu.edu>.

Application time

Applications are accepted at any time. Review of applications begin in February for Autumn Quarter admission. Research assistantships are competitively awarded.

Program requirements

A total of 48 units of courses and research is required, including at least 36 at or above the 500 level. See below for a list of courses.

All values below are in quarter units

Required		
Additional courses beyond those listed below will be chosen in consultation with the student's advisor		
BIOL 545	Genetics and Speciation	4
BIOL 558	Philosophy of Science [1]	4
BIOL 607	Seminar in Biology [2]	0
BIOL 616	Research and Experimental Design	2
BIOL 617	Proposal Writing and Grantsmanship	2
Select course(s) from each of the following areas		
Biological systems		3-4
BCHM 504	Introduction to Biochemistry GS	
BCHM 508	Principles of Biochemistry	
BCHM 534	Techniques of Biochemistry	
BIOL 517	Ecological Physiology	
BIOL 547	Molecular Biosystematics	
BIOL 548	Molecular Ecology	

BIOL 555	Molecular Genetics	
MICR 540	Physiology and Molecular Genetics of Microbes	
MICR 570	Mechanisms of Microbial Pathogenesis	
Ecology		3-4
BIOL 444	Paleobotany	
BIOL 505	Marine Biology	
BIOL 515	Biogeography	
BIOL 539	Behavioral Ecology	
BIOL 546	Techniques in Vertebrate Ecology	
BIOL 549	Biodiversity and Conservation	
Organismal		3-4
BIOL 409	Mammalogy	
BIOL 426	Invertebrate Paleontology	
BIOL 427	Vertebrate Paleontology	
BIOL 504	Biology of Marine Invertebrates	
BIOL 537	Advances in Sociobiology	
BIOL 539	Behavioral Ecology	
GEOL 444	Paleobotany	
GEOL 545	Taphonomy	
Religion		
REL_5__	Graduate-level Religion	3
Electives		
Additional courses required by the student's guidance committee to complete the total units required for the degree [3]		17-20
ANAT 516	Neuroscience GS	
ANAT 542	Cell Structure and Function GS	
BCHM 504	Introduction to Biochemistry GS	
BCHM 508	Principles of Biochemistry	
BCHM 515	Introduction to Bioinformatics	
Research		
4 units minimum; will be graded each quarter and can be repeated for additional credit		
BIOL 698	Thesis Research	4
Total Units		**48**

1. BIOL 559 Philosophy of Science and Origins required for students who have taken BIOL 475 Philosophy of Science and Origins or equivalent
2. Each quarter in residence; 0.5 unit per quarter
3. In addition to this list, courses may also be chosen from unused courses listed above for biological systems, ecology, and organismal biology. When choosing elective, keep in mind that a minimum of 44 units for the M.S. degree must be numbered 500 or above.

Noncourse requirements

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).

Defense of thesis

An oral presentation and defense of the thesis, including final oral examination on the student's field of study, are required.

Grade requirement for graduation

All courses applied toward a graduate degree must have a grade of B or higher.

Normal time to complete the program

2 years based on full-time enrollment; part time permitted

Biology — Ph.D.

Program director
Stephen G. Dunbar

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.

General requirements

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 early in the Spring Quarter.

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.

Registration and tuition after normative time

The program design is for Ph.D. degree 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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

- Expected undergraduate preparation includes a bachelor's degree with a biology major (M.S. degree recommended) from an accredited college or university.
- an acceptable score on the general GRE examination (the subject GRE is not required).
- Recommended G.P.A. in a previous M.S. degree program is at least 3.5.
- Complete the following corequisite courses:
  - 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.

Application

Applications are accepted at any time. Review of applications for Autumn Quarter begins in February for Autumn Quarter admission. Research assistantships are competitively awarded.

It is also recommended that applicants contact the department at <ebs@llu.edu>.

Program requirements

A total of 72 units of courses and research beyond the master's level is 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 is required.

All values below are in quarter units.

Required		
Additional courses beyond those listed below will be chosen in consultation with the student's advisor		
BIOL 545	Genetics and Speciation	4
BIOL 558	Philosophy of Science [1]	4
BIOL 607	Seminar in Biology [2]	0
BIOL 616	Research and Experimental Design	2
BIOL 617	Proposal Writing and Grantsmanship	2
Select course(s) from each of the following areas		
Biological systems		6-8
BCHM 504	Introduction to Biochemistry GS	
BCHM 508	Principles of Biochemistry	
BCHM 534	Techniques of Biochemistry	
BIOL 517	Ecological Physiology	
BIOL 547	Molecular Biosystematics	
BIOL 548	Molecular Ecology	
BIOL 555	Molecular Genetics	
MICR 540	Physiology and Molecular Genetics of Microbes	
MICR 570	Mechanisms of Microbial Pathogenesis	
Ecology		6-8
BIOL 444	Paleobotany	
BIOL 505	Marine Biology	
BIOL 515	Biogeography	
BIOL 539	Behavioral Ecology	
BIOL 546	Techniques in Vertebrate Ecology	
BIOL 549	Biodiversity and Conservation	
Organismal biology		6-8
BIOL 409	Mammalogy	
BIOL 426	Invertebrate Paleontology	
BIOL 427	Vertebrate Paleontology	
BIOL 504	Biology of Marine Invertebrates	
BIOL 537	Advances in Sociobiology	
BIOL 539	Behavioral Ecology	
GEOL 545	Taphonomy	
Religion		
Select one course with the RELT prefix:		3
RELT 527	The Bible and Ecology	
RELT 558	Old Testament Thought	
RELT 559	New Testament Thought	
RELT 560	Jesus the Revealer: The Message of the Gospel of John	
RELT 564	Apostle of Hope: The Life, Letters, and Legacy of Paul	
RELT 565	Vision of Healing: The Message of the Book of Revelation	
RELE_5__	Graduate-level Ethics	3
RELR_5__	Graduate-level Relational	3
Electives		
Additional courses required by the student's guidance committee to complete the total units required for the degree [3]		31-37
ANAT 516	Neuroscience GS	
ANAT 542	Cell Structure and Function GS	
BCHM 504	Introduction to Biochemistry GS	
BCHM 508	Principles of Biochemistry	
BCHM 515	Introduction to Bioinformatics	
Research		
4 units minimum; will be graded each quarter and can be repeated for additional credit		

BIOL 699	Dissertation Research (1.0-8.0)	4
Total Units		**72**

1 BIOL 559 Philosophy of Science and Origins required for students who have taken BIOL 475 Philosophy of Science and Origins or equivalent

2 each quarter in residence; 0.5 unit per quarter

3 In addition to this list, courses may also be chosen from unused courses listed above for biological systems, ecology, and organismal biology. When choosing elective, keep in mind that a minimum of 60 units for the Ph.D. degree must be numbered 500 or above.

Noncourse requirements

Comprehensive examination

An oral comprehensive examination is given in connection with a written and oral presentation of an initial research project approved by the student's guidance committee.

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, and to conduct original research. The oral examination covers the student's field of study, as well as defending the research. The comprehensive exam will take place during the Autumn Quarter of the second year, after the first summer of research.

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.

Defense of dissertation

An oral dissertation presentation and defense are required.

Grade requirement for graduation

All courses applied toward a graduate degree must have a grade of B or higher.

Normal time to complete the program

5 years based on full-time enrollment; part time permitted

Earth Science — Ph.D.

Program director
H. Paul Buchheim

The 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, taphonomy, and microbial carbonates. Research in paleontology can also be pursued through the Master of Science degree in geology curriculum and the Doctor of Philosophy degree in biology curriculum.

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
- paleomagnetics and sedimentology geographic information analysis and technology
- igneous petrology, nuclear physics, and geophysics
- vertebrate paleontology and biogeography
- microbial cargonates

Objectives

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 that will facilitate the earth scientist's attainment of the 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 in which this program is housed.

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 each quarter without a tuition waiver 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.

Seminar attendance requirements

All graduate students in residence must register for and attend GEOL 607 Seminar in Geology seminars 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.

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.

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.

Professional development

Ph.D. degree students are expected to publish papers, present papers at scientific meetings, and submit research grant proposals.

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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

- achieve an acceptable score on the general GRE examination (the subject GRE is not required).
- minimum required G.P.A. in a previous M.S. degree program is at least 3.0.
- Expected undergraduate preparation includes:
  - two quarters of college mathematics (including calculus)
  - general physics with laboratory (one year)
  - general chemistry with laboratory (one year)
  - statistics (one course)
  - undergraduate geology courses (see corequisites listed below)

Some of these courses may be taken during residence at Loma Linda University, with approval of the admissions committee.

Students may also contact the department at <ebs@llu.edu>.

Application time

Applications are accepted at any time. Review of applications begins in February for Autumn Quarter admission. Research assistantships are competively awarded.

Program requirements

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:

(Advanced standing may be granted toward these requirements)

Corequisites		
May be taken during the program in addition to the units required for the degree (advanced standing may be granted for equivalent courses)		
GEOL 204	Physical Geology	
GEOL 316	Mineralogy	
GEOL 317	Igneous and Metamorphic Petrology	
GEOL 416	Sedimentology and Stratigraphy	
GEOL 424	Structural Geology	
GEOL 431	Geochemistry	
GEOL 443	Historical Geology	
GEOL 456	Field Methods of Geologic Mapping	
Core		
GEOL 556	Paleoenvironments	3
GEOL 557	Paleoenvironments Field Trip	1
GEOL 607	Seminar in Geology [1]	—
GEOL 617	Proposal Writing and Grantsmanship	2
One course required: GEOL 558 required except for students who have taken GEOL 475 or equivalent		4
GEOL 558	Philosophy of Science	
GEOL 559	Philosophy of Science and Origins	
During the undergraduate or graduate program		
GEOL 431	Geochemistry (Required)	4
Select one GIS course of the following:		2-3
HGIS 521	Cartography and Map Design	
HGIS 522	Principles of Geographic Information Systems and Science	
HGIS 524	GIS Software Applications and Methods	
HGIS 535	Integration of Geospatial Data in GIS	
HGIS 536	Spatial Analytic Techniques and GIS	
Select two paleontology courses of the following:		7-8
BIOL 426	Invertebrate Paleontology	
BIOL 427	Vertebrate Paleontology	
BIOL 444	Paleobotany	
GEOL 525	Paleopalynology	
GEOL 545	Taphonomy	
Select one course to be approved by PhD committee of the following:		3-4
STAT 509	General Statistics	
STAT 525	Applied Multivariate Analysis	
Religion		

RELE_5__	Graduate-level Ethics	3
RELR_5__	Graduate-level Relational	3
Select one course with the RELT prefix of the following:		3
RELT 527	The Bible and Ecology	
RELT 558	Old Testament Thought	
RELT 559	New Testament Thought	
RELT 560	Jesus the Revealer: The Message of the Gospel of John	
RELT 564	Apostle of Hope: The Life, Letters, and Legacy of Paul	
RELT 565	Vision of Healing: The Message of the Book of Revelation	
Electives		
Additional courses required by the student's guidance committee to complete total required units		18-69
Research		
4 units minimum; will be graded each quarter and can be repeated for additional credit		
GEOL 699	Dissertation Research (4 minimum)	4
Total Units		**72**

[1] Registration is required for each quarter in residence, maximum units counted toward the degree total is 5

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.

Noncourse requirements

Grade requirement for graduation

All courses applied toward the Ph.D. must receive a grade of at least a B.

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 and the comprehensive examination.
5. Being recommended by the program faculty (should be completed by the end of the third quarter of study).

Comprehensive examination

An oral comprehensive examination is given in connection with a written and oral presentation of an initial research project, approved by the student's guidance committee.

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 and to conduct original research. The oral examination covers the student's field of study, as well as defense of the research.

Defense of dissertation

An oral presentation and defense of the thesis, including final oral examination on the student's field of study, are required.

Normal time to complete the program

5 years based on full-time enrollment; part time permitted

Environmental Sciences — B.S.

Program director
Ricardo A. Escobar III

The Department of Earth and Biological Sciences (EBS) offers a program leading to the 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.

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 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 their choice early in their studies 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 ENVS 487 Internship in Environmental Sciences. With the supervision of a faculty advisor, students will develop an academic component of the internship and will be permitted to earn up to eight 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 the 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 two units of undergraduate research, conduct original research under a faculty member's direction, submit a written undergraduate thesis, and give a public oral presentation of his/her research.

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 grant 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.

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.: $290/unit; 12-18 units—$3,480 per quarter.

1. Academic scholarships
    a. Scholarships based on test results
        i 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.
        ii Scholastic Aptitude Test (SAT)
            1. National Merit Finalist Scholarship covers 100 percent tuition.
            2. National Merit Semifinalist Scholarship covers 34 percent tuition
            3. 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 largest 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, as well as a G.P.A. scholarship, the scholarship with the largest 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.

Admissions

The student in the B.S. degree in 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. 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.

In addition to Loma Linda University admissions requirements (p. 24), the applicant must also complete the following requirements:

- have a 2.5 G.P.A.
- three letters of recommendation from faculty members at the institutions previously attended.
- course prerequisites listed below

Course prerequisites

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 units 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 (43 quarter units)

Natural Sciences (31 units)

- College algebra (4 units)
- Statistics (4 units) offered at LLU
- Two of the following full-year sequences:
  - General biology with laboratory (12 units)
  - General chemistry with laboratory (12 units)
  - General physics with laboratory (12 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. For total unit requirements for graduation, see LLU General Education Requirements (p. 28).

Please note: Grades of C- and below are not accepted for credit.

Program requirements

Required core courses		
BIOL 449	Biodiversity and Conservation	3
ENVH 414	Introduction to Environmental Health	3
ENVS 401	Earth System Science and Global Change	4
ENVS 455	Environmental Law and Regulation	4
ENVS 485	Seminar in Environmental Sciences [1]	3
GEOL 475	Philosophy of Science and Origins	4
HGIS 422	Principles of Geographic Information Systems	4
HGIS 424	Desktop GIS Software Applications	4
HGIS 434	Advanced GIS Software Applications	3
Concentration		
Select one concentration (see below)		12
Required environmental sciences electives		
Select from any of the environmental sciences concentration areas or the approved ENVS electives. A minimum of one course from each non-concentration area is required.		20
Religion		
REL_ 4__	Upper-division Religion [1]	6-10
Select one course of the following:		2-3
RELT 406	Adventist Beliefs and Life	
RELT 423	Loma Linda Perspectives	
RELT 436	Adventist Heritage and Health	
RELT 437	Current Issues in Adventism	
General electives		
Any undergraduate courses taught at Loma Linda University or other regionally accredited college to meet the 192-unit total requirement		
____	Elective	0-22
Total Units		**96**

[1] Total units required will be prorated based on total program units completed at LLU and other SDA colleges/universities.

Concentrations

Conservation biology and biodiversity

One year each of general biology and general chemistry are required for this concentration.

This concentration is suitable for students wishing to empirically analyze the health of an ecosystem, including population and distribution of plants and animals and environmental degradation and its causes, with the goal of proposing methods of improving the health of the ecosystem. Graduates in this track normally work closely with government, conservation agencies, and industry to develop land and water management plans and educate the public about threats to the health of ecosystems. This concentration is also appropriate as background for graduate study in such disciplines as biology, ecology, forestry, and environmental health.

BIOL 406	Marine Biology	
BIOL 409	Mammalogy	
BIOL 414	Biology of Marine Invertebrates	
BIOL 415	Ecology	
BIOL 428	Genetics and Speciation	
BIOL 437	Animal Behavior	
BIOL 439	Behavioral Ecology	
BIOL 456	Techniques in Vertebrate Ecology	
BIOL 495	Undergraduate Research	
Total Units		**0**

Environmental geology

One year of general chemistry and general physics is required for this concentration.

This track will prepare students to objectively study geologic information and apply it to contemporary environmental problems such as pollution, waste management, resource extraction, natural hazards, and human health. For example, an environmental geologist might evaluate the risk and damage potential from natural hazards such as floods, landslides, volcanoes, or earthquakes. They might be involved in a land-use planning process that assesses the impact a sanitary landfill would have on groundwater. This concentration is also appropriate as background for graduate study in areas such as geology and earth sciences.

GEOL 204	Physical Geology	
GEOL 316	Mineralogy	
GEOL 317	Igneous and Metamorphic Petrology	
GEOL 326	Geology of Southern California	
GEOL 416	Sedimentology and Stratigraphy	
GEOL 424	Structural Geology	
GEOL 431	Geochemistry	
GEOL 437	Geophysics	
GEOL 443	Historical Geology	
GEOL 455	Modern Carbonate Depositional Systems	
GEOL 456	Field Methods of Geologic Mapping	
GEOL 464	Environmental Geology	
GEOL 465	Hydrogeology	
GEOL 497	Undergraduate Research	
Total Units		**0**

Geographic information systems

One year each of general biology and general chemistry is required for this concentration.

Geographic information systems (GIS) allows researchers to model and assess multiple layers of environmental, human health, and demographic information. Students in this track will learn to use GIS as a multidimensional tool to understand the complete environmental and health risks of an area.

HGIS 421	Cartography and Map Design	
HGIS 423	Practical Issues in GIS	
HGIS 435	Sources, Capture, and Integration of GIS Data	
HGIS 436	Spatial Analysis with GIS	
HGIS 437	GIS in Public Health	
HGIS 438	Introduction to Web GIS	
HGIS 499	Directed Study/Special Project	
Total Units		**0**

Normal time to complete the program

2 years (7 academic quarters) at LLU based on full-time enrollment; part time permitted

Geology — B.S.

Program director
Kevin E. Nick

The Department of Earth and Biological Sciences 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 (major) 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.

Scholarships and discounts for earth and biological sciences undergraduate students

Tuition rate in Geology or Environmental Sciences programs (B.S.): $290/unit; 12-18 units—$3,480 per quarter.

1. Academic scholarships
   a. Scholarships based on test results
      i 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.
      ii Scholastic Aptitude Test (SAT)
         1. National Merit Finalist Scholarship covers 100 percent tuition.
         2. National Merit Semifinalist Scholarship covers 34 percent tuition.
         3. 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 largest 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, as well as a G.P.A. scholarship, the scholarship with the largest dollar value will apply.
2. Guidelines
   - All scholarships or other financial awards cannot exceed cost 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.

Geology careers

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.

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 toward general studies requirement.

Curriculum

The geology Bachelor of Science degree requires a total of 192 quarter units. The total units are divided between general studies requirements, major requirements, and electives.

Minimum residence requirements include one year of full-time enrollment at 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. A maximum of 105 quarter units may be transferred from a two-year, junior, or community college that does not grant bachelor's degrees.

Please note: Grades of C- and below are not accepted for credit.

Seminar attendance requirements

All students must register for and attend GEOL 485 Seminar in Geology for each quarter of residence at this University.

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.

Required units and residence requirement

Minimum requirements include one year of full-time residence at 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.

Seminar attendance requirements

All students must register for and attend GEOL 485 Seminar in Geology for each quarter of residence at this University.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

- complete first two years (minimum of 96 quarter units) of general education and science courses at any accredited institution.
- a 2.5 G.P.A. during the first two years of course work.
- letters of recommendation from two faculty at the institutions previously attended.
- specific course prerequisites identified in the list of general education requirements below

It is recommended that applicants contact the department at <ebs@llu.edu>. Applications are accepted at any time. Review of applications begin in February for Autumn Quarter admission.

General studies 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 (p. 28) section in this CATALOG.

Domain 1: Religion and Humanities

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 toward the 20 units needed 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 20 quarter/14 semester units in Domain 1: Humanities and Religion.

Domain 2: Scientific Inquiry and Analysis

Natural Sciences (12 units minimum; additional 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 units minimum)

- 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 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.

Please note: Grades of C- and below are not accepted for credit.

Program requirements

Major		
GEOL 204	Physical Geology	4
GEOL 316	Mineralogy	4
GEOL 317	Igneous and Metamorphic Petrology	4
GEOL 416	Sedimentology and Stratigraphy	6
GEOL 424	Structural Geology	4
GEOL 431	Geochemistry	4
GEOL 443	Historical Geology	4
GEOL 456	Field Methods of Geologic Mapping	4
GEOL 475	Philosophy of Science and Origins	4
GEOL 485	Seminar in Geology	3
Religion		
Select at least one course from each prefix:		
RELE 4__	Upper-division Ethics	3
RELR 4__	Upper-division Relational	3
Select one of the following:		2-3
RELT 406	Adventist Beliefs and Life	
RELT 423	Loma Linda Perspectives	
RELT 436	Adventist Heritage and Health	
RELT 437	Current Issues in Adventism	
Geology electives		
Select one course from the following:		4
GEOL 426	Invertebrate Paleontology	
GEOL 427	Vertebrate Paleontology	
GEOL 444	Paleobotany	
Select 16 units from the followiing:		16
BIOL 406	Marine Biology	
BIOL 407	Herpetology	
BIOL 409	Mammalogy	
BIOL 414	Biology of Marine Invertebrates	
BIOL 415	Ecology	
BIOL 449	Biodiversity and Conservation	
GEOL 325	Rocky Mountain Field Geology	
GEOL 326	Geology of Southern California	
GEOL 434	Introduction to GIS for the Natural Sciences (2)	
GEOL 435	GIS Spatial Analysis for the Natural Sciences (3)	
GEOL 448	Field Seminar in Historical Geology	
GEOL 455	Modern Carbonate Depositional Systems	
GEOL 464	Environmental Geology	
GEOL 465	Hydrogeology	
GEOL 484	Readings in Geology	
GEOL 486	Research and Experimental Design	
GEOL 487	Field Geology Studies	
GEOL 488	Topics in Geology	
GEOL 489	Readings in Paleontology	
GEOL 495	Special Projects in Geology	

GEOL 497	Undergraduate Research	
HGIS 422	Principles of Geographic Information Systems	
HGIS 424	Desktop GIS Software Applications	
HGIS 434	Advanced GIS Software Applications	
General electives		27
Total Units		**96**

Normal time to complete the program

2 years [6 quarters] at LLU) based on full-time enrollment; part-time permitted

Geology — M.S.

Program director
H. Paul Buchheim

The Department of Earth and Biological Sciences 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, and paleontology. 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 at 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 and grants from federal and private agencies with the help of their advisors.

Curriculum

Two-year track, for students with an undergraduate degree in geology

A minimum of 56 quarter units, including 44 at or above the 500 level, constitutes the curriculum for the Master of Science degree in geology. In addition to the general requirements of the school in which the program is housed, the following courses are required:

Three-year track, for students without an undergraduate degree in geology

Students with a variety of majors (including science and some nonscience majors) are encouraged to enter the M.S. degree program in geology. The three-year track courses are indicated in the table of course requirements. The total program consists of 78 units, including 22 units of undergraduate geology courses that are not part of the M.S. degree program in geology; and the M.S. degree curriculum in geology with a minimum of 56 quarter units, including 44 at or above the 500 level. Advanced standing may be granted toward cognate requirements.

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 Seminar in Geology) 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 earn their degree. After the normative time, students may request a one-year grace period. An extension may be granted contingent upon approval of 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. Selecting a research committee.
2. Receiving approval of the written research proposal.

3. Passing the oral defense of the research proposal.
4. 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.

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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

- a bachelor's degree from an accredited institution
- a G.P.A. of at least 3.0
- achieve an acceptable score on the general GRE examination
- completion of the following courses:
  - General chemistry—full year with laboratory (12 units)
  - Physics—full year with laboratory (12 units)
  - Mathematics, including calculus
  - Statistics
  - Biology—zoology, botany, ecology or general biology (8 units highly recommended, not required)

Some of the above courses may be taken as corequisites during residence at Loma Linda University, with approval of admission committee.

Applications are accepted at any time. Review of applications begins in February for Autumn Quarter be submitted by March. Research assistantships are competitively awarded.

It is recommended that applicants contact the department at <ebs@llu.edu>.

Program requirements

3-year Track additional requirements

Corequisites

The following courses are required of all students who have not completed a bachelor's degree in geology. Courses do not apply toward graduate credit.		
GEOL 204	Physical Geology	4
GEOL 316	Mineralogy	4
GEOL 317	Igneous and Metamorphic Petrology	4
GEOL 416	Sedimentology and Stratigraphy	6
GEOL 424	Structural Geology	4
Total Units		**22**

M.S. degree requirements for all students—both 2-year and 3-year tracks

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. Advanced standing may be granted toward these requirements.		
GEOL 431	Geochemistry	4
GEOL 443	Historical Geology	4
GEOL 456	Field Methods of Geologic Mapping	4
Core		
GEOL 556	Paleoenvironments	3
GEOL 557	Paleoenvironments Field Trip	1
GEOL 558	Philosophy of Science [1]	4
or GEOL 559	Philosophy of Science and Origins	
GEOL 565	Analysis of Sedimentary Rocks	4
GEOL 566	Sedimentary Processes	4
GEOL 567	Stratigraphy and Basin Analysis	4
GEOL 607	Seminar in Geology [2]	4
GEOL 617	Proposal Writing and Grantsmanship	2
Select two of the following:		8
GEOL 426	Invertebrate Paleontology	
GEOL 427	Vertebrate Paleontology	
GEOL 444	Paleobotany	
GEOL 545	Taphonomy	
Religion		
REL_5__	Graduate-level Religion	3
Electives		
Choose from the following:		3
BIOL 515	Biogeography	
BIOL 566	Multivariate Statistics	
GEOL 426	Invertebrate Paleontology (If not taken to meet a core requiremnt)	
GEOL 427	Vertebrate Paleontology (If not taken to meet a core requiremnt)	
GEOL 437	Geophysics	
GEOL 444	Paleobotany (If not taken to meet a core requiremnt)	
GEOL 455	Modern Carbonate Depositional Systems	
GEOL 487	Field Geology Studies	
GEOL 495	Special Projects in Geology	
GEOL 525	Paleopalynology	
GEOL 526	Introduction to GIS for the Natural Sciences	
GEOL 535	GIS Spatial Analysis for the Natural Sciences	
GEOL 545	Taphonomy (If not taken to meet a core requiremnt)	
GEOL 546	Ichnology	
GEOL 548	Field Seminar in Historical Geology	
GEOL 554	Limnogeology	
GEOL 555	Carbonate Geology	
GEOL 565	Analysis of Sedimentary Rocks	
GEOL 569	Tectonics and Sedimentation	
GEOL 574	Environmental Geology	
GEOL 575	Hydrogeology	
GEOL 588	Topics in Geology	
GEOL 589	Readings in Paleontology	

GEOL 594	Readings in Geology	
GEOL 595	Lacustrine Readings	
GEOL 618	Writing for Publication	
GEOL 658	Advanced Philosophy of Science readings (2)	
GEOL 695	Special Projects in Geology	
GEOL 697	Research (This is not for thesis research)	
HGIS 422	Principles of Geographic Information Systems	
HGIS 424	Desktop GIS Software Applications	
HGIS 434	Advanced GIS Software Applications	
Research		
GEOL 698	Thesis Research [3]	4
Total Units		**56**

1 One course required: GEOL 588 Topics in Geology required except for students who have taken GEOL 475 Philosophy of Science and Origins or equivalent

2 Registration required for each quarter in residence; maximum counted toward the degree total is 4.5

3 4 units minimum; will be graded each quarter and can be repeated for additional credit

Noncourse requirements

Defense of thesis

An oral presentation and defense of the thesis is required. This includes final oral examination on student's field of study.

Grade requirement for graduation

An overall G.P.A. of 3.0 is required for graduation.

Normal time to complete the program

27-month track — 2.33 years (7 academic quarters) based on full-time enrollment; part time permitted

36-month track — 3 years (9 academic quarters) based on full-time enrollment; part time permitted

Natural Sciences — M.S.

Program director
Leonard R. Brand

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, environmental 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 environmental 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 the 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.

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 the Department of Earth and Biological Sciences.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

- a bachelor's degree in biology, geology, chemistry, physics, or other degree with typical biology and geology prerequisites.
- undergraduate G.P.A. of at least 2.75 is expected.
- achieve an acceptable score on the general Graduate Record Examination (GRE). The subject GRE is not required.
- completion of prerequisite courses:
  - college mathematics—two quarter (calculus recommended)
  - biology—one-year
  - general physics with laboratory—one year
  - general chemistry with laboratory—one year
  - general ecology—one course
  - undergraduate geology courses (see corequisites)

Some of the courses listed above may be taken during residence at Loma Linda University, with approval of the admissions committee.

Application

Applications are accepted at any time. Review of applications begins in February for the Autumn Quarter admission. Research assistantships are competitively awarded. Applicants may contact the department at <ebs@llu.edu>.

Program requirements

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. The following courses are required. Undergraduate courses must be at the 400 level.

Core		
BIOL 558	Philosophy of Science	4
or GEOL 558	Philosophy of Science	
BIOL 607	Seminar in Biology [1]	3
or GEOL 607	Seminar in Geology	
BIOL 616	Research and Experimental Design	2
or GEOL 616	Research and Experimental Design	
Select one course of the following:		3-4
BIOL 505	Marine Biology	
BIOL 515	Biogeography	
BIOL 539	Behavioral Ecology	
BIOL 546	Techniques in Vertebrate Ecology	
BIOL 549	Biodiversity and Conservation	
Select one course of the following:		4
GEOL 512	Invertebrate Paleontology	
GEOL 513	Vertebrate Paleontology	
GEOL 514	Paleobotany	
GEOL 545	Taphonomy	
Religion		
REL_ 5__	Graduate-level Religion	3
Electives		
Selected in consultation with the student's faculty advisor		30-31
BIOL 415	Ecology	
BIOL 437	Animal Behavior	
BIOL 504	Biology of Marine Invertebrates	
BIOL 505	Marine Biology (If not taken to meet a core requirement)	
BIOL 507	Herpetology	
BIOL 515	Biogeography (If not taken to meet a core requirement)	
BIOL 517	Ecological Physiology	
BIOL 518	Readings in Ecology	
BIOL 526	Principles and Methods of Systematics	
BIOL 529	Mammalogy	
BIOL 536	Readings in Animal Behavior	
BIOL 537	Advances in Sociobiology	
BIOL 538	Behavior Genetics	
BIOL 539	Behavioral Ecology (If not taken to meet a core requirement)	
BIOL 545	Genetics and Speciation	
BIOL 546	Techniques in Vertebrate Ecology (If not taken to meet a core requirement)	
BIOL 547	Molecular Biosystematics	
BIOL 548	Molecular Ecology	
BIOL 549	Biodiversity and Conservation (If not taken to meet a core requirement)	
BIOL 555	Molecular Genetics	
BIOL 566	Multivariate Statistics	
BIOL 588	Current Topics in Biology (If not taken to meet a core requirement)	
BIOL 589	Readings in Biology	
BIOL 618	Writing for Publication	
BIOL 695	Special Projects in Biology	
BIOL 697	Research	
ENVS 401	Earth System Science and Global Change	
ENVS 434	The Environmental Context of Community Health	
ENVS 495	Special Projects in Environmental Sciences	
ENVS 534	The Environmental Context of Community Health	
GEOL 416	Sedimentology and Stratigraphy	
GEOL 512	Invertebrate Paleontology (If BIOL 426 not taken to meet a core requirement)	
GEOL 513	Vertebrate Paleontology (If BIOL 427 not taken to meet a core requirement)	
GEOL 514	Paleobotany (If BIOL 444 not taken to meet a core requirement)	
GEOL 525	Paleopalynology	
GEOL 526	Introduction to GIS for the Natural Sciences	
GEOL 535	GIS Spatial Analysis for the Natural Sciences	
GEOL 545	Taphonomy (If not taken to meet a core requirement)	
GEOL 546	Ichnology	
GEOL 548	Field Seminar in Historical Geology	
HGIS 422	Principles of Geographic Information Systems	
HGIS 424	Desktop GIS Software Applications	
Total Units		**50**

[1] Registration required for each quarter in residence; 0.5 unit per quarter. Maximum counted toward the degree total is 3.

Noncourse requirements

Seminar attendance requirements

All graduate students in residence must register for and attend Seminars (BIOL 607 Seminar in Biology or GEOL 607 Seminar in Geology) each quarter at Loma Linda University.

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).

Final examinations

Students are expected to pass a written comprehensive examination during their penultimate quarter in residence.

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.

Grade requirement for graduation

A grade of B (3.0) or better is required in all courses that count toward the degree.

Normal time to complete the program

2 years based on full-time enrollment; part time permitted

Department of Pathology and Human Anatomy

The School of Medicine's Division of Anatomy offers curricula leading to the Master of Science or the Doctor of Philosophy degree. The core curriculum offers a broad biomedical background. Course work provides opportunities for qualified students not only to study all aspects of human morphology from both didactic and investigative points of view, but also to develop a special area of research interest. Study and research on other species and in other biomedical disciplines may be included in the student's curriculum. While working on a significant research problem, students are introduced to research methods both through scientific literature and the laboratory. They 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.

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.

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.

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.

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 Seminar in Religion and the Sciences; as well as RELE 525 Ethics for Scientists and RELR 588 Personal and Family Wholeness. A course in biblical studies (RELT 559 New Testament Thought, RELT 560 Jesus the Revealer: The Message of the Gospel of John, RELT 564 Apostle of Hope: The Life, Letters, and Legacy of Paul, or RELT 565 Vision of Healing: The Message of the Book of Revelation) 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.

Chair

Paul C. Herrmann

Program coordinator

Kenneth R. Wright

Primary faculty

Denise L. Bellinger

Resa C. Chase

Bertha C. Escobar-Poni

Paul C. Herrmann

Michael A. Kirby

Zhongrong Luo

P. Ben Nava, Jr.

Kirby C. Oberg

Kimberly J. Payne

Kenneth R. Wright

Secondary faculty

William M. Hooker

Admissions

In addition to Loma Linda University admissions requirements (p. 24), the applicant must also complete the following requirements:

- a bachelor's degree from an accredited U.S. college or the equivalent from an international university.
- a full year of each of the following undergraduate courses:
  - general biology
  - general chemistry
  - organic chemistry

- general physics

- upper division courses in (strongly recommended)
  - biology (such as cell and molecular biology)
  - chemistry (such as biochemistry)
- Calculus recommended.
- Results of the general test of the Graduate Record Examination (GRE)

The program reserves the right to decide on the equivalence of courses presented by the applicant.

Programs

Anatomy — M.S. (p. 317), Ph.D. (p. 317) (Comparison (p. 318))

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.

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
Major		
ANAT 516	Neuroscience GS	6
ANAT 541	Gross Anatomy GS	7
ANAT 542	Cell Structure and Function GS	7
ANAT 544	Human Embryology Lecture	2
Seminars		
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELT 617	Seminar in Religion and the Sciences	3
Degree completion options		15
Course work track:		
ANAT___	Anatomy/embryology electives (15 units)	
Research track:		
ANAT 697	Research (14 units)	
IBGS 605	Integrative Biology Presentation Seminar (1 unit)	
Total Units		**45**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Noncourse requirements

Course work option: a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

Research option: pass an oral examination given by his/her graduate guidance committee after the thesis has been completed.

Normal time to complete the program

2 years — based on full-time enrollment; part time permitted

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.

Basic science core		
IBGS 501	Biomedical Communication and Integrity	2
IBGS 502	Biomedical Information and Statistics	2
IBGS 503	Biomedical Grant Writing	2
IBGS 511	Cellular Mechanisms and Integrated Systems I	8
IBGS 512	Cellular Mechanisms and Integrated Systems II	8
IBGS 513	Cellular Mechanisms and Integrated Systems III	8
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2
Major		
ANAT 516	Neuroscience GS	6
ANAT 541	Gross Anatomy GS	7
ANAT 542	Cell Structure and Function GS	7
ANAT 544	Human Embryology Lecture	2
Seminars		
IBGS 605	Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar (1.0)	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar [1]	0
Religion		
RELE 525	Ethics for Scientists	3
RELR 549	Personal and Family Wholeness	3
RELT 617	Seminar in Religion and the Sciences	3
Research/Dissertation or Thesis		
ANAT 697	Research (1.0-8.0)	15
IBGS 696	Research Rotations (1.0)	2
Total Units		**85**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Normal time to complete the program

4 years based on full-time enrollment, part-time permitted

Anatomy — M.S., Ph.D. Comparison

Basic Science Core	Course Title	MS Coursework	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
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**
Major	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
ANAT 516	Neuroscience GS	6.0	6.0	6.0
ANAT 541	Gross Anatomy GS	7.0	7.0	7.0
ANAT 542	Cell Structure and Function GS	7.0	7.0	7.0
ANAT 544	Human Embryology Lecture	2.0	2.0	2.0
Totals		**22.0**	**22.0**	**22.0**
Seminars	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar[1]	0.0	0.0	0.0
IBGS 605	Integrative Biology Presentation Seminar		1.0	2.0
Totals		**1.0**	**2.0**	**3.0**
Religion	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
RELT 617	Seminar in Religion and the Sciences	3.0	3.0	3.0
RELE 525	Ethics for Scientists			3.0
RELR 549	Personal and Family Wholeness			3.0
Totals		**3.0**	**3.0**	**9.0**
Electives	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
ANAT ___	Graduate Anatomy Elective (Electives in anatomy/embryology)	15.0		
Totals		**15.0**		
Research/ Dissertation or Thesis	**Course Title**	**MS Coursework**	**MS Research**	**PhD**
ANAT 697	Research		14.0	15.0
IBGS 696	Research Rotations			2.0
Totals			**14.0**	**17.0**
Overall Totals		**45.0**	**45.0**	**85.0**

[1] Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

Biomedical Sciences — M.M.S.

Program coordinator
Kenneth R. Wright

Students accepted into the Master of Medical Science degree in biomedical sciences 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 sciences courses.

The program enables students to complete their studies in one academic year of full-time commitment. The program is intended to provide experience in the rapidly changing area of biomedical sciences; and it prepares students to apply to professional programs in medicine or to pursue other career options—such as high school teaching, patent law, or biotechnology management.

The curriculum includes 4 units of critical thinking, 4 units of medical practice management, 3 units of religion, and a capstone project of 3 units. The remaining units come from the first-year medical curriculum —which includes gross anatomy/embryology, physiology, cell structure and function, and biochemistry/genetics. Although the courses share lecture/laboratory experiences and tests with the Doctor of Medicine degree program, such courses will not be transferred to the M.D. degree program; a student subsequently admitted to the M.D. degree program should expect to take, and pay for, the normal M.D. degree curriculum.

The program will culminate with a capstone project, which will give the student the opportunity to demonstrate proficiency/knowledge in the biomedical sciences and understanding of current clinical literature, etc.

Admissions

Applicants to the Biomedical Sciences Program must satisfy the same requirements (p. 327) 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 and a course in biochemistry. Applicants are required to take the Medical College Admission Test (MCAT).

Program requirements

Summer quarter courses		
BHCJ 501	Critical Thinking	4
MDCJ 509	Introduction to Medical Practice Management	4
Year-long courses		
ANAT 510	Gross Anatomy	8.5
ANAT 515	Human Embryology	2
BCHM 519	Medical Biochemistry, Molecular Biology, and Genetics	4.5
MDCJ 508	Cell Structure and Function	8.5
PHSL 519	Medical Physiology	7.5
Spring quarter course		
REL_ ___	Graduate-level religion	3
MDCJ 510	Capstone Project	3
Total Units		**45**

Normal time to complete the program

1 year — full-time enrollment required

Professional

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*—including the section that pertains specifically to the School of Medicine—and to abide by its policies. Additional information regarding policies specific to the School of Medicine are provided by the school at the orientation to each academic year. 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 are represented in 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.

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* 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. A student bulletin board is located in the student lounge. It is the responsibility of students to check their e-mail daily.

Required supplies

Microscope

Microscopes will be provided to students and a rental fee will be charged. If a student chooses to use his/her own microscope, it must be approved by the histology faculty in the Division of Anatomy.

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.

Practice and regulations

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

In order to sit for an examination, students must be present when the chief proctor reads the examination instructions at the designated start time. Students who arrive late to an examination will be denied entrance. If, due to special circumstances, a student has been given permission by the Office of Medical Student Education to arrive late to an examination, the number of minutes the student is late will be deducted from their allotted examination time. 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, without exception.

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 percentage

earned on the cumulative final examination (including NBME subject exams) for each course will be substituted for the missed examination. 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 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 at the end of the academic year to take and pass the subject examination upon completing all other course work for that year. Arrangements for the makeup 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 Medical Student Education (909/558-4255) must be contacted as soon as possible. Failure to do so will result in an 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 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/clerkship directors assign grades at the end of each course. Grades reflect the success or failure of the student in meeting the objectives of the course in terms of knowledge, skills, attitudes, values, and behaviors.

The University transcript records grades for completed courses/clerkships as Satisfactory (S), Marginal Satisfactory (MS). or Unsatisfactory (U). For the purposes of determining eligibility for promotion, the School of Medicine utilizes grades of Satisfactory (S), Marginal Satisfactory (MS), Unsatisfactory (U), or In Progress (IP). Course/clerkship directors assignt a grade of Satisfactory (S) when a student's performance clearly exceeds the requirements of the course/clerkship. A grade of Marginal Satisfactory (MS) is assigned when the course/clerkship director judges student performance meets but does not exceed the minimal requirements of the course. A grade of Unsatisfactory is assigned when a student's performance fails to meet the minimal requirements for the course. A notation of In Progress (IP) is used to identify students having unfinished course/clerkship requirements. Subjective narrative descriptions of student performance are submitted to the Office of the Senior Associate Dean for Medical Student Education and may be used in the Medical Student Performance Evaluation (MSPE/Dean's Letter).

Students who wish to contest a grade should discuss the grade first with the course/clerkship director, then with the department chair. If the student is not satisfied, s/he may then appeal the grade to the Office of the Senior Associate Dean for Medical Student Education.

Determination of dean's letter grade

For the Medical Student Performance Evaluation (MSPE/Dean's Letter), students will be assigned one of the following five designations for each course/clerkship:

- H (honors)
- HP (high pass)
- P (pass)
- MP (marginal pass)
- U (unsatisfactory)

Each designation will be based on predetermined criteria established by the course/clerkship director in collaboration with the Office of Medical Student Education. The criteria for ranking may include student performance on faculty-generated examinations, national standardized subject examinations, active and computer-based learning activities, patient-care activities, objective structured clinical examinations (OSCEs), medical simulations, and other academic activities as set forth by the course/clerkship director. Students who have failed a course or clerkship-specific NBME subject exam are not eligible to receive Dean's Letter Grades of honors or high pass in that course/clerkship.

Third- and fourth-year medical students will not be ranked against each other. Clerkship grades and performance on school-required activities will be reported on the MSPE (Dean's Letter).

Promotion

Promotion from year to year is contingent upon satisfactory academic performance. Cognitive and noncognitive (including personal suitability to assume the responsibilities of the medical profession) academic progress are monitored by the Academic Review Committee. The committee evaluates cumulative academic performance, not just performance in current or most recent course work. Students must pass each course to demonstrate overall satisfactory performance.

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

A student whose overall performance is judged to be unsatisfactory by the Academic Review Committee is placed on academic probation. For more information concerning the terms of academic probation, please see the *Student Handbook*.

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.

The *Student Handbook* provides conditions and deadlines for taking and passing USMLE examinations.

Program requirements

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—Basic Science Knowledge

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—Clinical Skills

Students will develop the clinical skills that are integral to the safe and competent practice of medicine.

Outcome III—Whole Person Care

Students will understand and apply the University philosophy of wholeness in their personal and professional lives.

Outcome IV—Clinical Reasoning

Students will develop diagnostic reasoning and analytic problem-solving skills in order to assimilate information and establish appropriate diagnoses and treatment plans.

Outcome V—Interpersonal and Communication Skills

Students will develop effective interpersonal and communication skills, including sensitivity to those from diverse backgrounds (e.g., cultural, ethnic, gender, generational, socioeconomic, and religious).

Outcome VI—Medical Professionalism

Students will develop professionalism in excellence and scholarship, accountability and responsibility, and altruistic behaviors.

Outcome VII—Ethical and Spiritual Foundation

Students will integrate ethical and Christ-centered principles of conduct in their professional lives.

Outcome VIII—Preparation for Lifelong Learning

Students will develop a commitment to discovery and lifelong learning.

Goals for each year

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 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 biblical 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 also 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 experience.

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 foundational and comprehensive experiences for patient care in ambulatory and hospital-based settings. Students will attain these experiences 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) the application of 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 mandatory supervised patient-care experiences in emergency medicine, intensive care medicine, preventive medicine and public health; and a subintern-level experience in internal 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 the eighteen weeks of elective rotations. To reestablish the importance of science in medical practice, at least two weeks of electives will be in a 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.

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 medicine and public health, 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.

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 Federation of State Medical Boards, 400 Fuller Wiser Road, Suite 300, Euless, TX 76039-3855.

Postgraduate training

Graduate specialty medical education residencies

Loma Linda University is affiliated with 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, combined internal medicine-pediatrics, cardiology, gastroenterology, nephrology, oncology, pulmonary/critical care medicine, rheumatology, neurology, child neurology, clinical neurophysiology, neurological surgery, obstetrics and gynecology, ophthalmology, orthopaedic surgery, otolaryngology, clinical and anatomic pathology, pediatrics, abuse 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, general vascular surgery, and urology. Additional nonaccredited fellowships are available.

Graduate physicians wishing to apply for entrance into these programs should contact the director of the program.

These programs are sponsored by Loma Linda University Medical Center and Loma Linda Inland Empire Consortium for Healthcare Education.

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, Associate Director of Continuing Medical Education
Loma Linda University School of Medicine
11175 Campus Street, CP A1116G
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 University 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.

Medical Scientist — M.D./Ph.D.

Program director
Penelope J. Duerkson-Hughes

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 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 course 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.

Admissions

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 first and second years of the M.D. degree curriculum. When a student completes an M.S. or Ph.D. degree, tuition deferred from the first and second years is canceled.
4. Tuition waiver for both the third and fourth 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 third year of the medical curriculum, and, in unusual cases, for the first term of their fourth 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 term 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 process 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.

Medicine — M.D.

Curriculum

The curriculum in medicine consists of four academic years. Instructional units are based on the quarter system. The first two academic years are oriented to the sciences basic to the practice of medicine. The remaining two academic years consist of clinically oriented core instruction and 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 preventive medicine and public health; 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.

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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

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.

Required

Keyboard and computer skills.

Medical College Admission Test (MCAT). Scores older than three years will not be considered.

Recommended

Introductory course in basic statistics

Introductory course in psychology

Introductory course in sociology

Biochemistry, strongly recommended (Required for 2016 entering class)

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.

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 (https://www.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 through the AMCAS Web site, 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 the applicant to complete an online supplementary application.
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 responds online to his/her offer of admissions as a student, accepts the technical standards, and pays the $100 acceptance deposit online 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.
6. 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, students 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>. 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 influenza vaccine and an annual skin test for tuberculosis.

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 effective date of this CATALOG) 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 (909/651-4010). 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.
- August 15 (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: Medical students must possess the emotional health required for appropriate utilization of their intellectual abilities; the exercise of good judgment, and the timely completion of all responsibilities attendant to their academic work, team work, and patient care. They must demonstrate the ability to develop mature, sensitive and effective professional relationships with peers, faculty, staff, members of the health-care team, and patients. Medical students must demonstrate empathy, and concern for others while respecting appropriate personal and professional boundaries. Medical students must demonstrate integrity as manifested by truthfulness, acceptance of responsibility for one's actions, accountability for mistakes, and the ability to place the wellbeing of the patient above their own when necessary. They must be able to tolerate demanding 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 medical education and clinical practice settings.

Program requirements

First Year		
ANAT 529	Gross Anatomy and Embryology	10.5
BCHM 529	Fundamentals of Human Biochemistry and Genetics	4.5
MDCJ 527	Cell Structure and Function	8.5
MDCJ 528	Evidence-Based Medicine and Information Sciences	3.5
MDCJ 529	Physical Diagnosis	8
MDCJ 538	Medical Neuroscience	3.5
MNES 504	Orientation to Medicine	6
PHSL 526	Medical Physiology	7.5
PSYT 525	Fundamentals of Behavioral Science	3
RELE 704	Medicine and Ethics	2
RELR 701	Orientation to Religion and Medicine	2
Select two of the following:		4
RELR 725	Wholeness for Physicians	
RELR 749	Personal and Family Wholeness	
RELT 706	Adventist Beliefs and Life	
RELT 707	Medicine, Humanity, and God	
RELT 767	Apostle of Hope: The Life, Letters, and Legacy of Paul	
Second Year		
BCHM 530	Biochemical Basis of Human Disease SM	2
MDCJ 530	Pathophysiology and Applied Physical Diagnosis	11
MDCJ 539	Diseases of Neuroscience	4
MICR 547	Medical Microbiology	4.5
PATH 517	Human Systemic Pathology	9.5
PHRM 515	Medical Pharmacology	6
PRVM 517	Clinical Preventive Medicine	4
PSYT 526	Psychopathology	4.5
RELR 775	Art of Integrative Care	2
Select one of the following:		2
RELR 749	Personal and Family Wholeness (If not taken 1st year)	
RELT 716	God and Human Suffering	
RELT 734	Anthropology of Mission	
Third Year		
1.5 units = 1 week of clinical clerkship		
FMDN 701	Family Medicine Clerkship (4 weeks)	6
GYOB 701	Gynecology and Obstetrics Clerkship (6 weeks)	9
MEDN 701	Medicine Clerkship (10 weeks)	15
MNES 791	Third-year Elective (2 weeks)	3
NEUR 701	Neurology Clerkship (4 weeks)	6
PEDS 701	Pediatrics Clerkship (8 weeks)	12
PSYT 701	Psychiatry Clerkship (6 weeks)	9
RELE 714	Advanced Medical Ethics	2
SURG 701	Surgery Clerkship (10 weeks)	15
Fourth Year		
Clinical clerkships		
EMDN 821	Emergency Medicine Clerkship (2 weeks)	3
MDCJ 821	Preventive Medicine and Public Health (4 weeks)	6
Select one rotation (4 weeks):		6
MEDN 822	Medicine Intensive Care	
PEDS 822	Pediatrics Intensive Care	
SURG 822	Surgery Intensive Care	
Subinternship: Select one rotation (4 weeks)		6
FMDN 821	Family Medicine Subinternship	
MEDN 821	Medicine Subinternship	
PEDS 821	Pediatrics Subinternship	
SURG 821	Surgery Subinternship	
Select 30 units (20 weeks) of the following:		30
ANAT 891	Anatomy Elective	
ANES 891	Anesthesiology Elective	
BCHM 891	Biochemistry Elective	

DERM 891	Dermatology Elective	
EMDN 891	Emergency Medicine Elective	
FMDN 891	Family Medicine Elective (General Family Medicine)	
GYOB 891	Gynecology and Obstetrics Elective	
MDCJ 891	Whole-Person Care	
MEDN 891	Medicine Elective	
NEUR 891	Neurology Elective	
NEUS 891	Neurosurgery Elective	
OPHM 891	Ophthalmology Elective	
ORTH 891	Orthopaedic Surgery Elective	
OTOL 891	Otolaryngology Elective	
PATH 891	Pathology Elective	
PEDS 891	Pediatrics Elective	
PHRM 891	Pharmacology Elective	
PHSL 891	Physiology Elective	
PMRH 891	Physical Medicine and Rehabilitation Elective	
PRVM 891	Preventive Medicine Elective	
PSYT 891	Psychiatry Elective	
RADS 891	Radiology Elective	
RDMN 891	Radiation Medicine Elective	
SURG 891	Surgery Elective	
UROL 891	Urology Elective	
Total Units		**240.5**

Normal time to complete the program

4 years — full-time enrollment required

Anesthesiology

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.

Chair

Robert D. Martin

Vice chair

Richard L. Applegate II

Division of Critial Care

Gary R. Stier

Primary faculty

Shelley F. Abdel-Sayed

Martin W. Allard

Donald L. Anderson

Richard L. Applegate II

Sherif A. Azer

Kristen R. Bandy

Steven J. Barr

Jia-Yi Bian

Baher N. Boctor

Bernard J. Brandstater

Allen L. Brandt

Stanley D. Brauer

Burton A. Briggs

Douglas C. Brockmann

Melody Chang

Deborah M. Chung

Carl E. Collier

Francis L. Comunale

Mark E. Comunale

Carmencita J. Coronel

Jennifer B. Cristall

Dana S. Darwish

Ihab R. Dorotta

Biftu G. Felema

Joseph P. Galura

Jason W. Gatling

Elizabeth A. Ghazal

Brenna L. Gustafson-Jackson

Bryan E. Halverson

Amgad Hanna

Andrew W. Hesseltine

Justin E. Horricks

Lei Huang

Daniela S. Karagyozyan

Jonathan G. Kelling

Abraham M. Kiani

David S. Y. Kim

Penny L. Kimball-Jones

Carol A. Lau

Ryan E. Lauer

Martin M. Le

Anita E. Lee

Sandra H. Lee

John Lenart

Marina J. Liu

Samuel Loh

Mathew Malkin

Chelan A. Malmberg

Robert D. Martin

Linda J. Mason

Deborah W. McIvor

James A. Meyer

Phebe F. Mosaad

Shannon M. Mulder-Michaelson

Kevin A. Nasseri-Noori

Monica M. Neumann

Michelle Love Newsom

Laura H. Ngo

Mohamed B. Nour

Rebecca J. Patchin

Thomas Rasmussen

Lowell W. Reynolds

Elena M. Rudoy

Valerie A. Seabaugh

Nitin Shah

Gary W. Shih

Jean E. Sprengel

Gary R. Stier

Jason A. Tan

Shirley L. Tan

Teresa L. Thompson-Razzouk

Samuel E. Torres

Linda I. Wat

Mark Wittman

Po-chin J. Wu

Secondary faculty

Gregory A. B. Cheek

John H. Zhang

Basic Science

The goals of the Department of Basic Sciences 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.

Chair

Penelope J. Duerksen-Hughes

Division of Biochemistry

Penelope J. Duerksen-Hughes
Head

Division of Microbiology

Hansel M. Fletcher
Head

Division of Pharmacology

John Buchholz
Head

Division of Physiology

John H. Zhang
Head

Primary faculty

Danilyn M. Angeles

Wilson Aruni

Vladimar Bashkirov

Danilo Boskovic

Eileen J. Brantley

John N. Buchholz

Edouard M. Cantin

Carlos A. Casiano

Shin-Tai Chen

Daisy D. De Leon

Marino A. De Leon

Charles A. Ducsay

Penelope J. Duerksen-Hughes

Valeri Filippov

Maria Filippova

Ronald R. Fiscus

Hansel M. Fletcher

Ravi Goyal

Daila S. Gridley

David A. Hessinger

Salma Khan

Paul R. Krafft

William H. Langridge

Tim Lekic

Lawrence D. Longo

Xiao W. Mao

Eugenica I. Mata-Greenwood

Jonathan W. Neidigh

Gregory A. Nelson

Stephen A. Nyirady

William J. Pearce

Michael J. Pecaut

Christopher C. Perry

Gordon G. Power

Hongyu Qiu

John J. Rossi

Keith E. Schubert

Ihsan Solaroglu

Ubaldo A. Soto-Wegner

Lawrence C. Sowers

Richard S. Sun

Jiping Tang

Julia J. Unternaehrer-Hamm

Roman Vlkolinsky

Nathan R. Wall

Charles Wang

Kylie J. Watts

R. Bruce Wilcox

Christopher G. Wilson

Sean M. Wilson

David L. Wolf

Daliao Xiao

Zhice Xu

Steven M. Yellon

John H. Zhang

Lubo Zhang

Anthony J. Zuccarelli

Secondary faculty

Nancy J. Anderson

Richard L. Applegate II

Jerome Badaut

Besh R. Barcega

Brenda L. Bartnik-Olson

David J. Baylink

Arlin B. Blood

Murray E. Brandstater

Nathan R. Brandstater

David A. Bush

Cindy X. Cai

Philip J. Chan

Chien-Shing Chen

Wayne K. Cheng

Kathleen J. Clem

Keith K. Colburn

Bradley A. Cole

Khashayar Dashtipour

Willie L. Davis, Jr.

T. Kent Demark

John F. Dicello

Ronald S. Fernando

Kendra L. Fisher

Carlos A. Garberoglio

Elizabeth A. Ghazal

Nirmalya Ghosh

June-Anne Gold

Susan L. Hall

Mark G. Haviland

Barbara A. Holshouser

Lei Huang

Christian S. Jackson

Alan K. Jacobson

Paul J. Jacobson

T. Michael Kashner

Daniel K. Kido

Michael A. Kirby

Wolff M. Kirsch

Steve C. Lee

John E. Lewis

Xian Luo-Owen

Saied Mirshahidi

Subburaman Mohan

Monica M. Neumann

H. Bryant Nguyen

Andre Obenaus

Thomas A. O'Callaghan

Bryan T. Oshiro

Peter H. Pham

Xue Zhong Qin

Mark E. Reeves

E. Ellen Reibling

Philip J. Roos

Lawrence Sandberg

Reinhard W. Schulte

Kristin A. Seiberling

Matilda Sheng

Wei-Xing Shi

Sam Siddighi

James M. Slater

Jerry D. Slater

Douglas C. Smith

Dustin D. Smith

Jason C. Smith

Salvador Soriano Castell

Donna D. Strong

Karen A. Tong

Abel Torres

Joe E. Wergedal

Leonard S. Werner

Beverly P. Wood

N. Dan Wycliffe

Gary Y. Yang

Xiangpeng Yuan

Junchan J. Yune

Xiao-Bing Zhang

Cardiovascular and Thoracic Surgery

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.

Chair

Anees J. Rozzouk

Division of Cardiothoracic

Anees J. Razzouk
Head

Division of Vascular

Ahmed M. Abou-Zamzam
Head

Primary faculty

Ahmed M. Abou-Zamzam

Paul K. Aka

Leonard L. Bailey

Christian Bianchi

Jason T. Chiriano

Rosario Floridia

Joshua T. Gysbers

Nahidh W. Hasaniya

Jeffery H. Hsu

George I. Kafrouni

James D. Killeen, Jr

Craig R. Larson

Afshin M. Molkara

Sheela T. Patel

Robert Pereyra-Suarez

Darin J. Rampton

Alfredo L. Rasi

Anees J. Razzouk

O. Howard Shattuck

Neha D. Sheng

Steven R. Sparks

Majid Tayyarah

Theodore H. Teruya

Salman Zaheer

Secondary faculty

Jason M. Wallen

Dermatology

Chair

Abel Torres

Primary faculty

Nancy J. Anderson

John H. Bocachica

Richard D. Doty

Desmond D. Gibson

Linda Golkar

Jane M. Hirokane

Sharon E. Jacob-Soo

Shawna K. Langley

Justin D. Love

Jariene D. Luke

Kenneth D. Macknet, Jr.

LaVonne M. Meadows

Fred F. Soeprono

Abel Torres

Hubert C. Watkins

John F. Zdrojewski

Secondary faculty

Takkin Lo

Emergency Medicine

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.

Chair

Kathleen J. Clem

Vice chair

Tamara L. Thomas

Division of General Emergency Medicine

Stephen W. Corbett
Head

Division of Pediatric Emergency Medicine

Lance E. Brown
Head

Primary faculty

John Abdelshehid

Jason K. An

Nelson H. Bansil

Besh R. Barcega

Joshua P. Bobko

Ryan Brenchley

Lance A. Brown

Sarah J. Christian-Kopp

Samnuel C. Chua

Kathleen J. Clem

Stephen W. Corbett

Lydia Daniel-Underwood

T. Kent Denmark

Vi A. Dinh

David M. Englander

Jeff T. Grange

Steven M. Green

Gregory T. Guldner

Mindi J. Guptill

Richard H. Guth

Aqeel S. Kahn

Melvyn L. Harris

Korbin N. Haycock

David A. Hecht

Aqeel S. Khan

Grace J. Kim

Steven S. Kim

Tae Eung J. Kim

Tommy Y. H. Kim

Dallas T. Koperski

Eduardo D. Lam

Lionel H. Lee

Chin-Yu Jean Lo

Michael A. Lowe

R. Daniel Luther II

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Timothy G. McNaughton

James A. Moynihan

Dan Nadler

John C. Naftel

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Olen A. L. Nettenburg

H. Bryant Nguyen

Kenneth L. Nickson

Humberto R. Ochoa

John E. Osborne

Stephen C. Patterson

Mary J. Piroutek

E. Ellen Reibling

James W. Rhee

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Dustin D. Smith

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Milton R. Teske

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Tamara L. Thomas

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Justin B. Wagner

E. Lea Walters

Deborah L. Washke

Samuel G. Wilson

Ryan S. Windemuth

Brian J. Wolk

Ernest S. Woodhouse

Carmela Yomtoubian

Timothy P. Young

Kimberly R. Zimmerman

Secondary and adjunct faculty

Shamel A. Abd-Allah

Jason Prystowsky

Family Medicine

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.

Chair

John K. Testerman

Vice chair

William W. Jih

Primary faculty

Rasha Abdrabou

Wil Alexander

Lora L. Allsman

James Appel

Javier A. Armijo

Lisa A. Asfahani

Randy A. Beddoe

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Julie H. Bryson

Zachary J. Cash

Romeo C. Castillo

Warren B. Churg

James E. Crounse

Janet A. Cunningham

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Dai V. Du

Allen C. Felix

John S. Fleming

Christopher V. Flores

Lisa D. Flores

Daniel Franco

Trixy J. Franke

Juliana N. Fuller

William L. Gerling

Herbert N. Giebel

Cynthia J. Glasgow

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Sara E. Halverson

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Jeffrey L. Kim

Richard Kim

Sunghee Kim

Wessam K. Labib

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Hobart H. Lee

Tony B. Lee

Yi Liu

Gerald A. Lofthouse

John S. Lukens

Tarek Z. Mahdi

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Renu Mittal

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R. Steven Pulverman

Robert Quigley

Maisara I. Rahman

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Nancy Testerman

John L. Torquato

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David C. Ward

Robert K. Yamada

Jack N. Yu

Secondary and adjunct factuly

Wayne S. Dysinger

Daniel L. Engeberg

Jason L. Lohr

Gynecology and Obstetrics

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.

Chair

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Tamara M. Shankel

Tamara L. Thomas

Leonard S. Werner

Medicine

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 becomes 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.

Chair

Douglas R. Hegstad

Executive vice chair, Medicine

Philip M. Gold

Vice chair, LLUMC Division

Kenneth Jutzy

Vice chair, Medicine, RCRMC

Daniel I. Kim

Vice chair, Medicine, Pettis Veterans Medical Center

Philip J. Roos

Vice chair, Education and Faculty Development

Lawrence K. Loo

Vice chair, Research

H. Bryant Nguyen

Associate vice chair, Education Research

T. Michael Kashner

Associate chair, Resident Education

Samuel Baz

Associate chair, Student Education

Raymond Wong

Division of Cardiology

Kenneth R. Jutzy
Head

Division of Critical Care

David K. Bland
Head

Division of Endocrinology

Kevin Codorniz
Interim Head

Division of Gastroenterology and Nutrition

Terence D. Lewis
Head

Division of Hematology and Oncology

Chien-Shing Chen
Head

Division of Hospitalist Medicine

David H. Kim
Head

Division of Infectious Diseases

Ingrid Blomquist
Interim Head

Division of General Internal Medicine

Raymond Y. Wong
Head

Division of Geriatric Medicine

Raymond Y. Wong
Head

Division of Nephrology

Siegmund Teichman
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Division of Pulmonary

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Division of Regenerative Medicine

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Division of Rheumatology and Immunology

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Gerald S. Friedman

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Sukh S. R. Mehta

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Alan W. Michel

Hamid R. Mirshahidi

Saied Mirshahidi

Subburaman Mohan

Ioana Moldovan

Patrick M. Moloney

Devadas S. Moses

Ali Motabar

Ashis Mukherjee

Malwinder K. Multani

J. Lamont Murdoch

Gayathri Nagaraj

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Krishna S. Nayak

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Hoa T. Nguyen

Truclinh T. Nguyen

Elena Nuthalapaty

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Sudha M. Pai

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Gauttam N. Patel

Kruti Patel

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Gulnara Rackauskas

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John A. Rambharose

Syed J. Raza

Rajender Reddy

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Rhodes L. Rigsby

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Malathy Sriskandarajah

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Debra L. Stottlemyer

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David B. Stultz

Made Sutjita

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Richard J. Swabb

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Lionel G. Tan

Shirley M. Tan

Yi Tang

Siegmund Teichman

Douglas W. Teller

Sana K. Thara

Mie Mie Thinn

Hok-Ming D. Thio

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Bhoodev Tiwari

Duc D. To

Karina D. Torralba

Vilma I. Torres

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John S. Uniat

Padmini Varadarajan

Ashok K. Verma

Bertrand H. Vipond

Kenny D. Vu

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Richard Weisbart

Mark A. Welch

Jon E. Wergedal

Leonard S. Werner

David W. Wilbur

Angela C. Williams

Brian A. Wong

Raymond Y. Wong

Sammy S. Wong

Michael K. Woo

Weirong Xing

Hongrun Yu

Minho Yu

Yuan Yuan

Yasmin A. Yusufaly

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Claire L. McArthur III

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Pushpa Nowrangi

Kimberly J. Payne

Joan Sabate

Lawrence Sandberg

Tamara M. Shankel

Maulin S. Soneji

Lawrence C. Sowers

Javad Tafreshi

Sigve K. Tonstad

Chad J. Vercio

Sean M. Wilson

Sidney S. C. Wu

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C. Joan Coggin

Stanley C. Condon

Glenn L. Foster

Thomas E. Godfrey

Raymond A. Herber

G. David Jang

Roy V. Jutzy

Irvin N. Kuhn

Francis Y. Lau

Edwin T. Wright

Neurology

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.

Chair

Bryan E. Tsao

Primary faculty

Firas Bannout

Thomas W. Bohr

Judy L. Chang

Bradley A. Cole

Dorothee L. Cole

Khashayar Dashtipour

Sandra E.D. Estrada

Rodolfo O. Escutin

Wesley E. Fleming

Daniel W. Giang

Yujian Guo

Elia Haddad

Izabella Isaac

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Travis E. Losey

David J. Michelson

Laura D. Nist

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Jignasa G. Patel

Gordon W, Peterson

A. Dean Sherzai

R. Richard Sloop

Bryan E. Tsao

Secondary faculty

Gregory S. Aaen

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Murray E. Brandstater

Jack J. Chen

Ali Makki

John H. Zhang

Emeritus faculty

Donald I. Peterson

Neurosurgery

Chair

Austin R. T. Colohan

Primary faculty

Farbod Asgarzadie

Traian T. Cojocaru

Austin R. T. Colohan

Samer S. Ghostine

Walter D. Johnson

Wolff M. Kirsch

Yuthana Kong

Venkatraman Sadanand

Mark A. Spicer

Kamal R. M. Woods

Alexander Zouros

Secondary faculty

J. Paul Jacobson

John H. Zhang

Ophthalmology

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.

Chair

Howard V. Gimbel

Vice chair, Academic Affairs

Ernest S. Zane

Vice chair, Clinical Affairs

Michael E. Rauser

Primary faculty

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Loren L. Denler

Andrew P. Doan

Jesse A. Dovich

Jennifer A. Dunbar

Joseph T. Fan

Eric J. Friedrichsen

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Jeffrey J. Ing

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Steve G. Lin

Priscilla K. Luke

Patrick G. McCaffery

Scott K. McClatchey

David R. McGrew

Todd J. Mondzelewski

Enoch H. Nam

Julio Narvaez

Rosalynn H. Nguyen

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Barratt L. Phillips

Kristiane M. Ransbarger

Michael E. Rauser

Steven O. Rimmer

Robert C. Rosenquist, Jr.

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Kimber L. Schneider

Gerald R. Schultz

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Jodi O. Smith

Balachandran D. Srinivasan

Kris J. Storkersen

Mukesh B. Suthar

Richard R. Tamesis

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Keith G. Tokuhara

Tom S. Tooma

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Young-Hyun Oh

Sayjal J. Patel

Theresa P. Poindexter

Jeff J. Rutgard

David J. Tanzer

Harold P. Wallar

Orthopaedic Surgery

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.

Chair

Gary D. Botimer

Assistant chair

M. Daniel Wongworawat

Division of Arthroplasty Service

Gary D. Botimer
Head

Division of Hand Surgery

Barry E. Watkins
Head

Division of Spine Service

Wayne K. Cheng
Head

Primary faculty

Duane R. Anderson

Hrayr G. Basmajian

William S. Beal

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Wayne K. Cheng

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James A. Foley

Gary K. Frykman

Ronny G. Ghazal

Eric C. Gokcen

Barry S. Grames

Theodore K. Gregorius

Zachary S. Hadley

Gail E. Hopkins

Christopher M. Jobe

Connor LaRose

James D. Matiko

Clifford D. Merkel

Martin J. Morrison

M. Kenneth Mudge

Scott C. Nelson

Matilal C. Patel

Wesley P. Phipatanakul

Philip H. Reiswig

Barth B. Riedel

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Roy M. Rusch

Lorra M. Sharp

James E. Shook

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John C. Steinmann

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Barry E. Watkins

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Priya D. Krishna

Miguel Krishnan

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David G. McGann

George H. Petti, Jr.

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Charles E. Stewart III

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Secondary and adjunct faculty

Dennis Chang

John Y. Kim

Paul D. G. Kim

Mia C. Perez

Pathology and Human Anatomy

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, medical students, and residents.

Chair

Paul C. Herrmann

Division of Anatomy

Pedro B. Nava, Jr.
Vice Chair and Head

Division of Laboratory Medicine

James Pappas
Head

Division of Anatomic Pathology

G. William Saukel
Head

Division of Pathology

Darryl G. Heustis
Vice Chair

Division of Pediatric Pathology

Craig W. Zuppan
Head

Primary faculty

Marie-Rose M. L. Akin

John C. Banks, Jr.

Denise L. Bellinger

Brian S. Bull

Kenneth A. Cantos

Jeffrey D. Cao

Shobha L. Castelino-Prabhu

Donald R. Chase

Resa L. Chase

Evelyn B. Choo

Camilla J. Cobb

Jeremy K. Deisch

Diane K. Eklund

Bertha C. Escobar-Poni

Joy I. Fridey

Paul C. Herrmann

Darryl G. Heustis

W. William Hughes III

Yuichi Iwaki

Mary K Kearns-Jonker

Kelly S. Keefe

Justin C. Kerstetter

Michael A. Kirby

Ralph A. Korpman

John E. Lewis

Roland E. Lonser

Yamil Lopez

Pedro B. Nava

Kerby C. Oberg

Kimberly J. Payne

Norman H. Peckham

Mia C. N. Perez

Darrell K. Petersen

Ravi Raghavan

Anwar S. S. Raza

Heather L. Rojas

Edward H. Rowsell

Lawrence B. Sandberg

G. William Saukel

Frank R. Sheridan

Salvador Soriano Castell

Wesley T. Stevens

Kevin S. Thompson

Steven J. Trenkle

Jun Wang

Pamela J. Wat

Donald R. Wilson

Kenneth R., Wright

Craig W. Zuppan

Secondary and adjunct faculty

Marie-Rose M. L. Akin

J. Bruce Beckwith

Lee S. Berk

William M. Hooker

Pediatrics

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.

Chair

Richard E. Chinnock

Vice chair

Francis Chan

Division of Pediatric Allergy and Immunology

Yvonne F. Fanous
Head

Division of Pediatric Forensics and Child Abuse

Clare M. Sheridan-Matney
Section Chief

Division of Pediatric Gastroenterology

Manoj C. Shah
Head

Division of General Pediatrics and Adolescent Medicine

Ravindra Rao
Head

Division of Pediatric Genetics

Robin D. Clark
Head

Division of Pediatric Hematology/Oncology

Antranik A. Bedros
Head

Division of Pediatric Infectious Disease

Jane N. Bork
Head

Division of Pediatric Neonatology

Dounglas D. Deming
Head

Division of Pediatric Nephrology

Shobha Sahney
Head

Division of Pediatric Neurology

Stephen Ashwal
Head

Division of Pediatric Cardiology

Michael A. Kuhn
Head

Division of Pediatric Endocrinology

Eba H. Hathout
Head

Division of Pediatric Intensive Care

Shamel A. Abd-Allah
Head

Division of Pediatric Pulmonary

Yvonne F. Fanous

Head

Division of Pediatric Rheumatology

Wendy L. de la Pena
Head

Primary faculty

Gregory S. Aaen

Shamel A. Abd-Allah

Maria R. Abesa

Borhaan S. Ahmad

Nicole M. Antonio

Barbara K. Ariue

Stephen Ashwal

Huy D. Au

Jerome Badaut

Thomas J. Bahk

Freddie B. Balguma

Heather M. Barr

Nerida T. Bates

Marti F. Baum

Lindsay N. Bautista

Antranik A. Bedros

Arlin B. Blood

Jane N. Bork

Vince Patrick R. Cacho

Bronwyn Carlson

Cameo A. Carter

Francis D. W. Chan

Yvonne W. Chan

Richard E. Chinnock

Jessica R. Claridge

Alexandra M. Clark

Robin D. Clark

Drew C. Cutler

Adam J. Czynski

Althea P. Daniel

Wendy L. de la Pena

Douglas D. Deming

Jimmy H. Eguchi

Janeth C. Ejike

Edward N. Elmendorf III

David G. Erickson

Yvonne F. Fanous

Elba E. S. Fayard

Aprille D. Febre

Nancy R. Fernando

Ross Fisher

Matthew B. Fong

Maria C. Garberoglio

Ada K. Garcia

Nirmalya Ghosh

Donna A. Goff

Shadi Farzin Gohar

June-Anne Gold

Mitchell R. Goldstein

Brent M. Gordon

Agnes K. S. Gugan

Shilpa Gupta

Ernie Guzman

Stephen W. Hamra

William S. Hamra

Aijaz Hashmi

Eba H. Hathout

Phuong Thao Hoang

Andrew O. Hopper

Mary M. Hung

Yomna A. Ibrahim

Mariam M. Ischander

Monhammad R. Jam

Leo C. Jeng

Nim Yeh K. Jiffry

Anup C. Katheria

William A. Kennedy

Albert Kheradpour

Soo Youn Kim

Sunhwa J. Kim

Wonha Kim

Marquelle J. Klooster

Vidhya Krishnamurthy

Micahael A. Kuhn

Mary P. K. Lam

Andrea Lambert

Ranae L. Larsen

Adrian P. Lavery

Sonny C. Y. Lee

Guillermo E. Loew

Michelle H. Loh

John W. Mace

Ravi Mandapati

Gilbert I. Martin

Lily B. Martorell-Bendezu

Mark Massi

Mudit Mathur

Erika A. B. McClure

Thurman A Merritt

David J. Michelson

Farrukh Mirza

Houchang D. Modanlou

Kyrra Moffatt

Ryan Mooradian

Christopher L. Morris

Joan D. Morris

Neda F. Mulla

Lanelle V. Nakamura

Cinda L. Nauertz

Mun-Wah Ng

Khiet D. T. Ngo

Yona Nicolau

Pushpa Nowrangi

Andre Obenaus

Kimberly N. Otsuka

Andrea Pardo

Ricardo L. Peverini

Raylene M. Phillips

Robert E. Piecuch

Allison A. Przekop

Emmeline R. Pulido

Sonea I. Qureshi

Ravindra Rao

Jason T. Read

Sharon K. Riesen

Sarah M. Roddy

Sharis N. Rostamian

Shobha Sahney

Gerald Saks

Cheryl Sanchez

Linette M. Sande-Lopez

Manoj C. Shah

Tamara M. Shankel

Clare M. Sheridan-Matney

Rita Sheth

Kozue Shimabukuro

Stanford K. M. Shu

Melissa D. Siccama

Tabitha E. Solomon

Maulin S. Soneji

Catherine A. Tan

Linh A. Tieu

Cynthia H. Tinsley

Stephen B. Treiman

Giang Sinh T. Truong

Trinh T. Truong

Diana L. Trupp

Samantha F. Tschen

Daved W. van Stralen

Chad J. Vercio

Sharon M. Weinberger

Stacey D. Wiles

Karen A. Winston

Valerie Y. M. Wong

Sidney S. C. Wu

Linda L. Yang

George S. Yanni

Amy D. Young-Snodgrass

Xiangpeng Yuan

Secondary faculty

Danilyn M. Angeles

Joanne E. Baerg

Leonard L. Bailey

Besh R. Barcega

Lance E. Brown

David A. Chamberlin

Kay Chea

Kathleen J. Clem

Stephen W. Corbett

T. Kent Denmark

Steven M. Green

Gregory T. Guldner

Aqeel S. Kahn

Grace Jee-Eun Kim

Tommy Y. H. Kim

Miguel Krishnan

Lilit Minasyan

Donald C. Moores

James A. Moynihan

Kimberly J. Payne

Peter R. Przekop

Anees Y. Razzouk

Tamara L. Thomas

Andrea W. Thorp

Deborah L. Washke

Christopher G. Wilson

Lionel W. Young

Timothy P. Young

Kimberly R. Zimmerman

Alexander Zouros

Emeritus faculty

B. Lyn Behrens

Physical Medicine and Rehabilitation

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 they 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.

Chair

Murray E. Brandstater

Primary faculty

Murray E. Brandstater

Beryl H. Bull

Anne T. Cipta

Michael J. Davidson

Travis G. Fogel

Michael J. Gilewski

Gerald R. Goodlow

Yvette A. Holness

Melanie C. N. Irwin

Divakara Kedlaya

Jien S. Kim

Mary I. Kim

Robertus H. Kounang

Daniel M. Kwon

Esther C. Lee

Jonathan K. C. Lee

Cid Nazir

John E. Owens

Anita M. Pai

Scott R. Strum

Secondary faculty

Gordon W. Peterson

Plastic and Reconstructive Surgery

Chair

Subhas C Gupta

Primary faculty

Ghada Y. Afifi

Dennis K. Anderson

Troy J. Andreasen

Della C. Bennett

Walter T. Y. Chang

Gyu Chin

James Chui

Derek G. Cody

Andrew T. Cohen

Norberto E. Collins

Brian J. Eichenberg

Grace S. Elias

Stacey H. Francis

Subhas C. Gupta

Robert A. Hardesty

Cherrie A. Heinrich

Ginard I. Henry

Michael E. Hill

Sharon L. Kalina

Esther Y. Kim

Hahns Y. Kim

Ravi V. Kiran

Darren Leong

Mark C. Martin

Duncan A. G. Miles

Daniel C. Mills II

Anil P. Punjabi

Andrea O. Ray

Charlotte S. Resch

Frank R. Rogers

Gordon H. Sasaki

Catherine A. Walsh

Stephen S. West

A. Andrew Wongworawat

Adjunct faculty

Allen Gabriel

James O. Greek III

G. Patrick Maxwell

Brinda Thimmappa

Preventive Medicine

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.

Chair

Wayne S. Dysinger

Primary faculty

Frederick M. Bischoff

Michael A. Caruso

Bonnie I. Chi-Lum

Amarilda A. Christensen

T. Allan Darnell

Marc J. Debay

Hans A. Diehl

Wayne S. Dysinger

Linda H. Ferry

Dominique M. Fradin-Read

Gary E. Fraser

Eric K. Frykman

Andrew H. Guo

George E. Guthrie

Kenneth W. Hart

Richard H. Hart

Ronald P. Hattis

Ionela O. Hubard

Cameron D. Kaiser

Pejman Katiraei

Synnove M. F. Knutsen

Jason L. Lohr

Ariane Marie-Mitchell

Susanne B. Montgomery

Joel R. Mundall

Eric Ngo

Michael J. Orlich

Alma M. Palisoc

Warren R. Peters

Ernest J. Prochazka

Joon W. Rhee

Douglas C. Richards

Paula D. Scariati

Akbar Sharip

Wilfred W. Shiu

Katherine E. Sljuka

Glen A. Thomazin

Aung Thu

Juna Tsao

Sylvie Wellhausen

Loretta Wilber

Dave A. Williams

Wesley S. Youngberg

Secondary and adjunct faculty

Mihran H. Ask

Gilbert M. Burnham

Mohamed H. Ismail

Karen Jaceldo-Siegl

Jayakaran S. Job

John H. Kelly, Jr.

Wonha Kim

Donald J. Kurth

Tricia Y. Penniecook

Serena Tonstad

Psychiatry

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.

Chair

William G. Murdoch, Jr.

Vice chair

William H. McGhee

Primary faculty

Kristen K. Abrams

Julie C. Albert

Louis R. Alvarez

Donald L. Anderson

Ara M. Anspikian

Nenita N. Belen

Basil G. Bernstein

Venkatesh G. Bhat

Daniel L. Binus

Andrew C. Blaine

Stephanie L. Bolton

William G. Britt III

Chadwick J. Burgdorff

Clarence Carnahan, Jr.

Anca Chiritescu

Antonia Ciovica

Irene Ciovica

Richard T. Cranston

Lorie T. DeCarvalho

Ramila D. Duwal

Kari M. Enge

Mubashir A. Farooqi

Carlos R. Fayard

Mendel J. Feldsher

Ron S. Foo

Teresa Frausto

Ihor A. Galarnyk

Monika S. Gierz

Leia D. Gill

Raafat W. Girgis

George T. Harding IV

Mark G. Haviland

William A. Hayton

Douglas B. Holl

Joshua L. Horsley

Jerry D. Hoyle

Cameron J. Johnson

Y. William Kim

Kevin M. Kinback

Winifred L. Klop

George Koplioff

Maher S. Kozman

Henry L. Lamberton

Larry C. Lawrence

Timothy T. Lee

Valerie S. L. Leong

Jonson J. Lin

Jeffrey N. Mar

J. Stephen Maurer

William H. McGhee

Kelli L. McSwan

Jonathan M. Meyer

Athanasios A. Mihas

Magdi S. Mikhael

Wadsworth H. Murad

William G. Murdoch, Jr.

Thuy Huynh T. Nguyen

Melissa J. Pereau

Lisa Phillips

George J. Proctor

Peter R. Przekop

John P. Riesenman

Patricia J. D. Roth

William G. Roth

Neeta C. Saheba

John C. Stockdale

John D. F. Tarr

Jason S. Thomas

Khushro B. Unwalla

E. Ray Verde

Roger S. Wenger

Dawn M. White

Ricardo J. Whyte

Bryan M. Wick

Deane L. Wolcott

Secondary faculty

Mark A. Welch

Radiation Medicine

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.

Chair

Jerry D. Slater

Vice chair, Clinical Affairs

David A. Bush

Vice chair, Research Affairs

James M. Slater

Primary faculty

Nathan R. Brandstater

David A. Bush

Dongrak Choi

John F. Dicello

Sharon Y. Do

Abiel Ghebemedhin

B. Rodney Jabola

Joseph I. Kang

Ari Katerelos

Lilia N. Loredo

Daniel W. Miller

Ivan C. Namihas, Jr.

James C. Nelson

Prashanth K. Nookala

Baldev R. Patyal

William Preston

Reinhard W. Schulte

James M. Slater

Jerry D. Slater

Marcelo E. Vazquez

Ning Wang

Andrew J. Wroe

Gary Y. Yang

Inhwan Yeo

Secondary and adjunct faculty

Vladimir Bashkirov

Eleanor A. Blakely

Daila S. Gridley

Xiao W. Mao

Gregory A. Nelson

Michael J. Pecaut

Richard S. W. Sun

Roman Vlkolinsky

Nathan R. Wall

Radiology

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.

Chair

David B. Hinshaw, Jr.

Vice chair, Clinical Services

Hans P. Saaty

Division of Abdominal Imaging

Thomas Kelly
Co-Head

Gregory E. Watkins
Co-Head

Division of Chest Imaging

Kendra L. Fisher
Co-Head

Shannon R. Kirk
Co-Head

Division of Diagnostic Ultrasound Imaging

Glenn Rouse
Head

Division of Interventional Neuroradiology

J. Paul Jacobson
Head

Division of Interventional Radiology

J. Paul Jacobson

Head

Division of ENT Imaging

N. Dan Wycliffe
Head

Division of General Diagnostic Radiology

Kendra L. Fisher
Head

Division of Magnetic Resonance Imaging

David B. Hinshaw
Head

Division of Musculoskeletal Imaging

Allie K. Blackburn
Co-Head

ALexander Chien
Co-Head

Division of Nuclear Medicine

Gerald A. Krik
Head

Division of Neuroradiology

J. Paul Jacobson
Head

Division of Outpatient FMO General Diagnostic Imaging

Won-Chul Bae
Head

Division of Pediatric Radiology

Lionel Young
Head

Primary faculty

Won-Chul Bae

Donald T. Barnes

Brenda L. Bartnik-Olson

Somnath Basu

Allie K. Blackburn

Patrick J. Bryan

Jerome Burstein

Alexander J. Chien

Cherie A. Colbert

Christopher D. Cumings

Sonia G. Dhaliwal

Richard D. Dunbar

John F. Feller

Kendra L. Fisher

Edward Gabriel

David W. Gentry

Mark S. Girguis

Matthew A. Grube

E. Mark Haacke

Christopher Hancock

Sheri L. Harder

Anton N. Hasso

David B. Hinshaw, Jr.

Brian L. Holloway

Barbara A. Holshouser

Steve M. Hom

Christine Hyun

J. Paul Jacobson

Karen N. Kazanjian

Thomas J. Kelly

Daniel K. Kido

Monika L. Kief-Garcia

Gerald A. Kirk

Shannon R. Kirk

Evan D. Lehrman

Joseph G. Llaurado

Jeanine A. McNeill

Milon J. H. Miller

Michael Neglio

Udochukwu E. Oyoyo

Peter H. Pham

Moussa Raiszadeh

Samuel M. Randolph

Glenn A. Rouse

Hans P. Saaty

Victor W. Shi

Douglas C. Smith

Jason C. Smith

Thu T. Tang

Karen A. Tong

Richard J. Tully

Joseph S. Unis

James L. Wolfsen

Beverly Wood

Yen-Ying Wu

N. Dan Wycliffe

Alex C. Yi

Lionel W. Young

Xueran Zhao

Secondary and adjunct faculty

Samuel Achilefu

Edwin L. Christiansen

Gary P. Foster

James B. Slater

Emeritus faculty

Phiroze E. Billimoria

Isaac Sanders

Geoffrey A. Gardiner, Sr.

Surgery

The following goals of the Department of Surgery are in harmony with the stated purposes and philosophy of Loma Linda University School of Medicine.

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.

Chair

Carlos A. Garberoglio

Division of Colorectal

Kevork K. Kazanjian
Head

Division of General

Vacant

Division of Pedatric

Donald C. Moores
Head

Division of Surgical Oncology

Carlos A. Garberoglio
Head

Division of Transplant

Michael E. de Vera
Head

Division of Trauma

Richard D. Catalano
Head

Primary faculty

John Agapian

Yousef G Amaar

Joanne E. Baerg

Pedro W. Baron

Brian E. Bates

Jack L. Bennett

James A. Brown

Jacqueline J. Carter

Richard D. Catalano

Lori J. H. Chow

Chi Y. Chung

Michael E. Chupp

N. Eugene Cleek

John T. Culhane

Joseph V. Davis III

Richard E. Davis

Aron J. Depew

Michael E. de Vera

Clifford C. Eke

Arvand Elihu

Carlos A. Garberoglio

Scott Gaspard

Fekede W. Gemechu

Gerald Gollin

Nephtali R. Gomez

Paul E. Gray

Lawrence A. Harms

Ryan A. Hayton

Lawrence E. Heiskell

Alan S. Herford

Farabi M. Hussain

Janet K. Ihde

Victor C. Joe

Samir D. Johna

Kevork K. Kazanjian

Stephen M. Kelley

Simon M. Keushkerian

Faisal A. Khan

Daniel D. Klaristenfeld

Arputharaj H. Kore

Fariborz Lalezarzadeh

Yong-Kwon Lee

Uriel R. Limjoco

H. Daniel Ludi

Sharon S. J. Lum

Xian Luo-Own

M. C. Theodore Mackett

Ata Mazaheri

Marcos J. Michelotti

Lester L. Mohr

Donald C. Moores

Andre C. Nguyen

Karen R. O'Bosky

Thomas A. O'Callaghan

Clifton D. Reeves

Mark E. Reeves

Jill E. Reiss

Aleksandr A. Reznichenko

Jorge L. Rivera

Antonio E. Robles

Gisella L. Sandy

Keith R. Scharf

Maheswari Senthil

Gillian L. Seton

Gregory S. Shank

Naveenraj L. Solomon

Bruce C. Steffes

Arnold D. Tabuenca

Derya U. Tagge

Edward P. Tagge

Matthew S. C. Tan

Keir J. Thelander

David C. Thompson

Jason A. Tomlin

David Turay

David L. Vannix

Noel S. Victor

Jason M. Wallen

Hansen S. Wang

Matthew T. Wilson

David T. W. Wong

J. Frank Yamanishi

Robert M. Yuhan

Kristine B. Zmaj

Secondary and adjunct faculty

Waldo Concepcion

Douglas W. Cook

Ihab R. Dorotta

Charles K. C. Hu

Sunggeun Samuel Im

Nathan R. Wall

Emeritus faculty

Ralph J. Thompson, Jr.

Edwin E. Vyhmeister

Urology

Chair

Herbert C. Ruckle

Primary faculty

Javier L. Arenas

Seetharaman Ashok

Dalton D. Baldwin

Gary A. Barker

David A. Chamberlin

Minh-Hang Chau

Victor C. Ching

David A. Hadley

Dean A. Hadley

H. Roger Hadley

Noel T. C. Hui

Edmund Y. Ko

Paul D. Lui

John C. Prince

Joseph L. Raffel

Herbert C. Ruckle

Michael A. Sanford

Andrea Staack

Steven C. Stewart

Robert R. Torrey, Jr.

Christopher K. L. Tsai

Adjunct faculty

J. David Moorhead

School of Nursing

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."

Marilyn Herrmann, 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 Doctor of Nursing Practice degree began in 2010.

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 (2009) was by the Commission on Collegiate Nursing Education (CCNE) (One Dupont Circle NW, Suite 530, Washington, DC 20036-1120). Council on Accreditation of Nurse Anesthesia Education Programs (COA) received initial accreditation in 2011. The California Board of Registered Nursing (P. O. Box 944210, Sacramento, CA 94244-2100) granted continuing approval in 2011. Consumers are encouraged to contact CCNE, COA or BRN with comments about the program.

Agency membership

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, Council on Accreditation of Nurse Anesthesia Education Programs (COA), and Western Institute of 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.

Programs of study

The School of Nursing prepares professional nurses to practice with a Christian perspective.

1. The baccalaureate degree curriculum is designed to prepare competent, beginning-level professional nurses who are committed to excellence in practice.
2. The master's degree in the nursing program is designed to prepare nurses for leadership as advanced practice registered nurses, nurse educators, or nurse administrators.
3. The Doctor of Nursing Practice degree is designed to prepare nurses for leadership in the clinical setting.
4. The Doctor of Philosophy degree program is designed to prepare nurse scholars for leadership in education, administration, and research.

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 affected by 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.

Dean

Marillyn H. Herrmann

Associate Dean, Academic Affairs and Graduate Nursing

Elizabeth Bossert

Associate Dean, Student Affairs and Undergraduate Nursing

Dynnette Hart

Associate Dean, Practice and Research

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Primary full-time faculty

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Kurt D. Cao

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Briana Maynor

Bonnie Meyer

Enrique Molina

Christine Neish

Fayette K. Nguyen-Truax

Jan Marie Nick

Barbara Ninan

Jacqueline Paik

Nancie Parmenter

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Anne Berit Petersen

Patricia K. Pothier

Edelweiss Ramal

Karen Ripley

Lisa Roberts

Nancy Sarpy

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Nancy Testerman

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Judith Storfjell

Elizabeth Johnston Taylor

Secondary faculty

Danilyn Angeles

Richard Applegate

Carl Collier

Ihab Dorotta

Mark Haviland

John Lenart

Robert Martin

John H. Zhang

Emertus faculty

Margaret Burns

Vaneta Condon

Jeanette Earnhardt

Patricia Foster

Katty Joy French

Helen E. King

Penny Gustafson Miller

Lois H. Van Cleve

Ruth S. Weber

Clarice W. Woodward

Voluntary faculty

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Shayne Bigelow-Price

Christina Bivona-Tellez

Raquel Branom

Cora Caballero

Rebecca Carlton

Glenda M. Castillo-Yetter

Elizabeth J. Dickinson

Jane Doetsch

Navid Furutan

Kim Hillyer

Marie Hodgkins

Kimberly Johns

Angela Jones

Susan L. Krider

Jan Kroetz

Jean L. Newbold

Jennifer Olson

Denise Petersen

Sofia Puerto

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Helen Staples-Evans

Thomas Sweeney

Patricia Townsend

Joe Wilkinson

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Joanna J. Yang

Janice R. Zumwalt

Adjunct faculty

Kari Firestone

John Nagelhout

Geraldine Padilla

Marilyn Savedra

Jeannine Sharkey

Karen Tetz

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 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 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 Church and educational system.

Admission application information is located at <nursing.llu.edu>.

Admission requirements

Students entering the School of Nursing must complete Loma Linda University background check requirements, 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. New undergraduate students are required to show evidence of completion of a first aid course.

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 object—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; follow instructions; and use 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 personal 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.

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.

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.

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.

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 2013-2014

The charges that follow are subject to change without notice.

Tuition

Tuition charge—undergraduate nonclinical, special, certificate, and part-time students

$599	Credit, per unit
$285	Clinical course fees per clinical course
$299	Audit, per unit

Tuition charge—graduate

$732	M.S. per unit credit
$850	D.N.P./Ph.D. per unit credit
$315	Clinical course fees per clinical course
$366	Audit, per unit
$1,015	CRNA per unit credit

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	Application
$250	Deposit to hold place in class (undergraduate only)
$500	Deposit to hold place in class (D.N.P.)
$1,000	Deposit to hold place in class (CRNA)

Examinations

$299	Undergraduate per unit credit (challenge, equivalency)
	Graduate:
$366	Master's per unit credit
$508	CRNA per unit credit
$425	D.N.P./Ph.D. per unit credit
$50	Early examination
$50	Application to change concentration or degree program

Special fees

$750	Enrollment fee per quarter
$599	Per quarter for NRSG 497 Advanced Clinical Experience

Finance

$100	Tuition installment
$100	Late payment
$25	Returned check

Registration

$100-$200	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.

Licensing examinations

Registration and certification examinations and license fees are set by the state.

Other charges

$50	Laboratory make-up fee

On- and off-campus student housing

Students may go to <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 <http://www.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.

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.

Agatha Hodgins Award for Nurse Anesthesia

The Agatha Hodgins Award for Nurse Anesthesia is given in honor of the recognized founder of American Association of Nurse Anesthetists.

The Award is given to the graduating nurse anesthesia student with the highest scholastic achievement.

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 students with more information, as well as with application forms.

Anabelle Mills Hills Scholarship
Angel of Care Scholarship
Aurel E. Burdick Scholarship
Bartlett (Lillian M.) Scholarship
Beaver Medical Clinic Foundation
Beverly Henry Leadership Scholarship
Catherine Christiansen Scholarship
Charlie Jo Morgan Student Scholarship
Christiansen Scholarship
Class of 1941 Endowed Scholarship
Class of 1949 Tutoring
Class of 1954 Anniversary Fund
Class of 1956B Scholarship
Class of 1959B Scholarship
Class of 1964 Scholarship
Class of 1966 Mentor Scholarship
Class of 1969 Scholarship
Class of 1992 Scholarship
Clinical Study Abroad Scholarship
Dean's Nursing Scholarship
Doctor on Nursing Practitioner Scholarship
Emori Nursing Scholarship
Fink (Oreda) Memorial Scholarship
Gertrude Haussler and Maxine Darling Scholarship
Graduate Nursing Scholarship
Halpenny Memorial Scholarship
Harriett Miller Endowed Scholarship
Hazelton Sisters Scholarship
Herving SDA Scholarship
Hispanic Student Scholarship
H. W. Miller & S.S. Chow Scholarship
Isabelle Wilson Rees Scholarship
James A. and Marge H. Jetton Endowed Student Aid Fund
JBG Endowment
JBG Endowment Income
Joylyn Jennings Young Memorial Endowment
Karen J. Radke Doctoral Student Fellowship
King (William and Helen) Endowment
Lam Family Endowment Fund for Nursing Students
Lee Pak Kim Scholarship Endowment Fund
Leslie Y. and Cora M. Low Scholarship
Linda Culwell Memorial Scholarship
Lisa Holst Crutsinger Memorial Fund
Lucile Lewis Scholarship
Marilyn Christian Smith Gearing Scholarship
Marion Ingemann Wilson Memorial Scholarship
Marjorie Low Lui Fund
Marjorie D. Jesse Scholarship
Marlene Gaskins Memorial Scholarship
Mary Adeline Farnsworth Memorial Scholarship
Maxwell/Martin Scholarship
Nelson Nursing Scholarship
Nursing Work Experience Scholarship
Officer (Ruth) Scholarship
PhD in Nursing
PhD Scholarship for International Students
Rickard Memorial Scholarship
Rosie Voss Worthy Nursing Scholarship
School of Nursing Scholarship
Student Registered Nurse Anesthetists Scholarship
Swatek Endowed Scholarship
Undergraduate Scholarship
Voss Worthy Nursing Student Scholarship
Webb Scholarship
Woodall (Harry M.) Scholarship
Woodruff (George and Ollie) Scholarship

Undergraduate

Curricula overview

The following sections describe the undergraduate curricula offered by the School of Nursing and list the courses each student must complete. Students are expected to follow the general policies of the University, the school, and specific policies of their degree curriculum. The school reserves the right to update and modify curricula content to keep current with trends in health care.

B.S. degree

The purpose of the School of Nursing's baccalaureate degree nursing curriculum is to prepare competent clinicians 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 curriculum leading to a Bachelor of Science (B.S.) degree is consistent with the faculty's belief that students should be broadly educated. The focus is on the synthesis of nursing knowledge and skills with those from the humanities and sciences. Preparation for practice includes experiences in primary, secondary, and tertiary health care—with clients from various ages, cultural groups, and socioeconomic strata. The curriculum is based on the Neuman Systems Model.

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 regional 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. 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.

Learning outcomes for baccalaureate nursing

The learning outcomes of the baccalaureate nursing program are designed to prepare competent nursing professionals.

1. *Wholeness:* Demonstrate the University philosophy of wholeness in their personal and professional lives.
2. *Values:* Demonstrate professionalism through understanding the importance of Christ-centered values.
3. *Critical Thinking:* Use scholarship as a basis for critical thinking and evidence-based practice.
4. *Lifelong Learning:* Develop a commitment to discovery and lifelong learning.
5. *Communication:* Demonstrate effective communication skills in English.
6. *Technology:* Apply information management and patient/client care technology to the practice of nursing.
7. *Diverse World:* Embrace and serve a diverse world.
8. *Collaboration:* Employ interprofessional communication and collaboration to improve patient/client health outcomes.
9. *Concept Integration:* Demonstrate integration of concepts from general education into their baccalaureate generalist nursing practice.
10. *Leadership*: Apply principles of organizational and systems leadership into quality care and patient/client safety.
11. *Administrative Competence*: Practice within the purview of health-care policy, finance, and regulatory environments.
12. *Clinical Prevention*: Support clinical prevention through population health practices.
13. *Baccalaureate-level Practice:* Integrate baccalaureate-level nursing skills into their practices.

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: <http://www.rn.ca.gov/>.

Four B.S. degree options

1. Standard (generic) B.S. degree curriculum
   Students must complete all prerequisite courses prior to starting clinical courses.
2. B.S. degree curriculum [for student with bachelor's degree in another area]. Applicants for this track must fulfill the same admission requirements (p. 372) and degree requirements as the standard B.S. degree. 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 who choose this option will take NRSG 414 Management and Leadership for the Working Nurse in lieu of NRSG 419 Capstone: Management and Leadership in Nursing and NRSG 420 Professional Preparation for 3 units versus 2 units. 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.
3. 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. The returning RN must have completed all prerequisite courses prior to acceptance into the program and must meet the following noncourse requirements:
   - Current RN license
   - A.S. degree or diploma in nursing
4. B.S. degree for the licensed vocational nurse
   Students must complete all prerequisite courses prior to starting clinical courses.

Precourse preparation for nursing (optional)

These courses are required for students in the Pipeline Program. The purpose is to prepare students to be successful in regular baccalaureate nursing classes. These courses do not count toward the nursing major. A student earning a course grade below 3.0 (B) will not be able to continue in Loma Linda University School of Nursing.

NRSB 101	Critical Thinking and Learning Strategies for Nursing	2
NRSB 102	Science Principles Applied to Nursing	2
NRSB 103	Introduction to Mathematics for Nursing	1
NRSB 104	Medical Terminology for Nursing	2
NRSB 105	Writing for Nursing	3
NRSB 106	Reading in Nursing	2

Nondegree option

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, neither will a degree or certificate be issued nor will a graduation exercise be included; and the student will not be eligible to wear the school pin, cap, or other insignia. In addition, an RN license obtained through this option is valid in California and may not be 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 higher
G.P.A. of at least 2.0

Academic plan

Required courses

Required courses		
NRSG 217	Psychiatric Mental Health Nursing	6
NRSG 308	Adult Health Nursing I [#]	8
NRSG 225	LVN Bridge Course [+]	4
NRSG 317	Adult Health Nursing II	8
NRSG 420	Professional Preparation	2
NRSG 499	Directed Study	1
Optional courses (to complete 45 units)		
NRSG 314	Obstetrical and Neonatal Nursing	6
NRSG 315	Child Health Nursing	6
NRSG 316	The Nursing Role in Health Promotion	4
NRSG 408	Critical Care Nursing	6
NRSG 409	Home Health Nursing	3

This course may be challenged.

+ Upon completion of this course, students are credited with NRSG 214 Fundamentals of Professional Nursing (8 units), NRSG 216 Basic Nursing Skills and Health Assessment (2 units), and NRSG 309 Gerontological Nursing (2 units).

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 the LLU School of Nursing.

Academic policies and practices

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. At minimum, 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. Enrollment in the School of Nursing will be terminated if a student receives two grades of C- or below in nursing or required cognates.

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. Theory on three tardies equal an absence. Students must make up for absences from clinical 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 during assigned clinical laboratory time. Each student will be expected to be able to apply basic theoretical concepts to clinical practice by assessing, planning, and 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 fail the course or be dropped from the program.

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 misdemeanors, driving citations, 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 Section II 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. 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.
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 or Summer 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 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.

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 — BS (generic)

Admissions

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.

Application deadlines

Applicants seeking undergraduate admission must have the application process completed by the dates indicated in the following.

- Autumn Quarter—March 31
- Winter Quarter—August 15
- Spring Quarter—November 1

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

1. A high school diploma or its equivalent from an accredited secondary school.
2. A current first aid certificate.
3. Current cardiopulmonary resuscitation (CPR) certificate approved by the American Heart Association.
4. Basic computer literacy.
5. Cumulative G.P.A. of 3.0 on all college course work. Grades below a "C" are nontransferable.
6. 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.
7. Science courses must have been taken within five years or validated at Loma Linda University.
8. Entrance tests required of all incoming students who are not registered nurses.
9. An interview arranged by the director of admissions and an onsite essay are required.
10. Prerequisite courses listed below:

Domain 1: Religion and humanities	28
Religion:*	
Prorated, based on units taken at a Seventh-day Adventist college or university. (See University Division of General Studies for religion and humanities specifics.)	
Humanities:	
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)	
Domain 2: Scientific inquiry and analysis (43 quarter units)	
Natural Sciences (31 units minimum):	
Intermediate algebra (or high school algebra II)—not counted toward domain total	R
Introduction to physics (or high school physics)	R
Human anatomy and physiology with laboratory, complete sequence	8
Introduction to organic chemistry and biochemistry, with laboratory	8
Basic medical microbiology with laboratory	5
Social Sciences (12 units minimum):	
Sociology or anthropology	4
General psychology	4
Developmental psychology (life span development)	4
Domain 3: Communication (13 quarter units)	
English composition, complete sequence	9
Speech	4
Domain 4: Health and wellness (2-6 quarter units)	
Physical education (two separate physical activity courses)	R
Nutrition (taken at LLU)	4
Domain 5: Electives	
To meet total GE requirements of 68 quarter units and total degree requirements of 193 quarter units.	

* Some of these will be completed while a student at LLU

R Required

Pre-entrance requirements (p. 25):

1. A completed background check.
2. Health clearance, including immunizations as outlined in the "Admission Policies and Information."

Program requirements

Major		
NRSG 214	Fundamentals of Professional Nursing	8
NRSG 216	Basic Nursing Skills and Health Assessment	4
NRSG 217	Psychiatric Mental Health Nursing [1]	6
NRSG 224	Nursing Pathophysiology	4
NRSG 305	Nursing Pharmacology	3
NRSG 308	Adult Health Nursing I	8
NRSG 309	Gerontological Nursing	4
NRSG 314	Obstetrical and Neonatal Nursing	6
NRSG 315	Child Health Nursing	6
NRSG 316	The Nursing Role in Health Promotion	4
NRSG 317	Adult Health Nursing II	8
NRSG 324	Nursing Informatics and Evidence-Based Practice	3
NRSG 404	Introduction to Epidemiology for Nursing	3
NRSG 408	Critical Care Nursing	6
NRSG 409	Home Health Nursing	3
NRSG 415	Community Mental Health Nursing	4
NRSG 416	Public Health Nursing	4
NRSG 416L	Public Health Nursing Clinical Lab	4
NRSG 418	Capstone Nursing Practicum	8
NRSG 419	Capstone: Management and Leadership in Nursing	5
NRSG 420	Professional Preparation	2
NRSG 429	Nursing Research	3
Cognates		
DTCS 311	Human and Clinical Nutrition for Nursing [2]	4
ENGL 300	Writing Seminar for Health-Care Professionals [3]	2
REL _4__	Upper-division Religion [4]	9
STAT 414	Introduction to Biostatistics I	3
STAT 415	Computer Applications in Biostatistics	1
Choose from the following:		2

RELT 406	Adventist Beliefs and Life	
RELT 423	Loma Linda Perspectives	
RELT 436	Adventist Heritage and Health	
RELT 437	Current Issues in Adventism	
Total Units		**127**

1 May be taken concurrently while at junIor-level status

2 DTCS 312 Clinical Nutrition for Nursing may be taken in place of DTCS 311 Human and Clinical Nutrition for Nursing if transfer credit includes articulated course in human nutrition

3 Course may be waived based on selected admission criteria

4 Choose at least one course with an RELE, and one with an RELR prefix. The remaining units may be chosen from any of the three prefixes (RELE, RELR, RELT). Total units required are based on the percentage of course work from an SDA college/university. The maximum requirement is 16 units including transfer credit.

Total unit requirement for graduation is 193 quarter units (transfer units plus above listed courses).

Normal time to complete the program

2.66 years (8 academic quarters) at LLU) — based on full-time enrollment; part time permitted

Nursing — RN to B.S.

Admissions

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.

Application deadlines

Applicants seeking undergraduate admission must have the application process completed by the dates indicated in the following.

- Autumn Quarter—March 31
- Winter Quarter—August 15
- Spring Quarter—November 1

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

1. A high school diploma or its equivalent from an accredited secondary school.
2. Grades below a C are nontransferable.
3. 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.
4. An interview with the RN-B.S.degree 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.
5. An Associate in Science degree or diploma from an accredited school of nursing.
6. A license to practice nursing in California as a registered nurse.
7. 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.
8. The following course prerequisites:

Domain 1: Religion and humanities (28 quarter units)	28*
Religion:	
Prorated, based on units taken at a Seventh-day Adventist college or university. (See University Division of General Studies for religion and humanities specifics.)	
Humanities:	
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)	
Domain 2: Scientific inquiry and analysis (43 quarter units)	
Natural Sciences (31 units minimum):	
Human anatomy and physiology with laboratory, complete sequence	8
Introduction to chemistry with laboratory, one quarter/semester	4
Basic medical microbiology with laboratory	5
Natural science electives	4
Social Sciences (12 units minimum):	
Sociology or anthropology	4
General psychology	4
Developmental psychology (life span development)	4
Domain 3: Communication (13 quarter units)	
English composition, complete sequence	9
Speech	4
Domain 4: Health and wellness (2-6 quarter units)	
Physical education (two separate physical activity courses)	R
Nutrition (taken at LLU)	I
Domain 5: Electives	
To meet total GE requirements of 68 quarter units and total degree requirements of 193 quarter units.	

* Some of these will be completed while a student at LLU

R Required

I Integrated in previous nursing course

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," under Admission Policies. Credit for 300-level nursing courses will be granted upon satisfactory completion of NRSG 337 Strategies for Professional Transition.

Program requirements

Major		
NRSG 324	Nursing Informatics and Evidence-Based Practice	3
NRSG 337	Strategies for Professional Transition	4
NRSG 404	Introduction to Epidemiology for Nursing	3
NRSG 407	Complex Nursing Concepts of Health and Disease	6
NRSG 414	Management and Leadership for the Working Nurse	6
NRSG 415	Community Mental Health Nursing	4
NRSG 416	Public Health Nursing	4
NRSG 416L	Public Health Nursing Clinical Lab	4

NRSG 424	Professional Practice for the Working RN [1]	7
or NRSG 418	Capstone Nursing Practicum	
NRSG 429	Nursing Research	3
Cognates		
ENGL 300	Writing Seminar for Health-Care Professionals [2]	2
REL_4__	Upper-division Religion [3]	4
STAT 414	Introduction to Biostatistics I	3
STAT 415	Computer Applications in Biostatistics	1
Choose from the following:		2
RELT 406	Adventist Beliefs and Life	
RELT 423	Loma Linda Perspectives	
RELT 436	Adventist Heritage and Health	
RELT 437	Current Issues in Adventism	
Total Units		**56**

[1] With appropriate experience as an RN, this course may be taken instead of NRSG 418 Capstone Nursing Practicum

[2] Course may be waived based on selected admission criteria

[3] Choose at least one course with an RELE, and one with an RELR prefix. The remaining units may be chosen from any of the three prefixes (RELE, RELR, RELT). Total units required are based on the percentage of course work from an SDA college/university. The maximum requirement is 16 units including transfer credit.

Total unit requirement for graduation is 193 quarter units (transfer units plus above listed courses).

Normal time to complete the program

1.33 years (four academic quarters] at LLU) — based on full-time enrollment; part time permitted

Nursing — LVN to B.S.

Admissions

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.

Application deadlines

Applicants seeking undergraduate admission must have the application process completed by the dates indicated in the following.

- Autumn Quarter—March 31
- Winter Quarter—August 15
- Spring Quarter—November 1

In addition to Loma Linda University (p. 24) admission requirements, the applicant must also complete the following requirements:

1. A high school diploma or its equivalent from an accredited secondary school.
2. Must be a licensed vocational nurse in the state of California.
3. A current first aid certificate.
4. Current cardiopulmonary resuscitation (CPR) certificate approved by the American Heart Association.
5. Basic computer literacy.
6. Cumulative G.P.A. of 3.0 on all college course work. Grades below a "C" are nontransferable.
7. 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.
8. Science courses must have been taken within five years or validated at Loma Linda University.
9. Entrance tests required of all incoming students who are not registered nurses.
10. An interview arranged by the director of admissions and an onsite essay are required.
11. Prerequisite courses listed below:

Course work will be evaluated to determine transfer status in clinical nursing classes.

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.

Domain 1: Religion and humanities	28
Religion:*	
Prorated, based on units taken at a Seventh-day Adventist college or university. (See University Division of General Studies for religion and humanities specifics.)	
Humanities:	
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)	
Domain 2: Scientific inquiry and analysis (43 quarter units)	
Natural Sciences (31 units minimum):	
Intermediate algebra (or high school algebra II)—not counted toward domain total	R
Introduction to physics (or high school physics)	R
Human anatomy and physiology with laboratory, complete sequence	8
Introduction to organic chemistry and biochemistry, with laboratory	8
Basic medical microbiology with laboratory	5
Social Sciences (12 units minimum):	
Sociology or anthropology	4
General psychology	4
Developmental psychology (life span development)	4
Domain 3: Communication (13 quarter units)	
English composition, complete sequence	9
Speech	4
Domain 4: Health and wellness (2-6 quarter units)	
Physical education (two separate physical activity courses)	R
Nutrition (taken at LLU)	4
Domain 5: Electives	
To meet total GE requirements of 68 quarter units and total degree requirements of 193 quarter units.	

* Some of these will be completed while a student at LLU

R Required

Religion is required for all students

Program requirements

Major		
NRSG 217	Psychiatric Mental Health Nursing [1]	6
NRSG 224	Nursing Pathophysiology	4
NRSG 225	LVN Bridge Course [2]	4
NRSG 305	Nursing Pharmacology	3
NRSG 308	Adult Health Nursing I	8
NRSG 314	Obstetrical and Neonatal Nursing	6
NRSG 315	Child Health Nursing	6
NRSG 316	The Nursing Role in Health Promotion	4
NRSG 317	Adult Health Nursing II	8
NRSG 324	Nursing Informatics and Evidence-Based Practice	3
NRSG 404	Introduction to Epidemiology for Nursing	3
NRSG 408	Critical Care Nursing	6
NRSG 409	Home Health Nursing	3
NRSG 415	Community Mental Health Nursing	4
NRSG 416	Public Health Nursing	4
NRSG 416L	Public Health Nursing Clinical Lab	4
NRSG 418	Capstone Nursing Practicum	8
NRSG 419	Capstone: Management and Leadership in Nursing	5
NRSG 420	Professional Preparation	2
NRSG 429	Nursing Research	3
Cognates		
DTCS 311	Human and Clinical Nutrition for Nursing [3]	4
ENGL 300	Writing Seminar for Health-Care Professionals [4]	2
REL_4__	Upper-division Religion [5]	9
STAT 414	Introduction to Biostatistics I	3
STAT 415	Computer Applications in Biostatistics	1
Choose from the following:		2
RELT 406	Adventist Beliefs and Life	
RELT 423	Loma Linda Perspectives	
RELT 436	Adventist Heritage and Health	
RELT 437	Current Issues in Adventism	
Total Units		**115**

1. May be taken concurrently while at junior-level status
2. Upon successful completion, students are credited with NRSG 214 Fundamentals of Professional Nursing (8 units), NRSG 216 Basic Nursing Skills and Health Assessment (2 units), and NRSG 309 Gerontological Nursing (2 units)
3. DTCS 312 Clinical Nutrition for Nursing may be taken in place of DTCS 311 Human and Clinical Nutrition for Nursing if transfer credit includes articulated course in human nutrition
4. Course may be waived based on selected admission criteria
5. Choose at least one course with an RELE, and one with an RELR prefix. The remaining units may be chosen from any of the three prefixes (RELE, RELR, RELT). Total units required are based on the percentage of course work from an SDA college/university. The maximum requirement is 16 units including transfer credit.

Total unit requirement for graduation is 193 quarter units (transfer units plus above listed courses).

Normal time to complete the program

2.33 years (7 academic quarters) at LLU — based on full-time enrollment; part time permitted

Graduate

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, as well as 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.

Academic policies

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 and meets the requirements of a course for the degree.
2. A maximum of 9 quarter units that have been previously applied to another degree may be accepted as advanced standing upon petition.
3. The maximum number of transfer credit towards a master's ordoctoral degree may not exceed 20 percent of the minimum credits required for the degree.
4. Following acceptance into a graduate program, all required courses must be taken at Loma Linda University.
5. Credits taken through NEXus for graduate courses are not considered transfer credits.
6. 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. Nondegree course work is not eligible for federal loans.

Academic standing

1. Course grades
   a. The expected earned grade level for graduate studies is a cumulative grade point average of 3.0 (B average) or higher.
   b. Students must earn a grade of B (85 percent) or higher in all courses. If the earned grade is less than a B, the course must be repeated, except as noted in A.3 and A.4 below.
   c. For all CNS and NP *clinical courses*, an earned grade of less than B (3.0) may not be repeated.
   d. For *all courses required nurse anesthesia*, an earned grade of less than B (3.0) may not be repeated.
2. Withdrawal and repeating courses
   a. A student may withdraw only once from any core, concentration, or clinical course. (See B.4 and B.5 below for exception for Nurse Anesthesia students).
   b. A student may repeat no more than one course in the program.
   c. Students requesting to repeat a clinical course due to a withdrawal are placed on a waiting list, according to the timing of the request.
   d. Nurse anesthesia students who withdraw from a course may not continue in the program.
   e. Nurse anesthesia students may not repeat a course.
3. Academic probation
   At the end of each quarter, student G.P.A.s will be reviewed. Students will be placed on probationary status if:
   a. the earned G.P.A. is less than 3.0 cumulatively
   b. if the earned G.P.A. is less than 3.0 in the nursing major
   c. if a course must be repeated due to a grade lower than an earned B in the CNS (core and concentration courses), Nursing Administration, Nursing Education concentration areas or in the DNP or PhD programs, the course must be retaken and a grade of B or higher earned before proceeding in the clinical sequence if the low grade occurred in a clinical area that allows a course to be repeated (Nursing Administration, Nursing Education and DNP). To repeat the course, it will be necessary to wait until the course is offered again and has space.
   While on probation, a student:
      i May not take the clinical focus courses, unless this is the course that must be repeated.
      ii May not submit the comprehensive project.
4. Academic probation may be removed when the student:
   a. Retakes the course and earns a grade of B or higher.
   b. Raises the G.P.A. to 3.0 or higher the next quarter.
   c. Academic termination.
5. Academic enrollment will be terminated if:
   a. The cumulative G.P.A. has not been raised to 3.0 or above while on academic probation.
   b. Any grade lower than B has not been raised when the course is retaken.
   c. A CNS or NP student earns a grade of B- (2.7) or lower in a *clinical course*.
   d. A nurse anesthesia student earns a grade of B- (2.7) or lower in *any course*.

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.

Clinical termination

A student may be dismissed from the program if there is evidence of:

1. unsafe clinical behavior in any of the areas of Knowledge, Skill and Attitudes
2. unethical clinical behavior, such as, but not limited to, falsification of records and/or reporting, photographing and/or recording in the clinical site, and posting patient information or photos on social media sites.

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. 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. Refer to University policy on satisfactory academic progress.

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 project

A written, comprehensive examination is required of all M.S. degree students. The student is expected to integrate, evaluate, synthesize and apply theories and research studied in the graduate program. The examination must be written after a substantial portion of the clinical work is completed, and is submitted before registering for the final two quarters of the program requirements.

Thesis and dissertation

Thesis is optional for the M.S. degree. The student's research, thesis, project 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.

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.

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 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 or Summer Quarter is expected to be present at the University's ceremony for conferring of degrees and awarding 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 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.

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.

Post-master's Certificates

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant to a post-master's certificate program in nursing must have the following:

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.

Application deadlines

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following.

1. A-GNP, FNP, PNP, Psych NP
   - Autumn Quarter—February 1
   - Winter Quarter—August 1
2.
3. CNS
   - Autumn Quarter—April 1

Pre-entrance requirements (p. 25):

1. Health clearance, including immunizations
2. Students must have a current California registered nurse license prior to enrollment.

Programs

Clinical Nurse Specialist

- CNS: Adult-Gerontology — certificate (p. 378)
- CNS: Pediatrics — certificate (p. 379)

Nurse Practitioner

- Family — certificate (p. 380)
- Neonatal — certificate (p. 380)
- Primary Care Adult-Gerontology — certificate (p. 381)
- Primary Care Pediatric — certificate (p. 381)
- Psychiatric — certificate (p. 382)

Clinical Nurse Specialist

CNS: Adult-Gerontology — certificate (p. 378)

CNS: Pediatrics — certificate (p. 379)

Clinical Nurse Specialist: Adult–Gerontology — Post-master's certificate

Prerequisite

Graduate-level pathophysiology
Advanced physical assessment

Core		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[1]	3.0	30	—	—	3.0
Totals		14.0	140	—	—	14.0
Clinical						
NRSG 530	Adult - Gerontology I	4.0	40	—	—	4.0
NRSG 531	Adult - Gerontology II	4.0	40	—	—	4.0
NRSG 532	Adult -Gerontology III	2.0	20	2.0	60	4.0
NRSG 533	Adult - Gerontology: Clinical Practicum[2]	—	—	15.0	450	15.0
Totals		10.0	100	17.0	510	27.0
Overall Totals		24.0	240	17.0	510	41.0

[1] Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

[2] Multiple registrations required to fulfill total unit requirement

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment; part time permitted

Clinical Nurse Specialist: Pediatrics — Post-master's certificate

Prerequisite

Graduate-level pathophysiology
Advanced physical assessment

Core		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[1]	3.0	30	—	—	3.0
Totals		14.0	140	—	—	14.0
Clinical						
NRSG 535	Pediatrics I	4.0	40	—	—	4.0
NRSG 536	Pediatrics II	4.0	40	—	—	4.0
NRSG 537	Pediatrics III	2.0	20	2.0	60	4.0
NRSG 538	Pediatrics: Practicum	—	—	15.0	450	15.0
Totals		10.0	100	17.0	510	27.0
Overall Totals		24.0	240	17.0	510	41.0

[1] Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment; part time permitted

Nurse Practitioner

Nurse Practitioner

- Family — certificate (p. 380)
- Neonatal — certificate (p. 380)
- Primary Care Adult-Gerontology — certificate (p. 381)
- Primary Care Pediatric — certificate (p. 381)
- Psychiatric — certificate (p. 382)

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

Core		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[1]	3.0	30	—	—	3.0
Totals		12.0	120	—	—	12.0
Clinical						
NRSG 650	Family Nurse Practitioner: Children and Adolescents	3.0	30	1.0	30	4.0
NRSG 652	Family Nurse Practitioner I	2.0	20	2.0	60	4.0
NRSG 653	Family Nurse Practitioner II	3.0	30	3.0	90	6.0
NRSG 654	Family Nurse Practitioner III	3.0	30	4.0	120	7.0
NRSG 655	Family Nurse Practitioner IV	3.0	30	4.0	120	7.0
NRSG 656	Family Nurse Practitioner V	—	—	7.0	210	7.0
Totals		14.0	140	21.0	630	35.0
Overall Totals		26.0	260	21.0	630	47.0

[1] Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

Normal time to complete the program

2 years, based on less than full-time enrollment

Neonatal Nurse Practitioner — Post-master's certificate

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	
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
RELE 524	Bioethics and Society[1]	3.0	30	—	—	3.0
Totals		7.0	70	—	—	7.0
Clinical						
NRSG 560	Neonatal Pharmacology	2.0	20	—	—	2.0
NRSG 619	Neonatal Nurse Practitioner I: Neonatal Advanced Physical Assessment[2]	3.0	30	1.0	30	4.0
NRSG 620	Neonatal Nurse Practitioner II[2]	3.0	30	2.0	60	5.0
NRSG 621	Neonatal Nurse Practitioner III[2]	3.0	30	2.0	60	5.0
NRSG 622	Neonatal Nurse Practitioner IV[2]	4.0	40	4.0	120	8.0
NRSG 629	Neonatal Nurse Practitioner V	4.0	40	4.0	120	8.0
NRSG 630	Neonatal Nurse Practitioner VI: Practicum	1.0	10	8.0	240	9.0

Totals	20.0	200	21.0	630	41.0
Overall Totals	27.0	270	21.0	630	48.0

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 Offered alternate years

Normal time to complete the program

2 years (7 academic quarters) based on less than full-time enrollment

Primary Care Adult–Gerontology Nurse Practitioner — Post-master's certificate

This 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[1]	3.0	30	—	—	3.0
NRSG 517	Theoretical Foundations for Advanced Practice[2]	4.0	40	—	—	4.0
Totals		12.0	120	—	—	12.0
Clinical						
NRSG 561	Primary Care Adult-Gerontology Nurse Practitioner I	2.0	20	2.0	60	4.0
NRSG 562	Primary Care Adult-Gerontology Nurse Practitioner II	3.0	30	3.0	90	6.0
NRSG 563	Primary Care Adult-Gerontology Nurse Practitioner III	3.0	30	3.0	90	6.0
NRSG 564	Primary Care Adult-Gerontology Nurse Practitioner IV	3.0	30	4.0	120	7.0
NRSG 565	Primary Care Adult-Gerontology Nurse Practitioner V	—	—	6.0	180	6.0
NRSG 569	Primary Care Adult-Gerontology Nurse Practitioner: Fragile Elders	3.0	30	1.0	30	4.0
Totals		14.0	140	19.0	570	33.0
Overall Totals		26.0	260	19.0	570	45.0

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 Or NRSG 530 Adult - Gerontology I

Normal time to complete the program

2 years (7 academic quarters) based on less than full-time enrollment

Primary Care 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, the American Nurses Certification Corporation, and 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[1]	3.0	30	—	—	3.0
NRSG 517	Theoretical Foundations for Advanced Practice[2]	4.0	40	—	—	4.0
Totals		12.0	120	—	—	12.0
Clinical						
NRSG 551	Primary Care Pediatric Nurse Practitioner I[3]	3.0	30	1.0	30	4.0
NRSG 552	Primary Care Pediatric Nurse Practitioner II[3]	3.0	30	4.0	120	7.0
NRSG 553	Primary Care Pediatric Nurse Practitioner III[3]	3.0	30	4.0	120	7.0
NRSG 554	Primary Care Pediatric Nurse Practitioner IV[3]	2.0	20	5.0	150	7.0
NRSG 557	Primary Care Pediatric Nurse Practitioner V[3]	—	—	5.0	150	5.0
Totals		11.0	110	19.0	570	30.0
Overall Totals		23.0	230	19.0	570	42.0

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also select NRSG 535 Pediatrics I

3 Offered alternate years

Normal time to complete the program

2 years (7 academic quarters) based on less than full-time enrollment

Psychiatric Nurse Practitioner — Post-master's certificate

The psychiatric nurse practitioner (PsychNP) post-master's certificate track is designed to prepare the registered 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 and by the American Nurses Certification Corporation.

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[1]	3.0	30	—	—	3.0
NRSG 517	Theoretical Foundations for Advanced Practice[2]	4.0	40	—	—	4.0
Totals		12.0	120	—	—	12.0
Clinical						
NRSG 581	Psychiatric Nurse Practitioner I	4.0	40	1.0	30	5.0
NRSG 582	Psychiatric Nurse Practitioner II	3.0	30	1.0	30	4.0
NRSG 583	Psychiatric Nurse Practitioner III	4.0	40	5.0	150	9.0
NRSG 584	Psychiatric Nurse Practitioner IV	4.0	40	5.0	150	9.0
NRSG 585	Psychiatric Nurse Practitioner V	—	—	6.0	180	6.0
Totals		15.0	150	18.0	540	33.0
Overall Totals		27.0	270	18.0	540	45.0

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also select NRSG 535 Pediatrics I

3 Offered alternate years

Normal time to complete the program

2 years (7 academic quarters) based on less than full-time enrollment

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.

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. *Wholeness*: Engage in the lifelong, harmonious development of physical, intellectual, emotional, relational, cultural, and spiritual qualities that are unified through a loving relationship with God.
2. *Values*: Promote ethical and compassionate Christian service, respecting the diverse experiences of others.
3. *Critical Thinking*: Synthesize and apply research findings as a foundation for evidence-based practice.
4. *Lifelong Learning*: Engage in inquiry, discovery, and lifelong learning through continued scholarly endeavors.
5. *Communication*: Demonstrate effective communication skills in English.
6. *Technology*: Apply informatics and health-care technologies to support data management and improve patient care.
7. *Diverse World*: Embrace and serve individuals, populations, and systems in a diverse world through advanced expertise in a selected nursing role.
8. *Collaboration*: Collaborate interprofessionally to improve patient and population health outcomes.
9. *Concept Integration*: Utilize baccalaureate-level humanities, nursing, and science competencies as a basis for advanced nursing practice.
10. *Leadership*: Use organizational and systems leadership, management, and teaching skills to promote high-quality and safe patient care.
11. *Health Policy*: Contribute to health policy and advocacy by working with clients, health professionals, and organizations to improve access, quality, and delivery of health care.
12. *Quality Improvement*: Apply quality improvement and safety methods, tools, performance measures, and standards within professional settings.
13. *Prevention*: Engage in clinical prevention and health promotion to maintain and improve population health.
14. *Advanced Practice*: Utilize advanced knowledge acquired from nursing and cognate sciences as a basis for advanced nursing practice.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant to the Master of Science degree program in nursing must have the following:

1. A baccalaureate degree in nursing or its equivalent from an accredited program.
2. A 3.00 or higher undergraduate G.P.A. (on a 4.00 scale), cumulative and in the nursing major; a 3.00 in sciences for nurse anesthesia.
3. A formal interview with graduate nursing faculty members.
4. Nursing experience for graduate study;
   a. minimum of one year full-time experience as RN before beginning clinical courses; experience related to desired area of study preferable
   b. minimum of one year full-time, current ICU experience for nurse anesthesia, excluding orientation
   c. minimum of two years of current experience in a Level III NICU for neonatal nurse practitioner applicants
5. Prerequisites: undergraduate statistics (description and beginning inferential) and research with satisfactory grades.
6. The Health Science Reasoning Test (HSRT), a test of critical thinking skills, must be taken within the past year.
7. An onsite essay required as part of the admissions process. If the outcome is less than satisfactory, a graduate-level writing course will be required.
8. For nurse anesthesia, concentration area:
   a. current certification in BLS, ACLS, and PALS is required; CCRN preferred
   b. a full year of general chemistry and introductory biochemistry, highly recommended
   c. 8 hours of clinical observation with a CRNA required before admission interview

Application deadlines

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following.

- CRNA
  - Autumn Quarter—February 1
- A-GNP, FNP, PNP, Psych NP
  - Autumn Quarter—February 1
  - Winter Quarter—August 1
- Nurse Educator, Nursing Administration
  - Autumn Quarter—April 1
  - Winter Quarter—August 1
  - Spring Quarter—November 1
- CNS
  - Autumn Quarter—April 1

Pre-entrance requirements (p. 25):

1. Health clearance, including immunizations
2. Background check
3. Students must have a current California registered nurse license prior to enrollment.

Regulations

Nondegree course status

Up to 12 units of required core course work may be taken as a nondegree student, with the consent of the instructor, while the application submission and review are in progress. If grades of B or higher are earned, the course work may be applied toward the graduate degree upon acceptance into the program.

Course scheduling

Core nursing courses are scheduled to accommodate the typical working nurse.

Curriculum change

The school reserves the right to update and modify curriculum content to keep current with changes in national requirements and changes in health care.

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.

M.S. concentrations

Clinical Nurse Specialist: Adult-Gerontology Concentration

The clinical nurse specialist: adult-gerontology clinical option prepares students for leadership roles as clinical nurse specialists. Clinical and theoretical content focuses on adult and geriatric 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.

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[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
NRSG 530	Adult - Gerontology I	4.0	40	—	—	4.0
NRSG 531	Adult - Gerontology II	4.0	40	—	—	4.0
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 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
NRSG 545	Teaching Practicum[2]	—	—	3.0	90	3.0
Totals		22.0	220	4.0	120	26.0
Clinical						
NRSG 532	Adult -Gerontology III	2.0	20	2.0	60	4.0
NRSG 533	Adult - Gerontology: Clinical Practicum	—	—	15.0	450	15.0
Totals		2.0	20	17.0	510	19.0
Overall Totals		46.0	460	21.0	630	67.0

Thesis option		
NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also select from NRSG 546 Curriculum Development in Higher Education or an Elective.

3 Units are in addition to minimum required for the degree

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Clinical Nurse Specialist: Pediatrics Concentration

The clinical nurse specialist: pediatrics 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 caring for 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	40	—	—	4.0
RELE 524	Bioethics and Society[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
NRSG 535	Pediatrics I	4.0	40	—	—	4.0
NRSG 536	Pediatrics II	4.0	40	—	—	4.0
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 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
PHSL 588	Pathophysiology	4.0	40	—	—	4.0
NRSG 545	Teaching Practicum[2]	—	—	3.0	90	3.0
Totals		22.0	220	4.0	120	26.0
Clinical						
NRSG 537	Pediatrics III	2.0	20	2.0	60	4.0
NRSG 538	Pediatrics: Practicum	—	—	15.0	450	15.0
Totals		2.0	20	17.0	510	19.0
Overall Totals		46.0	460	21.0	630	67.0

Thesis option		
NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also take NRSG 546 Curriculum Development in Higher Education or an Elective

3 Units are in addition to minimum required for the degree.

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

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	40	—	—	4.0
RELE 524	Bioethics and Society[1]	3.0	30	—	—	3.0
Totals		19.0	190	—	—	19.0
Concentration						
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
NRSG 544	Teaching and Learning Theory[2]	3.0	30	—	—	3.0
Totals		12.0	120	—	—	12.0
Clinical						
NRSG 650	Family Nurse Practitioner: 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 Nurse Practitioner I	2.0	20	2.0	60	4.0
NRSG 653	Family Nurse Practitioner II	3.0	30	3.0	90	6.0
NRSG 654	Family Nurse Practitioner III	3.0	30	4.0	120	7.0
NRSG 655	Family Nurse Practitioner IV	3.0	30	4.0	120	7.0
NRSG 656	Family Nurse Practitioner V	—	—	7.0	210	7.0
Totals		16.0	160	22.0	660	38.0
Overall Totals		47.0	470	22.0	660	69.0

Thesis option		
NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also take NRSG 547 Nursing Leadership: Principles and Practices

3 Units are in addition to minimum required for the degree

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Neonatal Nurse Practitioner Concentration

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 the assessment, supervision, and management of sick newborns—in consultation and collaboration with 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.

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[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
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
Clinical						
NRSG 619	Neonatal Nurse Practitioner I: Neonatal Advanced Physical Assessment[2]	3.0	30	1.0	30	4.0
NRSG 620	Neonatal Nurse Practitioner II[2]	3.0	30	2.0	60	5.0
NRSG 621	Neonatal Nurse Practitioner III[2]	3.0	30	2.0	60	5.0
NRSG 622	Neonatal Nurse Practitioner IV[2]	4.0	40	4.0	120	8.0
NRSG 629	Neonatal Nurse Practitioner V	4.0	40	4.0	120	8.0
NRSG 630	Neonatal Nurse Practitioner VI: Practicum	1.0	10	8.0	240	9.0
Totals		18.0	180	21.0	630	39.0
Overall Totals		52.0	520	21.0	630	73.0

Thesis option		
NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 Offered alternate years

3 Units are in addition to minimum required for the degree

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Primary Care Adult–Gerontology Nurse Practitioner Concentration

This nurse practitioner clinical option prepares the nurse to exercise independent judgment in assessment, supervision, and management of the primary health-care needs of adults across the age spectrum, 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[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
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
Totals		12.0	120	—	—	12.0

Clinical						
NRSG 561	Primary Care Adult-Gerontology Nurse Practitioner I	2.0	20	2.0	60	4.0
NRSG 562	Primary Care Adult-Gerontology Nurse Practitioner II	3.0	30	3.0	90	6.0
NRSG 563	Primary Care Adult-Gerontology Nurse Practitioner III	3.0	30	3.0	90	6.0
NRSG 564	Primary Care Adult-Gerontology Nurse Practitioner IV	3.0	30	4.0	120	7.0
NRSG 565	Primary Care Adult-Gerontology Nurse Practitioner V	—	—	6.0	180	6.0
NRSG 569	Primary Care Adult-Gerontology Nurse Practitioner: Fragile Elders	3.0	30	1.0	30	4.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		16.0	160	20.0	600	36.0
Overall Totals		50.0	500	20.0	600	70.0

Thesis option		
NRSG 697	Research [2]	5

[1] Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

[2] Units are in addition to minimum required for the degree.

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Primary Care Pediatric Nurse Practitioner Concentration

The primary care 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 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	40	—	—	4.0
RELE 524	Bioethics and Society[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
NRSG 535	Pediatrics I	4.0	40	—	—	4.0
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
Totals		16.0	160	—	—	16.0
Clinical						
NRSG 551	Primary Care Pediatric Nurse Practitioner I[2]	3.0	30	1.0	30	4.0
NRSG 552	Primary Care Pediatric Nurse Practitioner II[2]	3.0	30	4.0	120	7.0
NRSG 553	Primary Care Pediatric Nurse Practitioner III[2]	3.0	30	4.0	120	7.0
NRSG 554	Primary Care Pediatric Nurse Practitioner IV[2]	2.0	20	5.0	150	7.0
NRSG 557	Primary Care Pediatric Nurse Practitioner V[2]	—	—	5.0	150	5.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		13.0	130	20.0	600	33.0
Overall Totals		51.0	510	20.0	600	71.0

Thesis option		
NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 Offered alternate years

3 Units are in addition to minimum required for the degree.

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

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		**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[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
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
Totals		12.0	120	—	—	12.0
Clinical						
NRSG 581	Psychiatric Nurse Practitioner I	4.0	40	1.0	30	5.0
NRSG 582	Psychiatric Nurse Practitioner II	3.0	30	1.0	30	4.0
NRSG 583	Psychiatric Nurse Practitioner III	4.0	40	5.0	150	9.0
NRSG 584	Psychiatric Nurse Practitioner IV	4.0	40	5.0	150	9.0
NRSG 585	Psychiatric Nurse Practitioner V	—	—	6.0	180	6.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		17.0	170	19.0	570	36.0
Overall Totals		51.0	510	19.0	570	70.0

Thesis option		
NRSG 697	Research [2]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 Units are in addition to minimum required for the degree.

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Nurse Educator: Adult–Gerontology Concentration

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[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	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
AHCJ 506	Educational Evaluation and Clinical Assessment[2]	3.0	30	—	—	3.0
Totals		18.0	180	—	—	18.0
Clinical						
NRSG 530	Adult - Gerontology I	4.0	40	—	—	4.0
NRSG 531	Adult - Gerontology II	4.0	40	—	—	4.0
NRSG 543	Clinical Practicum: Nurse Educator	—	—	3.0	90	3.0
NRSG 545	Teaching Practicum	—	—	3.0	90	3.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		10.0	100	7.0	210	17.0
Overall Totals		50.0	500	7.0	210	57.0

Thesis option		
NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also take NRSG 549 Assessment of Learning Outcomes

3 Units are in addition to minimum required for the degree

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Nurse Educator: Obstetrics–Pediatrics Concentration

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[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
NRSG 544	Teaching and Learning Theory	3.0	30	—	—	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
AHCJ 506	Educational Evaluation and Clinical Assessment[2]	3.0	30	—	—	3.0
Totals		18.0	180	—	—	18.0
Clinical						
NRSG 535	Pediatrics I	4.0	40	—	—	4.0
NRSG 536	Pediatrics II	4.0	40	—	—	4.0
NRSG 543	Clinical Practicum: Nurse Educator	—	—	3.0	90	3.0
NRSG 545	Teaching Practicum	—	—	3.0	90	3.0
NRSG 651	Advanced Physical Assessment	2.0	20	1.0	30	3.0
Totals		10.0	100	7.0	210	17.0
Overall Totals		50.0	500	7.0	210	57.0

Thesis option

NRSG 697	Research [3]	5

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

2 May also take NRSG 549 Assessment of Learning Outcomes

3 Units are in addition to minimum required for the degree.

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Certified Advanced Practice Registered Nurse

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[1]	3.0	30	—	—	3.0
Totals		29.0	290	—	—	29.0
Concentration						
NRSG 555	Pharmacology in Advanced Practice I[2]	3.0	30	—	—	3.0
NRSG 556	Pharmacology in Advanced Practice II[2]	2.0	20	—	—	2.0
NRSG 530	Adult - Gerontology I[3]	4.0	40	—	—	4.0
Totals		9.0	90	—	—	9.0
Clinical						
NRSG 693	Experience Portfolio[4]	—	—	18.0	540	18.0
Totals		—	—	18.0	540	18.0
Overall Totals		38.0	380	18.0	540	56.0

1 Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law.

[2] Not required with current CA furnishing license

[3] Or NRSG 535 Pediatrics I

[4] Or supplemental courses and guided studies as needed to equal 18 units

Normal time to complete the program

2 years (6 academic quarters)—based on full-time enrollment; part time permitted

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).

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
ANAT 527	Advanced Clinical Anatomy for Nurse Anesthetists	4.1	90	0.9	60	5.0
NRSG 514	Advanced Physiology and Pathophysiology for the Nurse Anesthetist II	4.0	40	—	—	4.0
NRSG 517	Theoretical Foundations for Advanced Practice	4.0	40	—	—	4.0
NRSG 567	Scientific Foundations of Nurse Anesthesia Practice	2.0	20	—	—	2.0
NRSG 680	Intermediate Statistics	3.0	30	—	—	3.0
NRSG 684	Research Methods	4.0	40	—	—	4.0
PHSL 506	Advanced Physiology and Pathophysiology for Nurse Anesthetist I	5.0	50	—	—	5.0
RELE 524	Bioethics and Society	3.0	30	—	—	3.0
Totals		29.1	340	0.9	60	30.0
Concentration						
NRSG 519	Advanced Role Development for the Nurse Anesthetist	3.0	30	—	—	3.0
NRSG 520	Principles of Nurse Anesthesia Practice I	3.0	30	1.0	30	4.0
NRSG 521	Principles of Nurse Anesthesia Practice II	3.0	30	1.0	30	4.0
NRSG 522	Principles of Nurse Anesthesia Practice III	4.0	40	1.0	30	5.0
NRSG 523	Principles of Nurse Anesthesia Practice IV	3.0	30	—	—	3.0
NRSG 566	Advanced Physical Assessment for the Nurse Anesthetist	2.0	20	1.0	30	3.0
NRSG 571	Advanced Pharmacology for Nurse Anesthesia I	6.0	60	—	—	6.0
NRSG 572	Advanced Pharmacology for Nurse Anesthesia II	3.0	30	—	—	3.0
NRSG 573	Advanced Pharmacology for Nurse Anesthesia III	2.0	20	—	—	2.0
Totals		29.0	290	4.0	120	33.0
Clinical						
NRSG 518	Orientation to Clinical Practice	—	—	1.0	30	1.0
NRSG 524	Clinical Practicum and Correlation Conference I	1.0	10	2.0	60	3.0
NRSG 525	Clinical Practicum and Correlation Conference II	1.0	10	3.0	90	4.0
NRSG 526	Clinical Practicum and Correlation Conference III	1.0	10	3.0	90	4.0
NRSG 527	Clinical Practicum and Correlation Conference IV	1.0	10	3.0	90	4.0
NRSG 528	Clinical Practicum and Correlation Conference V	1.0	10	3.0	90	4.0
NRSG 529	Clinical Practicum and Correlation Conference VI	1.0	10	3.0	90	4.0
Totals		6.0	60	18.0	540	24.0
Overall Totals		64.1	690	22.9	720	87.0

Normal time to complete the program

3 years (10 academic quarters) based on less than full-time enrollment

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
		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 534	Ethical Issues in Public Health[1]	3.0	30	—	—	3.0
Totals		22.0	220	—	—	22.0
Concentration						
HADM 507	Principles of Accounting in Health Care	3.0	30	—	—	3.0
HADM 528	Organizational Behavior in Health Care	3.0	30	—	—	3.0
HADM 534	Health-Care Law	3.0	30	—	—	3.0
HADM 605	Health-Care Quality Management	3.0	30	—	—	3.0
NRSG 530	Adult - Gerontology I[2]	4.0	40	—	—	4.0
HADM 514	Health-Care Economics[3]	3.0	30	—	—	3.0
HADM 529	Health-Care Negotiations and Conflict Resolution[3]	3.0	30	—	—	3.0
HADM 542	Managerial Accounting for Health-Care Organizations[3]	3.0	30	—	—	3.0
Totals		25.0	250	—	—	25.0
Clinical						
NRSG 548	Nursing Administration Practicum	—	—	10.0	300	10.0
Totals		—	—	10.0	300	10.0
Overall Totals		47.0	470	10.0	300	57.0

Thesis option		
NRSG 697	Research [4]	5

1. Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law
2. May also select NRSG 531 Adult - Gerontology II, NRSG 535 Pediatrics I, NRSG 536 Pediatrics II
3. May also select HADM 545 Government Policy and Health Disparities, HADM 559 Health-Care Marketing, HADM 574 Managing Human Resources in Health-Care Organizations, HADM 575 Management Information Systems in Health Care, HADM 604 Health Systems Strategic Planning. Select others on approval.
4. Units are in addition to minimum required for the degree.

Normal time to complete the program

3 years (11 academic quarters) based on less than full-time enrollment

Doctor of Nursing Practice

The Doctor of Nursing Practice (D.N.P.) degree is a three-year, 65-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 2015 by nurses with doctoral degrees.

Learning outcomes for Doctor of Nursing Practice

The learning outcomes for the D.N.P. 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 D.N.P. degree, the graduate will:

1. *Wholeness*: Engage in the lifelong, harmonious development of physical, intellectual, emotional, relational, cultural, and spiritual qualities thst are unified through a loving relationship with God.
2. *Values*: Promote ethical and compassionate Christian service, respecting the diverse experiences of others.
3. *Critical Thinking*: Promote the use of practice scholarship and analytical methods for evidence-based practice.
4. *Lifelong Learning*: Utilize current scientific underpinnings for practice and as a basis for discovery and lifelong learning.
5. *Communication*: Demonstrate effective communication skills in English.
6. *Technology*: Provide leadership in the use of information systems/technology and patient care technology for the improvement and transformation of health care.
7. *Diverse World*: Embrace and serve individuals, populations, and systems in a diverse world through advanced practice.
8. *Collaboration*: Participate in interdisciplinary collaboration for improving patient and population health outcomes.
9. *Leadership*: Provide organizational and systems leadership to promote evidence-based practice.
10. *Health Policy*: Advocate for health care through policy analysis and development.
11. *Quality Improvement*: Plan and implement quality improvement programs for the advancement of patient and client care in specific health-care delivery systems.
12. *Prevention*: Incorporate into his/her practice the principles of practice prevention and population health for improving the nation's health.
13. *Advanced Practice*: Demonstrate leadership in the promotion of advanced nursing practice and the nursing profession.

The curriculum

The DNP program comprises 65 units—46 theory units and 19 clinical units (510 hours). Of the clinical units, 5 (150 hours) occur with theory courses :NRSG 603 Evaluation of Informational Systems, NRSG 609 Policy Development and Advocacy, NRSG 611 Assessment, Planning, and Outcomes for Clinical Practice, NRSG 612 Health-Care Systems Leadership, NRSG 625 The Practice Mentor; and 12 (360 hours) from the culminating project.

Courses will be offered as one-to-two-week, on-campus 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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant to the Doctor of Nursing Practice program must also complete the following requirements:

1. Master's degree (M.S.) in nursing from an accredited school.
2. License to practice nursing in state of residence.
3. APRN certification for advanced practice for clinical track.
4. G.P.A. of 3.2 or higher from M.S. degree program.
5. Curriculum vitae or resume.
6. Interview by faculty members in the Loma Linda University School of Nursing.
7. Upon acceptance, letter of support from employing institution.

Applicants seeking graduate admission must have the application process completed by the date indicated in the following.

- Summer Quarter—February 1 (priority admission)

Program requirements

Core		
NRSG 601	DNP Professional Development	4
NRSG 602	Evidence-based Models of Advanced Practice and Health-Care Outcomes	3
NRSG 603	Evaluation of Informational Systems	3
NRSG 605	Vulnerable Populations	3
NRSG 607	Complex Issues in Nursing Practice	3
NRSG 608	Translational Research for Advanced Nursing Practice	3
NRSG 609	Policy Development and Advocacy	3
NRSG 611	Assessment, Planning, and Outcomes for Clinical Practice	3
NRSG 612	Health-Care Systems Leadership	3
NRSG 613	Evaluation of Cultural Competence in Nursing Practice	3
NRSG 618A	Writing for Publication	1
NRSG 618B	Writing for Publication	2
NRSG 625	The Practice Mentor	3
RELE 536	Ethics, Leadership, and Advanced Nursing	3
RELR 525	Health Care and the Dynamics of Christian Leadership	3
RELT 557	Theology of Human Suffering	3
Capstone Project		
NRSG 627	DNP Project Development Seminar [1]	7
NRSG 634A	DNP Project	3
NRSG 634B	DNP Project	3
NRSG 634C	DNP Project	3

NRSG 634D	DNP Project	3
Total Units		**65**

[1] Multiple registrations required to fulfill total unit requirement.

Normal time to complete the program

3 years (12 academic quarters) based on less than full-time enrollment

Nursing — Ph.D.

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.

Learning outcomes for Doctor of Philosophy

The learning outcomes of the Ph.D. degree 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. *Wholeness*: Embrace a holistic perspective on life, teaching, and scholarship by integrating the bio-psycho-social-spiritual dimensions.
2. *Values*: Extend Christ-centered values to nursing scholarship and education.
3. *Scholarship*: Engage in inquiry and scholarship to develop and disseminate knowledge in nursing science.
4. *Lifelong Learning*: Adopt a lifestyle of inquiry, reflection, and growth.
5. *Communication*: Explain complex phenomena clearly in spoken and written English.
6. *Technology*: Demonstrate advanced competency and leadership in the use of technology for the purpose of generating new knowledge in nursing.
7. *Diverse World*: Address complex questions through partnerships with individuals, populations, and systems nationally and internationally.
8. *Collaboration*: Engage in collaborative discourse and scholarship to contribute to health care and society.
9. *Leadership*: Engage in transformational leadership to promote intradisciplinary and transdisciplinary discourse and scholarship.
10. *Research*: Serve as committed nurse scholar through the generation and dissemination of knowledge relevant to the development of nursing.

The curriculum

The Ph.D. degree is offered as a summers-intensive program on campus at Loma Linda University, with selected online or traditional 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 credit requirement is 90 quarter units beyond the Master of Science degree. 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 his/her 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 the School of Nursing faculty and may also take advantage of graduate courses throughout the University. 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. 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.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant to the Doctor of Philosophy degree program in nursing must have the following:

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. Interview with Ph.D. degree faculty.
4. Graduate Record Examination (GRE) (optional).
5. Evidence of scholarly work.

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following.

Ph.D. (Summer even years only)

- May 1, 2013 and October 1, 2013 (odd year)
- March 1, 2014

Program requirements

Core		
NRSG 575	Strategies for Theory Development in Nursing	4
NRSG 665	Philosophical Foundations of Nursing Science	4
Concentration/electives		
NRSG 687	Applied Psychometrics for Health Care [1]	4
Electives – focus courses foundational to dissertation		12
General electives		4
Cognates		
NRSG 637	LLU Scholars Seminar [2]	4
NRSG 664	Nursing Science Seminar [2]	3
RELE 5__	Graduate-level Ethics	3
RELR 5__	Graduate-level Relational	3
RELT 5__	Graduate-level Theological	3
Research and statistics		
NRSG 636	Methods of Disciplined Inquiry	2
NRSG 660	Advanced Qualitative Research Methods	4
NRSG 686	Advanced Quantitative Research Methods	4
NRSG 696	Mentored Research [2]	4
NRSG 697	Research [2]	20
STAT 531	Parametric and Nonparametric Bivariate Statistics	4
STAT 532	Applied Bivariate Statistical Analysis	4
STAT 533	Applied Multivariable Statistical Analysis	4
Total Units		**90**

[1] or another analytic topic relevant to dissertation data analysis

[2] Multiple registrations required to fulfill total unit requirement.

Normal time to complete the program

5.5 years based on less than full-time enrollment

School of Pharmacy

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.

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. The new School of Pharmacy pioneering class of 2006 began on September 19, 2002. In July 2007, the Accreditation Council for Pharmacy Education granted full accreditation status to the School of Pharmacy. In October 2012, the School of Pharmacy moved into Shryock Hall, a historical building in the core of the LLU campus. The administrative team, Department of Pharmacy Practice, and Department of Experiential and Continuing Education now call Shryock Hall home. The Chan Shun Pavilion houses the Department of Pharmaceutical and Administrative Sciences and three research laboratories.

Mission, goals, and values

Our mission

Additive to the mission of Loma Linda University to continue the teaching and healing ministry of Jesus Christ, the School of Pharmacy is committed to:

- 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 educates 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's academic and cocurricular activities focus on the following seven values:

- 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 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."

Dean

W. William Hughes III

Primary faculty

Annette Bedford

Kristopher Boyle

Michael S. Campbell

Diana X. Cao

David Chai

Nancy Y. Chang

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Secondary and adjunct faculty

Samuel Achilefu

Ingrid K. Blomquist

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Jun R. Chiong

Richard T. Cranston

Khashayar Dashtipour

John R. Faltys

Steven C. Forland

Christopher C. Perry

Richard S. Sun

Sean Wilson

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.

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 e-mail 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

Introduction

Pharmacy education requires that the accumulation of scientific knowledge be accompanied by the simultaneous acquisition of skills and professional attitudes and behavior. Pharmacy school faculty has a responsibility to society to matriculate and graduate the best possible pharmacists. Thus, admission to the School of Pharmacy is offered only to those who present the highest qualifications for the study and practice of Pharmacy. Technical standards presented in this document are requirements for admission to, promotion within, and graduation from the Loma Linda University School of Pharmacy.

It is the policy of the Loma Linda University School of Pharmacy that no person shall be denied admission, promotion, or graduation on the basis of any disability, provided that the individual demonstrates ability to meet the minimum technical standards set forth herein. Standards are developed as criteria to achieve the Doctor of Pharmacy degree in preparation for licensure as a practicing pharmacist and for postgraduate professional training and education in any of the varied fields of pharmacy. Further, the safety of the patient must be guarded as the final and ultimate consideration. Therefore, it is not only reasonable, but also essential, for competent patient care to require minimum technical standards for the education of pharmacists.

Graduates of schools of pharmacy must have the knowledge and skills to function in a broad variety of clinical, administrative, and leadership situations and to render a wide spectrum of pharmaceutical care. The Loma Linda University School of Pharmacy acknowledges Section 504 of the 1973 Vocational Rehabilitation Act and PL 11-336, the Americans with Disabilities Act (ADA) 1993, but ascertains that certain minimum technical standards must be present in the prospective candidates. The Accreditation Council for Pharmacy Education requires that the curriculum provide a general professional education, enabling each student to eventually practice as a pharmacist generalist. This requires the development of broad knowledge, skills, behaviors, ongoing self-directed learning, and the eventual ability to deliver competent pharmaceutical care within a reasonable timeframe and within the context of legal and ethical framework of the profession.

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. Faculty has responsibility to monitor 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, intellectual-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) 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 associate dean for 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 whose health or abilities change while enrolled in the program.

The School of Pharmacy recognizes that certain student disabilities can be accommodated without compromising the standards required by the college 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 observation 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, 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/partners, and convey a sense of compassion and empathy. Students must be able to communicate effectively and sensitively with patients, colleagues and other personnel 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, decisions, and complex, prolonged encounters with patients. Students must be able to complete forms or appropriately document activities according to directions in a thorough 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, administering cardiopulmonary resuscitation, application of pressure to stop bleeding, participating in the initiation of appropriate procedures, rapidly and accurately preparing appropriate emergency medication, and 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; 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 timeframe 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 to 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 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 all personal qualities that are required. 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 all personal qualities that should be assessed during the admission and education processes.

Ethical values

A student 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 State Board of Pharmacy and pass requisite criminal background checks and random illegal drug screens required by the Board of Pharmacy or affiliated clinical institutions of Loma Linda University.

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 pharmacy school curriculum and to enter the practice of pharmacy.
10. The candidate/student accepts criticism and responds with the appropriate modification of behavior.

In summary

Candidates for the Doctor of Pharmacy degree must have somatic sensation and functional use of the senses of vision and hearing. Candidates must have sufficient use of senses (touch, pain, temperature, position, pressure, movement, and vibratory), and motor function to permit them to carry out the activities described above. Students must be able to consistently, quickly, and accurately integrate all information received by whatever sense(s) employed; and they must have the intellectual ability to learn, integrate, analyze, and synthesize data. Finally, students must have good moral character, decent values, and principled judgment; and they are expected to meet the ethical standards set forth by the pharmacy profession.

Any faculty or administrative team member may question any enrolled student’s or admission candidate’s ability to meet any technical standard. A request for such an investigation of a specific individual must be made in writing to the associate dean for student affairs and admissions,

detailing the reasons why such an evaluation is deemed necessary. The dean will be notified if such a request is granted.

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.

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 Autumn 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)
- National Community Pharmacist's Association (NCPA)
- 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 associate dean for student affairs and admissions.

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 one's personal and professional life.
- Apply core biomedical knowledge to patient-centered care.

Student progression and remediation effective with the class of 2017 and beyond

1. All students are required to maintain a minimum G.P.A. of 2.75 of all required courses at the conclusion of each academic year (PY1 – PY3) to be eligible to proceed with the following year of matriculation.
2. Any student who fails to achieve a minimum cumulative G.P.A. of 2.75 of all required courses at the conclusion of the academic year (PY1-PY3) will be dismissed from the Pharm.D program.
3. Any student who fails a required course within an academic term will be given an opportunity to remediate the class by taking a comprehensive exam that will be offered during the first week of the following quarter. If the failed course occurs spring quarter, the comprehensive exam will be given on Friday, two weeks after final exam week. To be eligible to take this exam, the student must document that he/she has had at least one face to face meeting with the course instructor each time the student has received a grade of 70% or below in any graded exercise.
   a. The student must achieve a score of 80% or higher on the comprehensive exam in order to continue full enrollment in the Pharm.D program. If the student achieves this score, he/she will receive a grade of C- for the course.
   b. A score of less than 80% on this comprehensive exam will require the student to repeat the course the following academic year when it is offered. The student may choose to enroll in a zero-credit Professional Development course for the next two quarters (not including summer) and sit in on any course that was taught before the course they failed. The student is permitted to participate in campus activities and student organizations (no leadership roles), and maintain his/her intern license. Alternatively, the student may go on academic leave of absence for two quarters and surrender his/her intern license. Upon return, the student must repeat the course failed initially. Students needing financial aid upon their return must take at least four units of course work to be considered a part-time student and eligible for financial aid. If the student needs to take elective courses in order to complete the nine units of electives required for the Pharm.D program, he/she may do so if elective courses are available. If no elective courses are available or the student has already completed the required nine units of electives, the student will not be a part-time student and will be ineligible for financial aid. Repeated courses are posted as actual grade earned (per LLU policy), however both grades remain on the transcript. Only the latter grade is used for G.P.A. calculation.
   c. To prevent arbitrariness in this process, the Office of the Executive Associate Dean will require each course coordinator to submit a comprehensive exam for their course at the beginning of the quarter. It is the responsibility of the Office of the Executive Associate Dean Affairs to administer this exam to students who have received a grade below a C- in that class.
   d. Preparation for the comprehensive examination is the student's responsibility. Faculty will not be required to "re-lecture" of "re-teach" subject matter to students who are preparing for the examination.
   e. Failing nine (9) credit hours of unsatisfactory required 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 to complete the Doctor of Pharmacy degree, beginning with the initial date of matriculation.

Progression/Remediation policy for PY4

1. All APPE courses must be passed with a grade of C- or above. Any student who receives a grade below a C- will have to repeat the APPE course.
2. Any student who fails one (1) APPE course during the PY4 year will be allowed to participate in the commencement ceremonies only if he or she does not have nine (9) hours of failed required courses since the start of the program. However, the student will not officially

graduate until they successfully pass the previously failed rotation when it is offered in the following academic year.

3. Students failing two APPE rotations will be dismissed from the program because they will have exceeded the nine (9) units of required courses.

Student progression for classes of 2015 and 2016

The curriculum is 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 in each quarter before enrolling in courses in the next quarter. The Academic Standing Committee reviews the academic standing of each student quarterly. Students who fail to meet the minimum standards will be notified in writing by the executive associate dean and/or chair of the Academic Standing Committee.

A minimum grade of C- is required to pass all pharmacy courses and electives. A student's progression will stop following a core course failure. The student will then be placed on a leave of absence status for two academic quarters (not including summer). Alternatively, the student may choose to enroll in a zero-credit Professional Development course for the next two quarters (not including summer) and sit in on any course that was taught before the course they failed. The student is permitted to participate in campus activities and student organizations (no leadership roles,) and maintain his/her intern license. Upon returning from the leave of absence, the student must repeat the course failed initially. Students needing financial aid upon their return must take at least 4 units of course work to be considered a part-time student and eligible for financial aid. If a student needs to take elective courses in order to complete the nine units of electives required for the PharmD program, he/she may do so if elective courses are available. If no elective courses are available or the student has already completed the required nine units of electives, the student will not be a part-time student and will be ineligible for financial aid. Repeated courses are posted as actual grade earned (per LLU policy); however both grades remain on the transcript. Only the later grade is used for G.P.A. calculation. A student will be permitted a cumulative total of nine (9) credit hours of unsatisfactory core course work during the academic program. Exceeding nine (9) credit hours of unsatisfactory core 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 to complete the Doctor of Pharmacy degree, beginning with the initial date of matriculation.

Grading system

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, professional development, and independent study, which will be graded on a "Satisfactory/Unsatisfactory" basis. Each course coordinator is responsible for establishing the policy for rounding of scores in that class.

Letter grades are determined based on performance in gaining a certain percentage of total points possible in each class. The grade distribution below shows the percentage range and the letter grade associated with each range. A passing grade of C- or above is required in all courses. At least 70% of the total points must be achieved to pass each course.

The grade distribution is as follows:

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
60-69**	D	1.0	Unsatisfactory performance
<60	F**	0.0	
	S	0.0	Satisfactory performance in pharmacy forum or professional development
	U**	0.0	Unsatisfactory performance in pharmacy forum, professional development, or chapel

Based on the grading policy above, a course is passed with a grade of C- or above unless both conditions listed below are met in the order listed.

1. The final percentage point of performance is below 70%.
2. The final percentage point is below 1.75 standard deviations of the class percentage point mean.

For example:

- If the total percentage point received is 70%, a C- grade is received for the course regardless of the class average and standard deviation.
- If the total percentage point received is 68%, the class average is 75% and the standard deviation is 5%, a C- grade is received for the course and the student will be allowed to progress (condition 2 above was not met since the final percentage is not below 1.75 standard deviation of the class percentage mean.)
- If the total percentage point received is 68%, the class average is 85% and the standard deviation is 5%, a D+ grade will be received for the course and the student will not be allowed to progress.

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.

To receive an incomplete, the student is responsible for initiating a request to receive a grade of "I" by completing a "Petition to Receive Incomplete Grade" on-line form (myllu.llu.edu), stating the reason for the request. If this request is approved, the instructor reports an "I" as well as the grade the student would have received if the deficiency is not removed within the 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, submitted 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 judgment of the instructor of record is authoritative, and 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 due to possible error. 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 a disagreement between student and instructor concerning the assignment of a grade in a collegial manner. 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 (10) 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 (5) 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 (5) 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 a written request that includes all supporting documents within two (2) working days to the Dean. The dean will appoint a grade appeal panel to review the request. Please note that only appeals directly related to the assignment of a final grade are considered, and that attendance, illness, personal circumstances, or other reason for appeal not directly related to the assignment of a grade will not be considered. The panel may require any or all individuals associated with the appeal to appear. The panel is charged to determine 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, and is only required to state their decision, not the rationale for their decision. 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, instructor, and dean, 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, the instructor 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, student and dean will be advised of the new grade. Under no circumstances may persons other than the original faculty member or panel change the grade. Should the panel conclude that the instructor's written explanation justifies the original grade, the panel will report this in writing to the student, instructor and dean; 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. Attendance is required and is a component of the professional development course grade.

Dean's list and honor roll

A student who earns a 3.30-3.69 grade point average in a given quarter, with no incomplete grades, during a term is given Honor Roll standing. A student who earns a 3.70 or better grade point average in a given quarter, 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 two 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 3.00. Failure to maintain a good academic standing will result in action by the School (see below, Academic Monitoring). 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.

Ensuring academic success

To insure academic success:

1. Faculty will provide a clear indication of performance by posting scores or grades of all graded activities on Canvas. All graded activities will be returned or scores/grades posted in a timely fashion.
2. It is the student’s responsibility to monitor his or her own academic performance in all courses.
3. Students will seek out the course instructor(s) and faculty advisor for assistance in assuring academic success.

Academic monitoring

Each student’s academic status will be reviewed by the Academic Standing Committee at the end of each academic quarter including each student’s cumulative G.P.A. as reported by University Records. A student with a cumulative G.P.A. of less than 3.00 will be monitored by the Academic Standing Committee until the student has achieved two successive quarters with a quarterly G.P.A. above 3.00.

Each student being monitored by the Academic Standing Committee must meet with the Director of Academic Support no less than two weeks after the end of the quarter. The Director of Academic Support and the student will design 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.

Academic dismissal

The progression policy addresses most elements of academic dismissal. The following two paragraphs address addition elements relating to academic dismissal.

Since required 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 these limits will result in dismissal from the program.

A dismissed student will receive written notification from the Executive Associate Dean in person. The notice will include procedures for appeal. Dismissed students are required to turn in any LLU identification badges and will have their electronic and parking privileges revoked. The School will also notify the California Board of Pharmacy for termination of the student’s Intern Pharmacist license.

Readmission of dismissed students

A dismissed student may appeal their dismissal from the program directly with the Office of the Dean within five business days.

Withdrawal from the program

If, after having been registered, a student finds it necessary to withdraw during the course of a quarter, the Associate Dean of Student Affairs and Admissions must be notified in writing. Arrangements for formal withdrawal must then be made by electronic submission (myllu.llu.edu). An exit interview with a member of 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 regulations 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 e-mail 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 director 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. It is the students responsibility to satisfy all site requirements prior to each rotation with the time frame requested. 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. IPPE rotations can be up to a 70-mile radius from campus. APPE rotations do not have any mile limitations.

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 Department of Experiential and Continuing 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

The chair of experiential and continuing 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.

Prerequisites for advanced pharmacy practice experiences

In order to progress to the advanced pharmacy practice experiences, a student must meet the following requirements:

- *PY4 standing:* Students must achieve PY4 standing as defined by the School of Pharmacy.
- *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.
- *Bloodborne Pathogen* training: All students are required to complete 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. Annual review and update is required during the program.
- *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 nonprobationary 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.

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. The Department of Experiential and Continuing Education 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 nonprobationary pharmacy intern license. Information about the pharmacy intern license can be found on the Web site <http://www.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 Department of Experiential and Continuing 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 licensed 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 2.30 or higher for the total degree program for the Classes of 2015 and 2016. A cumulative grade point average of 2.75 or higher for the total degree program for the Class of 2017 and beyond.
- 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.

International 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 his/her last term of enrollment. An international 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

$40,875	Annual block tuition
$13,625	Per quarter

Fees

$750	Per quarter, University enrollment fee (health-care insurance, Drayson Center membership, student activities, and publications)

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).

On- and off-campus student housing

Students may go to <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 — Pharm.D.

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.

Admissions

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/quarter units)

- 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 (3/4)
- Speech communication (3/4)
- Economics – macro or micro (3/4)
- General psychology (3/4)

Decisions regarding the final determination of acceptable courses as prerequisites reside with the School of Pharmacy Admissions Committee in collaboration with the Office of University Records.

* A full sequence of course work is required for general biology, general chemistry, organic chemistry, and general physics. The semester and quarter units listed in the table above are a general guideline for the *minimum* number of units that must be completed to fulfill the prerequisite requirements. These minimum units may not be the same in all universities/colleges.

** 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, an applicant who has not completed a bachelor's degree may be considered for admission into the School of Pharmacy. An applicant 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.

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 e-mail 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:

- Educational Credential Evaluators, Inc. (ECE) <http://www.ece.org/>
- World Education Services (WES) <http://www.wes.org/>

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 <http://www.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 September.

Admission deadline

The School of Pharmacy accepts applications through PharmCAS from June through November (dates may vary) 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.

Degree requirements

First Year

Autumn Quarter		**Units**
RELT 706	Adventist Beliefs and Life	2
RXPC 561	Pharmaceutical Care I	4
RXPS 511	Pharmaceutics I	2
RXPS 524	Physiology I	4
RXPS 581	Biochemistry I	3
RXRX 501	School of Pharmacy Forum	0
RXRX 507	Professional Development	0
RXSA 545	Public Health and Lifestyles	3
Winter Quarter		
RXEE 562	Pharmacist Guided Self-Care 1	3
RXEE 591	Introduction to Community Pharmacy Practice I	2
RXPS 512	Pharmaceutics II	4
RXPS 515	Pharmaceutics Laboratory I	0.5
RXPS 525	Physiology II	3
RXPS 582	Biochemistry II	3
RXRX 501	School of Pharmacy Forum	0
RXRX 507	Professional Development	0
RXSA 547	Pharmacy Law	2
Spring Quarter		
RELE 705	Ethics in Pharmacy Practice	3
RELT 740	World Religions and Human Health	3
RXEE 563	Pharmacist Guided Self-Care 2	3
RXEE 592	Introduction to Community Pharmacy Practice II	2
RXPS 513	Pharmaceutics III	3
RXPS 516	Pharmaceutics Laboratory II	0.5
RXRX 501	School of Pharmacy Forum	0
RXRX 507	Professional Development	0
RXTH 670	IPDM I: Principles of Pharmacology	2
Second Year		
Autumn Quarter		
RXEE 690[1]	Introduction to Hospital Pharmacy Practice	2
RXPS 610	Pharmacokinetics	4
RXPS 651	Principles of Medicinal Chemistry I	3
RXRX 601	School of Pharmacy Forum	0
RXRX 604	Professional Development	0
RXSA 640	Epidemiology and Biostatistics	3
RXSA 646	Principles of Management	3
RXTH 671	IPDM II: Fluids and Electrolytes	3
Winter Quarter		
RXDI 664	Drug Information and Literature Evaluation	3
RXPS 652	Principles of Medicinal Chemistry II	4
RXRX 601	School of Pharmacy Forum	0
RXRX 604	Professional Development	0
RXTH 683	IPDM IV: Endocrine	3.5
RXTH 684	IPDM III: Cardiovascular I	3.5
Spring Quarter		
RELR 709	Christian Perspectives on Death and Dying	2
RXPS 653	Principles of Medicinal Chemistry III	3
RXRX 601	School of Pharmacy Forum	0
RXRX 604	Professional Development	0
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3
RXTH 674	IPDM VI: Renal and Respiratory Diseases	3.5
RXTH 685	IPDM V: Cardiovascular II	3.5
Third Year		
Autumn Quarter		
RELE 706	Advanced Ethics in Pharmacy Practice	2
RXPC 761	Pharmaceutical Care Laboratory I	2
RXRX 701	School of Pharmacy Forum	0
RXRX 704	Professional Development	0
RXTH 770	IPDM VII: Infectious Diseases I	3.5
RXTH 773	IPDM VIII: Psychiatry	3.5
RXEE 790[2]	Introduction to Clinical Pharmacy Practice	2
Electives[3]		9
Winter Quarter		
RXPC 760	Clinical Pharmacokinetics	2
RXPC 762	Pharmaceutical Care Laboratory II	2
RXRX 701	School of Pharmacy Forum	0
RXRX 704	Professional Development	0
RXTH 771	IPDM X: Neurology	3.5
RXTH 772	IPDM IX: Infectious Diseases II	4.5
Spring Quarter		
RXPC 763	Pharmaceutical Care Laboratory III	2
RXRX 701	School of Pharmacy Forum	0
RXRX 704	Professional Development	0
RXSA 743	Health Systems, Reimbursement, and Pharmacoeconomics	3
RXTH 774	IPDM XII: Miscellaneous Conditions and GI Disorders	2.5
RXTH 775	IPDM XI: Oncology/Transplant	3.5
Fourth Year		
Autumn Quarter		
RXEE 821	Advanced Pharmacy Practice Experience I	6
RXEE 822	Advanced Pharmacy Practice Experience II	6
Winter Quarter		
RXEE 823	Advanced Pharmacy Practice Experience III	6
RXEE 824	Advanced Pharmacy Practice Experience IV	6
Spring Quarter		
RXEE 825	Advanced Pharmacy Practice Experience V	6
RXEE 826	Advanced Pharmacy Practice Experience VI	6
	Total Units:	**180**

1. To be taken either Autumn, Winter, or Spring quarter of the second year
2. To be taken either Autumn, Winter, or Spring quarter of the third year
3. To be completed by the end of the third year (no more than 4 units of independent study can be applied to this requirement). Choose from the electives listed below. Elective courses are subject to change.

Electives

RXPS 710	Dietary Supplements	3
RXPS 718	Clinical Toxicology	3
RXPS 782	Special Topics in Pharmaceutical Sciences	1-4

RXPS 783	Special Topics in Pharmaceutical Sciences	1-4
RXPS 784	Special Topics in Pharmaceutical Sciences	1-4
RXRX 506	Introduction to Pharmacy Leadership	1
RXRX 798	Independent Study with Faculty	1-4
RXSA 750	Wall Street Journal	1
RXSA 757	Clinical Research and Methodology (CRM)	2
RXTH 757	Advanced Cardiovascular Life Support	3
RXTH 782	Special Topics in Pharmacy Practice	1-4
RXTH 783	Special Topics in Pharmacy Practice	1-4
RXTH 784	Special Topics in Pharmacy Practice	1-4
RXTH 788	Advanced Clinical Pharmacy	2

Normal time to complete the program

4 years (12 academic quarters) — full-time enrollment required

School of Public Health

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.

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.

Educational 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 practice or research career.

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.

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 (C.E.P.H), 1010 Wayne Avenue, Suite 220, Silver Spring, MD 20910. The school is also a member of the Association of Schools and Programs of Public Health (A.S.P.P.H.).

Master's degree programs

Master of Public Health (M.P.H.), Master of Business Administration (M.B.A.), and Master of Science (M.S.) degree programs are designed for those with appropriate backgrounds who are seeking to acquire graduate-level competencies in public health, health administration, nutrition, and biostatistics.

Online programs

The School of Public Health offers master's degree programs in an online format in two majors 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 an online postbaccalaureate certificate in lifestyle interventions, and an online M.P.H. degree in two areas: population medicine 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.

General degree requirements

All applicants to the online programs must meet the general admissions requirements found in Section II of this CATALOG.

Online program 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.

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 directed 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 population medicine 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.

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.

Dean

Tricia Y. Penniecook

Associate Dean

Helen Hopp Marshak

Associate Dean, Public Health Practice

Samuel Soret

Associate Dean, Research

Gary E. Fraser

Executive Associate Dean, Student Services and Administration

Dwight Barrett

Assistant Dean, Academic Administration

Donna L. Gurule
Master's programs

Albin Grohar
Doctoral programs

Core faculty, Center for Leadership in Health Systems

Jim E. Banta, Jr.

Dwight Barrett

Richard Blanco

Elisa J. Blethen

Sherma J. Charlemagne-Badal

Donn P. Gaede

Leonard K. Gashugi

Albin Grohar

Gordon E. Hewes

Paul A. Hisada

Ronald H. Mataya

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Edward S. McField, Jr.

Tricia Y. Penniecook

Huma I. Shah

Core faculty, Center for Community Resilience

Olukemi G. Adeoye

Sharilyn (Marci) Andersen

Khaled A. Bahjri

Juan Carlos Belliard

Jesse C. Bliss

Walleska I. Bliss

Thelma Gamboa-Maldonado

Mark M. Ghamsary

Peter C. Gleason

Donna L. Gurule

Daniel G. Handysides

Katherine Jones

Biblia S. Kim

Nellie Leon

Rachel I. Long

Helen Hopp Marshak

John W. Morgan

Jisoo Oh

Manjit S. Randhawa

Nicolino S. Rizzo

Emelly Rosspencer

Ed Santos

David J. Shavlik

Ryan G. Sinclair

Pramil N. Singh

Robin D. Smith

Samuel Soret

Rhonda K. Spencer-Hwang

Loretta J. Wilber

Core faculty, Center for Nutrition, Healthy Lifestyle, and Disease Prevention

Yessenia T. Bartley

W. Lawrence Beeson

Zaida R. Cordero-MacIntyre

Hildemar F. Dos Santos

Gary E. Fraser

Nicole M. Gatto

Ella H. Haddad

Sandra L. Handysides

R. Patricia Herring

Karen Jaceldo-Siegl

Wesley P. James

Jayakaran S. Job

Raymond Knutsen

Synnove M. Knutsen

Michelle H. Lake

Jerry W. Lee

Ernesto P. S. Medina

Naomi N. Modeste

Rafael Molina

Graciela O. Molina

Keiji Oda

Sujatha Rajaram

Joan Sabaté

Diadrey-Anne T. Sealy

Gina Siapco

Padma P. Uppala

Other faculty

Godwin Nwadibia Aja

Stewart R. Albertson

Yen Ang

Mihran N. Ask

Mohan Balagopalan

Dora J. Barilla

Yonan K. Benjamin

Donna L. Bennett

Frederick M. Bischoff

Dianne L. Butler

Terrence L. Butler

Jesus J. Cazares

Jerry E. Daly

Barbara F. Dickinson

Harvey A. Elder

Linda H. Ferry

Elaine H. Fleming

Lars G. Gustavsson

Bryan L. Haddock

Susan L. Hall

Linda G. Halstead

Kenneth W. Hart

Richard H. Hart

Liane H. Hewitt

Lorraine L. Hinkleman

Mark R. Janz

Christian W. Johnston

Katherine M. Jones

Marilyn S. Kraft

Robert I. Krieger

Kevin J. Lang

Susan K. Lewis

Harold J. Marlow, Jr.

Edward H. Martin

Vichuda Lousuebsakul Matthews

Doree L. Morgan

Olivia Moses

Makram A. Murad-Al-Shaikh

James O. Neergaard

Joyce B. Neergaard

Corwin Porter

Thomas J. Prendergast, Jr.

Brenda L. Rea

Susan E. Reische

Obed Rutebuka

Holly B. Schuh

Jeanne F. Silberstein

Bruce E. Smith

Mark Stewart

Larry L. Thomas

Calvin J. Thomsen

Serena Tonstad

Maryellen Westerberg

Jerald W. Whitehouse

Seth A. Wiafe

Wesley S. Youngberg

Janice R. Zumwalt

Secondary and adjunct faculty

Lorayne Barton

Lisa M. Beardsley-Hardy

Lynna Sue Belin

Gilbert M. Burnham

Damon P. Coppola

Noha S. Daher

Nicolae G. Dan

T. Allan Darnell

David T. Dyjack

Wayne S. Dysinger

Donald R. Hall

William C. Hoffman

Gary L. Hopkins

Peter N. Landless

Maximino A. Mejia

Mark J. Messina

Kevin Mickey

Ryan A. Miller

Adamson S. Muula

Christine G. Neish

Ehren B. Ngo

Eric Ngo

Warren R. Peters

Martine Y. Polycarpe

Kathryn R. Reinsma

Joon W. Rhee

Douglas C. Richards

John A. Scharffenberg

Shirley A. Simmons

Ann H. Stromberg

Donna G. Thorpe

Grenith J. Zimmerman

Kara N. Zografos

Emeritus faculty

P. William Dysinger

Joyce W. Hopp

Patricia K. Johnston

Accreditation

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Centers

Center for Leadership in Health Systems

Executive Director, Karl J. McCleary

The Affordable Care Act has resulted in a complete paradigm shift where healthcare delivery and health systems are concerned. We are the only School of Public Health that offers an MBA in Healthcare. We also have a global network of institutions that offer healthcare to populations in areas as different as Malawi is from South Korea. This time in history offers a unique opportunity for us to provide leadership in how health is conceptualized, delivered, evaluated and how health care professionals are educated from an institution that holds prevention and wholeness as its core, and unites all the healthcare professional schools on the same campus.

Center for Community Resilience

Executive Director, Samuel Soret

Evidence increasingly shows that cultivating a community's resilience is critical to its ability to bounce back from the adverse effects of disasters. Research also shows that minority and vulnerable communities often utilize faith-based community resources to deal with health and economic challenges. In recent years, faith-based organizations have emerged as important settings for disaster preparedness, mitigation and response. The academic center for Community Resilience will provide leadership with emphasis on collaboration, capacity building, information sharing and community based stewardship that increases and strengthens the capacity of neighborhood organizations, especially faith-based ones, to work together in solving problems while at the same time generating essential social, economic and spiritual capital that can be invaluable during times of stress. As we look at the social determinants of health, the built environment and the role of communities in individual health conditions, we are purposefully engaging in research and practice opportunities that explore how we can strengthen a community's ability to successfully face natural or man-made disasters, to be resilient and whole, healthy communities for healthy individuals.

Center for Nutrition, Healthy Lifestyle, and Disease Prevention

Executive Director, Ernesto P. S. Medina

Cardiovascular disease, diabetes, chronic respiratory disease and cancers account for 60% of all deaths worldwide, with an estimated 80% of these deaths occurring in low and middle income countries. The increase in the epidemic of non-communicable disease (NCD) in the developing countries is a result of the epidemiological transition, coupled with changes in diet and social environment, and the adoption of developed country lifestyles. According to the World Health Organization, lifestyle related chronic diseases in developing countries, particularly cardiovascular disease have placed a heavy burden on their health care systems (WHO 2002). Multiple studies examining and tackling the risk factors on NCDs have concluded that these conditions are largely preventable through the adoption of healthy diets, physical activity and non-consumption of tobacco and alcohol. Building on the Adventist Health Study's unique 50 plus years of research in lifestyle and plant based diets, this center will pioneer new knowledge and provide leadership for innovative, interdisciplinary, and multinational translational research collaborations aimed at reducing the risk, morbidity and mortality of unhealthy diet, physical activity, tobacco and alcohol use related NCDs for local and global constituents.

Admissions

The program admissions committees of the University assure that applicants are qualified for the proposed curriculum and are capable of profiting from the educational experience offered by this University. The Admissions Committee of the school accomplishes 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 looks for evidence of self-discipline, personal integrity, and intellectual rigor. 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.

Where to write

Correspondence about admissions to all programs and requests for application information should be addressed to the Office of Admissions and Records, School of Public Health, Loma Linda, CA 92350; or via e-mail to <admissions.sph@llu.edu>.

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 Academic Records, School of Public Health, Loma Linda University, Loma Linda, CA 92350.

1. *Application.* Submit a complete application accompanied by the application fee.
2. *Transcripts.* Official transcripts from all postsecondary institutions attended must be sent to Admissions Processing, Loma Linda University, Loma Linda, CA 92350.
3. *International evaluations.* All international (non-U.S.) transcripts must be submitted to one of the LLU-approved evaluation services. See <llu.edu/central/apply/intltrans.page> for a list of the approved companies. Copies of transcripts forwarded from evaluation services do not meet the requirement of official transcripts sent directly to LLU from the issuing institution.
4. *References.* The applicant is asked to supply a minimum of three personal references. It is recommended that these include an academic reference, a reference from an employer, and a character or religious reference.
5. *Pre-entrance examination.* All official pre-entrance test scores [e.g., TOEFL, GRE or equivalent (e.g. MCAT)] as required by each program must be sent directly to Admissions Processing by the testing organization.

6. *Interview.* The applicant's records will be screened when the supplementary application is submitted and the file is complete. The file will then be forwarded for departmental review and the applicant may be invited for a personal interview. An interview with the faculty is required by most programs.
7. *Acceptance.* The accepted student receives an acceptance letter and a link that will prompt payment of the class-holding fee and confirmation of acceptance.
8. *Pre-entrance health requirements/Immunizations.* New students are required to have certain immunizations and tests before registration. In order to avoid having a hold placed on registration, the student is encouraged to provide documentation to the Student Health Service prior to the start of regular registration. For further information, contact the Student Health Service office at 909/558-8770.
9. *Financial aid.* Application for financial aid should be submitted early, even before the student is admitted into the program. For further information, visit <llu.edu/central/ssweb/finaid>.
10. *Financial requirement.* Non-U.S. citizens 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. 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 deposit and payment plan.

Admissions decisions

The Admissions Committee considers the following qualifications in making admission decisions:

Personal statement, letters of recommendation, overall G.P.A., GRE examination scores or equivalent, professional potential, and personal interview. Admission decisions fit into one of three categories: regular admission, provisional status, or denial of admission. An international student cannot be granted a provisional acceptance.

Admissions requirements

Specific requirements, which vary from program to program, should be determined from the area of interest. Requirements for admission into the degree and certificate programs are specified in the next section.

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 are required with the application. Application forms for the GRE and information regarding examination times and places are furnished by the Educational Testing Service, GRE-ETS, P.O. Box 6000, Princeton, NJ 08541-6000, U.S.A. and at <http://www.ets.org>. Applicants for the M.B.A. degree in health administration are required to submit scores from the Graduate Management Admission Test (GMAT) or equivalent, such as the GRE. Application for the GMAT can be found at <http://www.mba.com/us>.

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 e-mail accounts

The University accepts its moral, ethical, and legal responsibility for informing and reminding students of deadlines, regulations, and processes by issuing an e-mail account to every student and communicating with students by e-mail. It is the students' responsibility to read and respond to their e-mail 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 e-mail, 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., the technology-mediated Dr.P.H. degree programs, and the online post-baccalaureate certificate 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.

Academic policies

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.

Religion course work requirement

Registration and completion of graduate-level religion course work 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 two degrees in a conjoint or combined degree relationship is as follows: 18 units between a doctoral and a master's degree program or between two master's degree programs, or 36 units between two doctoral programs. The maximum number of units that may be shared between a postbaccalaureate certificate and a master's or doctoral degree program is 9 units. Shared units between programs may not be automatically granted and apply only to programs that are taken concurrently.

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.

Adding an additional M.P.H. major

Students who wish to add another major to their M.P.H. program must complete a written petition to revise or make a change in their program. This request will be reviewed by the relevant departmental committee for approval to add the major. After approval, the student must work with the assigned advisor in the secondary department to determine the course work and other requirements that must be fulfilled for the additional major. These requirements must be specified on the Degree Compliance Report (DCR) for the student *within one quarter* of acceptance into the added major; otherwise the student will be administratively withdrawn from the added major. Because each combination of majors is unique, there is no guaranteed timeline for completion of the requirements for the additional major. Adding another major may also impact financial aid. Additional majors require a minimum of 18 unique units from the major core course work beyond those required for the primary major, with a grade point average of at least 3.0 for those added units. Coordination of the field practicum experience between the two majors is also required. All successfully completed majors will be listed on the student's transcript.

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 who are not making satisfactory academic progress, as defined elsewhere in this Catalog, will be placed on academic probation. 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 M.P.H. degree is 47 units (plus 9 units of transfer credit, or 56 units total) and for a single doctoral degree is 60 units (plus dissertation units). Advanced standing can be considered for previous course work relative to these requirements.

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 University.

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.

Academic advisement

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.

Continuing education

The school offers nondegree short courses and workshops at various locations in the United States and overseas to meet the continuing education 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.

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 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 March 2. 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 2014 (subject to change by trustee action):

Tuition

$850	Per unit: credit (on campus and online)
$405	Per unit: audit (on campus and online)

Doctoral-level courses only

$890	Per unit: credit (on campus and online)

Special tuition charges

$500	Field practicum and internship (100 hours)

Special fee

$750	Special fee

Special charges

$50	Application (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
$50	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

International student deposit

$15,000	Master's student
$25,000	Doctoral student

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 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.

Program and area-specific scholarships and awards may be viewed on the SPH Web site.

Programs

Certificates

- Biostatistics—Certificate (p. 424)
- Emergency Preparedness and Response—Certificate (p. 425)
- Epidemiology—Certificate (p. 425)
- Epidemiology Research Methods—Certificate (p. 426)
- Health Geoinformatics—Certificate (p. 427)
- Lifestyle Intervention—Certificate (p. 427) (online)
- Maternal and Child Health—Certificate (p. 428)

Master's degrees

- Biostatistics—M.P.H. (p. 431), M.S. (p. 432), Comparison (p. 433)
- Environmental and Occupational Health—M.P.H. (p. 433)
- Epidemiology—M.P.H. (p. 435)
- Global Health—M.P.H. (p. 436)
- Health Care Administration—M.B.A. (p. 438)
- Health Education—M.P.H. (p. 440) (traditional, online)
- Health Policy and Leadership—M.P.H. (p. 443)
- Lifestyle Medicine—M.P.H. (p. 444)
- Maternal and Child Health—M.P.H. (p. 445)
- Nutrition—M.P.H. (p. 447), M.S. (p. 448),
- Population Medicine—M.P.H. (p. 449) (traditional, online)

Doctoral degrees

- Epidemiology—Dr.P.H. (p. 452), Ph.D. (p. 454)
- Health Education— Dr.P.H. (p. 456) (traditional, technology mediated)
- Health Policy and Leadership—Dr.P.H. (p. 457)
- Nutrition—Dr.P.H. (p. 461)
- Preventive Care—Dr.P.H. (p. 462)

Certificates

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 concurrent 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.

Programs

- Biostatistics - Certificate (p. 424)
- Emergency Preparedness and Response - Certificate (p. 425)
- Epidemiology - Certificate (p. 425)
- Epidemiology Research Methods - Certificate (p. 426)
- Health Geoinformatics - Certificate (p. 427)
- Lifestyle Intervention - Certificate (p. 427)
- Maternal and Child Health - Certificate (p. 428)

Biostatistics — Certificate

Program director
Pramil Singh

There is a growing need to be able to interpret scientific literature, establish databases, and do simple descriptive and inferential 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:

- Critically read the literature with respect to design and statistical analysis.
- Interpret and communicate the results of basic statistical analyses.
- Assemble data and create a database ready for analysis.
- Perform appropriate statistical analysis using computer software (e.g., SAS, R, SPSS).

Indicators of educational effectiveness

- Midterm and final examinations
- Course evaluation

- Oral presentations of class projects

Prerequisite

- Calculus (one course)

Forums

During this program, students are required to attend a minimum of eight forums in epidemiology, biostatistics, and/or Adventist Health Study.

Program requirements

Public Health		
EPDM 509	Principles of Epidemiology	3
RELE 534	Ethical Issues in Public Health	3
STAT 521	Biostatistics I	4
Major		
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 522	Biostatistics II	4
STAT 535	Modern Nonparametric Statistics	3
STAT 548	Analytical Applications of SAS	2
STAT 557	Research Data Management	3
STAT 569	Advanced Data Analysis	3
Total Units		**28**

Culminating activity

The culminating activity for this certificate includes a professional portfolio and exit interview with the department chair.

Normal time to complete the program

1 year based on less than full-time enrollment

Emergency Preparedness and Response — Certificate

Program director
Ehren Ngo

The Emergency Preparedness and Response Program provides students with the knowledge and skills to effectively plan, implement, and evaluate domestic and international public health emergency response and recovery efforts. The certificate program seeks to develop and enhance the core emergency and preparedness competencies as outlined by the Association of the Schools of Public Health (ASPH) in the document "Master's Level Preparedness and Response Competency Model" (Version 1.1, November 2011, available at: <http://www.aspph.org/wp-content/uploads/2014/04/Masters-Level-Preparedness-and-Response-Competency-Model-Version-1.1-FINAL.doc>.)

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, 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

- At least a bachelor's degree (or equivalent), with a cumulative G.P.A. of at least 3.0

Program requirements

Required		
GLBH 519	Principles of Disaster Management I	3
GLBH 520	Principles of Disaster Management II	3
GLBH 521	Principles of Disaster Management III	3
GLBH 558	Public Health Issues in Emergencies	3
GLBH 559	Psychosocial Models and Interventions	3
GLBH 560	Economic, Legal, and Policy Issues in Disasters	3
RELE 534	Ethical Issues in Public Health	3
Electives		
Choose a minimum of 6 units from the following:		6
GLBH 547	Refugee and Displaced Population Health	
GLBH 548	Violence and Terrorism Issues	
GLBH 555	Technology in Emergency Management	
HGIS 522	Principles of Geographic Information Systems and Science	
HGIS 524	GIS Software Applications and Methods	
HGIS 527	Geospatial Technologies for Emergency Preparedness and Management	
Total Units		**27**

Normal time to complete the program

1 year based on less than full-time enrollment

Epidemiology — Certificate

Program director
Pramil Singh

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

- Midterm and final examinations
- Research project
- Written and oral presentation of research
- Course evaluations

Prerequisite

- Biological science (two courses)
- Calculus (one course)

Program requirements

Public health core		
EPDM 509	Principles of Epidemiology	3
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
EPDM 510	Epidemiologic Methods I	3
EPDM 515	Clinical Trials	3
STAT 548	Analytical Applications of SAS	2
or STAT 549	Analytical Applications of SPSS	
Electives		
Choose in consultation with advisor		
EPDM 5 __	Epidemiology elective	9
Research project		
EPDM 699A	Applied Research	1
Total Units		**28**

Forums

During the program, students are required to attend a minimum of eight forums in Epidemiology, Biostatistics and/or in the Adventist Health Study.

Culminating activity

The culminating activity for this certificate includes the creation of a professional portfolio, oral presentation of the research project at one of our epidemiology/biostatistics forums, submission of an approved written report of the research project, and exit interview with the Epidemiology Program Director.

Normal time to complete the program

1 year based on less than full-time enrollment

Epidemiology Research Methods — Certificate

Program director
Pramil Singh

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:

- Critically read and interpret the medical literature.
- Write applications for research and survey grants.
- Design research studies and surveys/questionnaires, including special designs for developing countries.
- Perform and interpret simple statistical analyses.

Indicators of educational effectiveness

- Midterm and final examinations
- Research project
- Written and oral presentation of research
- Course evaluations

Prerequisite

- Biological science (two courses)
- Calculus (one course)

Program requirements

Required		
EPDM 509	Principles of Epidemiology	3
EPDM 510	Epidemiologic Methods I	3
EPDM 515	Clinical Trials	3
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 564	Survey and Advanced Research Methods	3
Descriptive epidemiology		
Choose from the following:		6
EPDM 534	Epidemiology of Maternal-Child Health	
EPDM 544	Epidemiology of Infectious Disease	
EPDM 565	Epidemiology of Cancer	
EPDM 566	Epidemiology of Cardiovascular Disease	
EPDM 567	Epidemiology of Aging	
EPDM 588	Environmental and Occupational Epidemiology	
Total Units		**28**

Forums

During the program, participants are required to attend a minimum of eight forums in Epidemiology, Biostatistics and/or in the Adventist Health Study.

Culminating activity

The culminating activity for this certificate includes the creation of a professional portfolio, oral presentation of the research project at one of our epidemiology/biostatistics forums, submission of an approved written report of the research project, and exit interview with the Epidemiology Program Director.

Normal time to complete the program

1 year based on less than full-time enrollment

Health Geoinformatics — Certificate

Program director
Richard Blanco

The purpose of the health geoinformatics 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 needed by health professionals according to the 2011 RAND Corporation's Report on Mapping the Gaps.

The Health Geoinformatics Program certificate 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.

The program is open to health professionals, 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.

Program requirements

Required		
HGIS 522	Principles of Geographic Information Systems and Science	3
HGIS 523	Practical Issues in GIS	3
HGIS 524	GIS Software Applications and Methods	3
HGIS 535	Integration of Geospatial Data in GIS	2
HGIS 536	Spatial Analytic Techniques and GIS	3
HGIS 547	GIS for Public Health Practice	2
RELE 534	Ethical Issues in Public Health	3
Electives		
Choose a minimum of 8 units from the following:		8
HGIS 521	Cartography and Map Design	
HGIS 527	Geospatial Technologies for Emergency Preparedness and Management	
HGIS 537	Health Care Geographics	
HGIS 538	Introduction to Web GIS	
HGIS 539	GIS Applications in Environmental Health	
HGIS 546	Introduction to Spatial Epidemiology	
HGIS 549	Remote Sensing Applications in the Health Services	
Total Units		**27**

Normal time to complete the program

1 year based on less than full-time enrollment

Lifestyle Intervention — Certificate

Program director
Hildemar Dos Santos

The certificate in lifestyle intervention prepares students to accurately assess the health-related lifestyle conditions, practices, and motivation of individuals and community groups in order to help them improve their

health through implementation of health-related lifestyle intervention approaches.

Learner outcomes

Upon completion of this certificate, students should be able to:

1. Accurately assess lifestyle practices and conditions.
2. Identify and apply appropriate dietary, fitness, and other lifestyle-based interventions.
3. Apply principles and methods to help individuals change their lifestyle-related health behaviors.
4. Decide when and how to refer individuals to various health-care professionals.
5. Provide leadership for community-based health promotion projects in selected settings.

Upon successful completion of the program, the student will be awarded a certificate in lifestyle intervention from Loma Linda University School of Public Health.

Educational effectiveness

1. Completion with G.P.A. of 3.0 or higher
2. Class projects/presentations

Completion of certificate requirements

People who may benefit from earning the certificate include:

- Practicing health professionals who desire more training in lifestyle intervention.
- Loma Linda University School of Public Health students who can add this certificate to their M.P.H. degree training by taking a few more classes.
- Loma Linda University students from other schools who desire competence in lifestyle intervention.
- Loma Linda University alumni.
- Other individuals who wish to provide lifestyle education in their communities.

Prerequisite

- Two letters of recommendation
- Interview with the departmental faculty member
- Computer literacy

Program requirements

Required		
HPRO 500	Stress Management	2
HPRO 509	Principles of Health Behavior	3
HPRO 526	Lifestyle Diseases and Risk Reduction	3
HPRO 536	Program Planning and Evaluation	2
HPRO 565	Tobacco Use: Prevention and Interventions	3
NUTR 509	Public Health Nutrition and Biology	3
NUTR 529	Health Aspects of Vegetarian Eating	3
PHCJ 501	Introduction to On-line Learning	1
PHCJ 605	Overview of Public Health	1
RELE 534	Ethical Issues in Public Health	3
or RELR 535	Spirituality and Mental Health	
Elective		3
Total Units		**27**

Normal time to complete the program

1 year based on less than full-time enrollment

Maternal and Child Health — Certificate

Program director
Patti Herring

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 certificate 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.
- Write competitive proposals for grants and contracts in the field of maternal and child health.

Educational effectiveness

1. Appropriate course assignments and projects
2. At least a bachelor's degree (or equivalent), with a cumulative 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 such 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. Students from other schools and departments are encouraged to add a certificate in maternal and child health to their existing programs.

Program requirements

Required		
HPRO 509	Principles of Health Behavior	3
HPRO 523	Maternal/Child Health: Policy and Programs	3
HPRO 536	Program Planning and Evaluation	2
HPRO 550	Women in Development	3
HPRO 553	Addiction Theory and Program Development	3
HPRO 556	High-Risk Infants and Children: Policy and Programs	3
HPRO 567	Reproductive Health	3
HPRO 614	Seminar in Maternal and Child Health Practice	2

NUTR 534	Maternal and Child Nutrition	3
RELE 534	Ethical Issues in Public Health	3
Total Units		**28**

Normal time to complete the program

1 year based on less than full-time enrollment

Master's Degrees

The Master of Public Health (M.P.H.), Master of Business Administration (M.B.A.), and Master of Science (M.S.) degree programs are designed for those with appropriate backgrounds who are seeking to acquire graduate-level competencies in public health, health administration, nutrition, and biostatistics.

- Biostatistics — M.P.H. (p. 431), M.S. (p. 432), (Comparison (p. 433))
- Environmental and Occupational Health — M.P.H. (p. 433)
- Epidemiology — M.P.H. (p. 435)
- Global Health — M.P.H. (p. 436)
- Health Care Administration — M.B.A. (p. 438)
- Health Education — M.P.H. (p. 440) (traditional, online) (Comparison (p. 442))
- Health Policy and Leadership — M.P.H. (p. 443)
- Lifestyle Medicine — M.P.H. (p. 444)
- Maternal and Child Health — M.P.H. (p. 445)
- Nutrition — M.P.H. (p. 447), M.S. (p. 448)
- Population Medicine — M.P.H. (p. 449) (traditional, online)

Admissions

The admissions requirements described below are in addition to the University admissions requirements (p. 24). The minimum eligibility requirements for admission to a master's degree program include the following:

- a baccalaureate degree or equivalent from a regionally accredited institution, with a G.P.A. of 3.0 or above
- satisfactory performance in the Graduate Record Examination (G.R.E.) or equivalent; scores must have been attained within the last five years.
- Students applying for the M.B.A. program (only) need to submit G.M.A.T. (or G.R.E. or equivalent) scores and demonstrate satisfactory performance.
- Department interview for students applying for the M.B.A. program.
- Religious affiliation is not a requirement; but students are expected to adhere to on-campus requirements of modest dress, abstinence from alcohol and smoking, and attendance at weekly chapel.

Applicants must satisfy the program-specific admission requirements, including but not limited to pre-requisite courses, license requirements and years of experience. Admissions decisions are based on a review of applicant's transcripts, written statement, letters of recommendation, G.R.E., G.M.A.T. or equivalent scores, and interview. **Satisfying minimum requirements does not guarantee admission.**

M.P.H.

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, global health, health policy and leadership, health education, lifestyle medicine, maternal and child health, nutrition, and population medicine. Second major concentrations can be added in addition to the primary major.

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
EPDM 509	Principles of Epidemiology	3
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
PHCJ 605	Overview of Public Health *	1
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
RELE 534	Ethical Issues in Public Health	4
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
GLBH 524	Cultural Competence and Health Disparities	2
PHCJ 675	Integrated Public Health Capstone **	2

* Taken in the first quarter

** 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 major or 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, but must be at least 100 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 more than eighty universities currently participating in the Master's International Program. It is one of more than thirteen universities that offer this prestigious program in conjunction with the Master of Public Health degree, which includes global health emphasis.

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 <http://www.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. The University provides fellows (returned Peace Corps volunteers) with 6 units of tuition waiver. All master's-level students must complete a field practicum. Returned volunteers can use their service abroad to satisfy this requirement—a savings of time and money. 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.

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.

Those interested in applying to these training programs should contact the residency office by calling 909/ 558-4918 or by visiting the following web address: <http://www.lluprevmedres.org>.

Preventive medicine residency

The three-year program consists of an internship year followed by two years of integrated academic and practicum experiences. Two 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. Practice sites include the Center for Health Promotion, the Jerry L. Pettis VA Medical Center, Kaiser Permanente Medical Center, San Bernardino County Department of Public Health, and the Inland Empire Health Plan.

Under the guidance of the residency and faculty members at the School of Public Health, each resident conducts a senior 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. The residency has strengths in global health and lifestyle medicine. Exposures to these areas occur in rotations, electives, M.P.H. degree classes, and senior research projects.

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. Residents select an M.P.H. degree major in environmental health and occupational 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.

M.B.A.

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.

M.S.

Master of Science

The Master of Science (M.S.) degree in biostatistics is a two-year curriculum that emphasizes statistical methods, data analysis, and computing; as well as some epidemiology methods. It is intended for health professionals and other professionals who want to add biostatistics to their competencies.

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 these areas of specialization can be found in the Biostatistics and Nutrition Program sections of this CATALOG.

Biostatistics — M.P.H.

Program directors
Khaled Bahjri
David Shavlik

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 for 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:

- Use appropriate statistical methods to solve applied statistical problems.
- Assist in design and implementation of research studies, including formulating research questions, appropriate study designs, sample size, sampling scheme, data-collection methods, and analyses.
- Critically review literature relevant to statistical methods and interpretation of statistical findings, and identify strengths and weaknesses of design.
- 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.
- Select appropriate statistical methods to analyze data and establish and manage databases using current computer software (e.g., SAS, R, and SPSS).

Program educational effectiveness indicators

- Midterm and final examinations
- Research completion
- Written and oral presentation of research
- Course evaluation

Prerequisite

- Calculus (one course)

Program requirements

Public Health		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 521	Biostatistics I	4
Major		
EPDM 510	Epidemiologic Methods I	3
EPDM 515	Clinical Trials	3
STAT 522	Biostatistics II	4
STAT 523	Biostatistics III	4
STAT 525	Applied Multivariate Analysis	3
STAT 535	Modern Nonparametric Statistics	3
STAT 545	Survival Analysis	3
STAT 548	Analytical Applications of SAS	2
STAT 557	Research Data Management	3
STAT 564	Survey and Advanced Research Methods	3
STAT 569	Advanced Data Analysis	3
STAT 594	Statistical Consulting	2
Research		
STAT 694A	Research	1
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree		
PHCJ 798A	Public Health Practicum (Minimum of 2 units/100 hours)	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
or PHCJ 798D	Public Health Practicum	
Total Units		**66**

Noncourse requirements

EPDM/STAT forums

During their program, students are required to attend a minimum of twenty forums in Epidemiology, Biostatistics, and/or in the Adventist Health Study.

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 program director.

Normal time to complete the program

2 years (7 academic quarters) based on less than full-time enrollment

Biostatistics — M.S.

Program directors
Khaled Bahjri
David Shavlik

The Master of Science (M.S.) degree in biostatistics is a two-year curriculum that emphasizes statistical methods, data analysis and computing; as well as some epidemiology methods. It is intended for health professionals and for other professionals who want to add biostatistics to their competencies. Another target group consists of persons with a quantitative background (engineering, mathematics, physics) who want to become statisticians. The M.S. degree in biostatistics also prepares students to pursue Ph.D. degrees in biostatistics and epidemiology. The degree trains persons for collaborative research endeavors across disciplines (health-care industry, insurance, and most other disciplines in which research and statistics are an integral part of the collaboration). A publishable format thesis is required. Students work with faculty as research associates during their training.

Learner outcomes

Upon completion of the M.S. degree curriculum in biostatistics, the graduate should be able to:

- Apply appropriate statistical theory and methods to the solution of applied statistical problems.
- Design and implement a research study, including formulating research questions, appropriate study designs, sample size, sampling scheme, data-collection methods, and analyses.
- Critically review literature relevant to statistical methods and interpretation of statistical findings, and identify strengths and weaknesses of design.
- 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.
- Select appropriate statistical methods to analyze data and establish and manage databases using current computer software (e.g., SAS, R, SPLUS, and SPSS).

Indicators of educational effectiveness

- Midterm and final examinations
- Thesis completion
- Written and oral presentation and defense of thesis
- Course evaluation

Prerequisite

- Calculus (one course)
- Linear algebra (one course)
- Probability and statistics (two courses)

Degree requirements

Public Health		
PHCJ 605	Overview of Public Health	1
RELE 534	Ethical Issues in Public Health	3
Major		

EPDM 509	Principles of Epidemiology	3
EPDM 510	Epidemiologic Methods I	3
EPDM 515	Clinical Trials	3
STAT 521	Biostatistics I	4
STAT 522	Biostatistics II	4
STAT 523	Biostatistics III	4
STAT 525	Applied Multivariate Analysis	3
STAT 535	Modern Nonparametric Statistics	3
STAT 545	Survival Analysis	3
STAT 548	Analytical Applications of SAS	2
STAT 557	Research Data Management	3
STAT 564	Survey and Advanced Research Methods	3
STAT 569	Advanced Data Analysis	3
STAT 594	Statistical Consulting	2
Thesis		
STAT 695	Thesis	4
Total Units		**51**

Noncourse requirements

EPDM/STAT forums

During their program, students are required to attend a minimum of twenty forums in Epidemiology, Biostatistics, and/or in the Adventist Health Study.

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 program director.

Normal time to complete the program

1.66 years (6 academic quarters) based on full-time enrollment; part time permitted

Biostatistics — M.S., M.P.H. Comparison

Public Health	Course Title	MPH	MS
PHCJ 605	Overview of Public Health	1.0	1.0
RELE 534	Ethical Issues in Public Health	3.0	3.0
ENVH 509	Principles of Environmental Health	3.0	
EPDM 509	Principles of Epidemiology	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 675	Integrated Public Health Capstone	2.0	
STAT 521	Biostatistics I	4.0	
Totals		**29.0**	**4.0**
Major	**Course Title**	**MPH**	**MS**
EPDM 510	Epidemiologic Methods I	3.0	3.0
EPDM 515	Clinical Trials	3.0	3.0
STAT 522	Biostatistics II	4.0	4.0
STAT 523	Biostatistics III	4.0	4.0
STAT 525	Applied Multivariate Analysis	3.0	3.0
STAT 535	Modern Nonparametric Statistics	3.0	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
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
EPDM 509	Principles of Epidemiology		3.0
STAT 521	Biostatistics I		4.0
Totals		**36.0**	**43.0**
Research	**Course Title**	**MPH**	**MS**
STAT 694A	Research	1.0	
Totals		**1.0**	
Thesis	**Course Title**	**MPH**	**MS**
STAT 695	Thesis		4.0
Totals			**4.0**
Field Experience	**Course Title**	**MPH**	**MS**
PHCJ 798A	Public Health Practicum (Minimum of 100 hours) [1]	2.0	
Totals			
Overall Totals		**66.0**	**51.0**

[1] Practicum units are in addition to the minimum didactic units required for the degree.

Environmental and Occupational Health — M.P.H.

Program director
Padma Uppala

The M.P.H. degree curriculum in environmental and occupational health is designed for individuals with professional practitioner career objectives in the area of environmental and occupational health. It helps prepare them to meet the growing employment market for environmental health specialists, industrial hygienists, geographic information system specialists, industrial hygienists, geographic information system specialists, and other professions that examine human-environment interactions. 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 health specialist (REHS) examination administered by the California Department of Public Health. Satisfactory performance in 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 program:

- Biological science with laboratory (one year)
- General chemistry with laboratory (one year)
- General physics with laboratory (one year)
- Calculus or college algebra (one course)
- Organic chemistry with laboratory (minimum of two-quarter sequence)

Corequisite

- General microbiology with laboratory (one course), taken during the first two quarters of the program
- Additional units required for the degree

Program requirements

Public health core		
ENVH 586	Environmental Health Administration	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
Major [1]		
ENVH 515	Food Quality Assurance	3
ENVH 567	Hazardous Materials and Solid-waste Management	3
ENVH 568	Water Quality Assurance	3
ENVH 569	Environmental Sampling and Analysis	4
ENVH 581	Principles of Industrial Hygiene	3
ENVH 587	Environmental Toxicology	3
ENVH 589	Environmental Risk Assessment	3
ENVH 605	Seminar in Environmental and Occupational Health	1
ENVH 566	Outdoor Air Quality and Human Health	3
or ENVH 575	Indoor Air Quality	
Geoinformatics		
HGIS 524	GIS Software Applications and Methods	3
HGIS 539	GIS Applications in Environmental Health	2
Electives		
Chosen in consultation with advisor		2
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree		
PHCJ 798D	Public Health Practicum (Minimum of 8 units/400 hours)	
or PHCJ 798A	Public Health Practicum	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
Total Units		**59**

[1] Experienced environmental health professionals may request waiver of up to 7 units and replace with electives.

Field practicum

All environmental and occupational health students must register and complete a total of 400 hours of field practicum.

Noncourse requirements

Culminating Experience

The following requirements comprise the culminating experience for the M.P.H. degree in environmental and occupational health:

1. A formal, oral presentation and a written paper on a topic of current environmental health importance. Student presentations and paper are evaluated on professionalism, scientific merit, and thoroughness.
2. Field experience (upon completion of essential major course work)
3. Full written report of project (not later than one month after successful oral presentation)

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 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.

Normal time to complete the program

1.33 years (9 academic quarters) based on full-time enrollment; part time permitted

Epidemiology — M.P.H.

Program directors
Khaled Bahjri
David Shavlik

The program leading to an M.P.H. degree in epidemiology provides theoretical and practical training applicable to a variety of public health issues. Two concentrations are offered by the program, and each is designed to meet a particular professional need.

Learner outcomes

Upon completion of this program, the graduate should be able to:

- Collaborate with or serve as a research consultant to health professionals.
- Conduct high-quality epidemiologic research—including appropriate design, data collection, statistical analyses, and interpretation and reporting of results.
- Be familiar with disease surveillance as practiced in state, county, and national health agencies/departments.
- Critically review the health literature and identify strengths and weaknesses of design, analyses, and conclusions.

Indicators of educational effectiveness

- Culmination activity: oral examination, oral presentation of applied research using presentation software, and written report of applied research
- Term papers
- Final examinations
- Course evaluation

Prerequisite

- Calculus (one course)
- Behavioral science (one course)
- Additional prerequisites specific to chosen concentration

Concentrations

Medical epidemiology

The M.P.H. degree in medical epidemiology specifically targets health professionals (e.g., MD, nurses, PT, OT, pharmacists) who are interested in becoming proficient in research or in practicing epidemiology in a public health setting (e.g., public health department, CDC, cancer registries, WHO), or clinical setting (hospital epidemiologists).

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

During their program, students are required to attend a minimum of twenty forums in epidemiology, biostatistics and/or in the Adventist Health Study.

Culminating activity

The culminating activity consists of research, including a written report and oral presentation; professional portfolio (upon completion of the research); a field practicum; and an exit interview with the program director (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, cancer, osteoporosis, longevity, infectious diseases, reproductive outcomes, 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)

EPDM/STAT forums

During their program, students are required to attend a minimum of twenty forums in epidemiology, biostatistics, and/or in the Adventist Health Study.

Culminating activity

In order to obtain a degree, the student is required to successfully complete the culminating activity as required by the respective programs. The culminating activity consists of research, including a written report and oral presentation; professional portfolio; a field practicum; and an exit interview with the relevant program director.

Program requirements

Medical epidemiology concentration

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 521	Biostatistics I	4
Major		
EPDM 510	Epidemiologic Methods I	3
EPDM 511	Epidemiologic Methods II	3
EPDM 512	Epidemiologic Methods III	3
EPDM 515	Clinical Trials	3
EPDM 635A	Epidemiological Studies of Seventh-day Adventists A	1
STAT 522	Biostatistics II	4
STAT 548	Analytical Applications of SAS	2
STAT 564	Survey and Advanced Research Methods	3
EPDM 565	Epidemiology of Cancer	3
or EPDM 566	Epidemiology of Cardiovascular Disease	
Electives		
Chosen in consultation with advisor		
EPDM 5__	Epidemiology Elective	3
Research project		
EPDM 699A	Applied Research	1
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree		
PHCJ 798A	Public Health Practicum (2 units)	
Total Units		**58**

Research epidemiology concentration

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 521	Biostatistics I	4
Major		
EPDM 510	Epidemiologic Methods I	3
EPDM 511	Epidemiologic Methods II	3
EPDM 512	Epidemiologic Methods III	3
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 522	Biostatistics II	4
STAT 548	Analytical Applications of SAS	2
STAT 557	Research Data Management	3
STAT 564	Survey and Advanced Research Methods	3
EPDM 565	Epidemiology of Cancer	3
or EPDM 566	Epidemiology of Cardiovascular Disease	
EPDM 515	Clinical Trials	3
or EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement	
Electives		
Chosen in consultation with advisor		
EPDM 5__	Epidemiology Elective	5
Research project		
EPDM 699A	Applied Research	1
EPDM 699B	Applied Research	1
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree		
PHCJ 798B	Public Health Practicum (4 units)	
or PHCJ 798A	Public Health Practicum	
Total Units		**66**

Normal time to complete the program

Medical Epidemiology concentration — 2 years (8 academic quarters) based on full-time enrollment; part time permitted

Research Epidemiology concentration —2.33 years (9 academic quarters) based on full-time enrollment; part time permitted

Global Health — M.P.H.

Program director
Donn Gaede

The master's degree Global Health Program 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 while building on the global health competencies defined in the model developed by the Association of Schools and Programs of Public Health in 2011, the program enables graduates to contribute to a better quality of life for all people—

especially those who are vulnerable, underserved, marginalized, and disadvantaged. The program's extensive network of global and local faculty and organizational resources affords a broad spectrum of options for students to learn and practice the “art and science” of this exciting discipline.

The program prepares career professionals who work in the nonprofit, relief, and development sectors. Graduates of the program may qualify for positions in nongovernmental, faith-based, and community-based organizations; county, state, and national health departments; private foundations; and public health enterprises and public health practice organizations. 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 (CDC); and national assistance organizations like the United States Agency for International Development (USAID). Further academic training is also an option for graduates interested in teaching and research. Those with prior field experience and additional language/s proficiency (for example, French or Spanish) are generally given preference both during student admission and later, when applying for jobs.

Learner outcomes

Utilizing an experiential approach, the competency-based curriculum is built around three primary themes:

- Developing and maintaining a sustainable, healthy environment
- Supporting and empowering communities, families, and individuals in their efforts to attain optimal health and development
- Advocating for social justice, human rights, and equity among vulnerable populations.

Graduates are expected to apply cross-cultural skills and demonstrate technical competence in:

- assessing systems, services, capacity, needs, resources, and the multifactorial determinants of health and disease
- planning, implementing, managing, monitoring, and evaluating comprehensive, integrated health and development programs
- building and facilitating multidisciplinary, intersectoral collaborations within and between countries/regions
- advocating for justice, equity (including gender equity), human rights, and universal access to health and social services that contribute to individual and community well-being
- contributing to basic, applied, operational, and translational research to advance health and development

The program is designed around three learning domains that enable graduates to have:

- a broad, comprehensive knowledge base or theoretical framework covering the major concepts and key issues in global health
- appropriate competencies and skill sets (for example, in program planning/evaluation, grant proposal preparation, communication and informatics, research, advocacy, leadership, etc.)
- a Christian, faith-based worldview that informs their activities in the practice environment

Educational effectiveness

Educational effectiveness will be demonstrated through preparation of global health reports, intervention proposals, field-based community program implementation and evaluation, development of advocacy plans and research proposals, active participation in global community/research projects, and successful completion of the field practicum and culminating experience.

Corequisite

- Anatomy and physiology
- Microbiology

(These may be taken concurrently during the first-year quarters of the program, in addition to units required for the degree.)

Units required

The minimum total units required for program completion is 56 (including culminating experience), in addition to the required field practicum units (variable). For global health majors, a range of 6 (minimum required) to 15 units of elective courses may be taken to provide a student the opportunity for further in-depth study and skill building to develop areas of emphases, such as maternal and child health, global epidemiology, tobacco prevention/control, nutrition, and health geoinformatics. The student needs to regularly consult with his/her faculty academic advisor when planning the program (including the selection of appropriate electives) in keeping with the student's professional interests and career objectives. In addition, the student should consult with his/her financial aid advisor for approval prior to taking additional elective courses.

Program requirements

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
GLBH 545	Integrated Community Development [1]	4
GLBH 564	Fundamentals of Community Health and Development I	2
GLBH 565	Interventions in Community Health and Development I	3
GLBH 566	Fundamentals of Community Health and Development II	2
GLBH 567	Interventions in Community Health and Development II	3
GLBH 568	Fundamentals of Community Health and Development III	2
GLBH 569	Interventions in Community Health and Development III	3
GLBH 605	Seminar in Global Health	1
STAT 515	Grant- and Contract-Proposal Writing	3
Electives		
Elective [2]		6

Practicum		
Practicum units are in addition to the minimum graduate units required for the degree		
Choose one option		
Option 1		
	PHCJ 798D	Public Health Practicum (Minimum of 8 units/400 hours)
	or PHCJ 798A	Public Health Practicum
	or PHCJ 798B	Public Health Practicum
	or PHCJ 798C	Public Health Practicum
Option 2		
	GLBH 797	MIP Residency in Global Health (12 units)
Total Units		**56**

[1] This field-based course involves international travel and fulfillment of required prerequisites. A separate laboratory fee must be paid at the time of registration into this course (subject to change, if needed).

[2] Choose any School of Public Health graduate-level course not required by the program, in consultation with advisor

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 field practicum manual). The format includes a review of literature of the public health issue addressed, purpose of the field practicum, methods, results, and discussion (plus references and appendices). A section is devoted to the student's critical evaluation of the field experience, including the global health competencies applied during the field practicum. Documentation also includes an evaluation from the student's field supervisor/mentor. The final document is reviewed and approved by the student's faculty advisor before being accepted by the department as fulfilling this requirement.

2. Portfolio
   The professional portfolio enables students to prepare and collect evidence of content knowledge, skills, and worldview used to support learning activities during the program. It also serves as evidence presented to potential employers of the skills, competencies, and capacities that students have developed or acquired during the course of 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 plans.

4. Two courses are also considered part of the culminating experience: PHCJ 675 Integrated Public Health Capstone and GLBH 545 Integrated Community Development.

Normal time to complete the program

2.33 years (9 academic quarters) based on full-time enrollment; part time permitted

Health Care Administration — M.B.A.

Program director
Elisa J. Blethen

The School of Public Health offers a Master of Business Administration (M.B.A.) degree in health-care administration. The degree provides students with a broad understanding of health-care management in line with appropriate and relevant industry-leading competencies. In addition, students will engage in practical experience to apply the principles learned through an 800-hour practicum in the health sector. Graduates are prepared for administrative careers in health service organizations —including medical centers, health plans, physician groups 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 careers in the health-care sector.

Health professionals who are currently employed and have at least five years professional work experience in health-care administration are eligible to apply for a waiver of up to 9 units, as specified, of the M.B.A. program.

Learner outcomes

Upon completion of this degree, the student should be able to

1. Apply health-care knowledge to economic analysis and policy.
2. Define organizational structure and governance, as well as equitable and effective human resource policies.
3. Apply principles of health-care finance and managerial accounting to health care.
4. Integrate market research with strategic planning in health care.
5. Employ a wide array of quality improvement processes and tools in health-care operations management.
6. Determine how technology supports practice, research, and decision making in health care.
7. Evaluate and analyze the impact that current health-care policies may have on health-care services.

Vision statement

The vision of Loma Linda University's M.B.A. degree program is to be recognized for excellence in values-based, health-care management education.

Mission statement

The mission of the Loma Linda University M.B.A. degree program is to develop ethical and innovative thinkers who excel as leaders in health care, serving a global community.

The program fulfills this mission through:

- Values-based learning in a Christian institution
- A curriculum focused on health care
- Fostering critical thinking, collaboration, and respect for diverse ideas
- Immersive practicum in local or international health-care settings
- Mentorship opportunities with health-care executives

Values

In addition to the seven values held by Loma Linda University, the M.B.A. degree program also upholds the following:

Professionalism—The demonstration of ethics, sound professional practice, social accountability, and community stewardship. The desire to act in a way that is consistent with one's values and what one says is important.

Initiative—Identifying a problem, obstacle, or opportunity; and taking action in light of this identification to address current or future problems or opportunities. Initiative should be seen in the context of proactively doing things and not simply thinking about future actions.

Collaboration—The ability to work cooperatively with others, to be part of a team. Collaboration applies when a person is a member of a group of people functioning as a team.

Accountability—The ability to hold people accountable to standards of performance or to ensure compliance using the power of one's position or force of personality appropriately and effectively, with the long-term good of the organization in mind.

Educational effectiveness

Educational effectiveness will be determined by papers, presentations, experiential exercises, tests, field practicum projects/papers, and an exit interview. There will also be a competency inventory survey conducted two times during the student's time at Loma Linda University—upon starting the M.B.A. degree program and at the end upon completion of all classes and the HCAP experience.

Health-care administration practicum (HCAP)

The health-care administration practicum (HCAP) 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 director and practicum coordinator consult with the student to determine the most suitable health-care facility for the HCAP placement. Suitability is determined by the student's skill sets and interests, and the host organization's resources and requirements.

The completion of the HCAP series (cumulative total of 800 hours) is required for the M.B.A. degree and will be integrated with course work throughout the student's program.

The practicum coordinator will work closely with students and their mentors in monitoring student progress. Students will present their HCAP experiences to the program faculty and students in final papers and oral presentations.

The HCAP experience may not be required of students who are currently employed, with five years of health-care administration experience. Students with five years or more experience will complete a competency inventory assessment to demonstrate their experience to potentially reduce or waive the HCAP hours. Students enrolled in a professional clinical program who are also enrolled in the M.B.A. degree program are required to complete 400 hours in their HCAP as their clinical education is counted as exposure to practical and professional development.

Individuals who may benefit from the program

Individuals interested in administrative careers in health service organizations— including hospitals, health plans, physician groups and dental practices, and long-term and managed-care settings, among others.

Program requirements

Public health core		
HADM 505	Managerial Statistics and Epidemiology for Healthcare	4
PHCJ 605	Overview of Public Health	1
Major		
HADM 506	Principles of Health-Care Finance	3
HADM 507	Principles of Accounting in Health Care	3
HADM 514	Health-Care Economics	3
HADM 528	Organizational Behavior in Health Care	3
HADM 529	Health-Care Negotiations and Conflict Resolution	3
HADM 532	Public Health Law	3
or HADM 534	Health-Care Law	
HADM 542	Managerial Accounting for Health-Care Organizations	3
HADM 555	Health-Care Delivery Systems	4
HADM 559	Health-Care Marketing	3
HADM 564	Health-Care Finance	3
HADM 574	Managing Human Resources in Health-Care Organizations	3
HADM 601	Health Systems-Operations Management	3
HADM 604	Health Systems Strategic Planning	3
HADM 605	Health-Care Quality Management	3
HADM 690	Health-Care Management Capstone	3
Religion		
RELE 535	Ethical Issues in Health-Care Management	3
Electives		
Elective [1]		3
Practicum		
Practicum units are in addition to the minimum didactic units required for the degree.		
HADM 724A	Health-Care Administration Practicum (Total of 16 units/800 hours)	
or HADM 724B	Health-Care Administration Practicum	
or HADM 724C	Health-Care Administration Practicum	
or HADM 724D	Health-Care Administration Practicum	
Total Units		**57**

[1] Choose from School of Public Health courses, in consultation with advisor

Noncourse requirements

Culminating activity. The M.B.A. degree student is required to produce a final report at the end of the HCAP experience and to present the findings at a formal presentation arranged as part of the grade for the practicum

course. They will also complete a final project and portfolio as part of the Integrated Capstone (HADM 690 Health-Care Management Capstone).

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 survey. Students are required to fill out an exit survey and attend an exit interview with the M.B.A. degree program director or faculty representative at the conclusion of the program. They will also complete a competency Inventory survey at the conclusion of the program.

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment; part time permitted

Health Education — M.P.H.

Program director
Daniel Handysides

The number of required courses for the Master of Public Health (M.P.H.) degree programs 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.

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 curriculum may function as community health educators in a variety of public and private settings. 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
- 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 On-line Learning (1 unit)—online program format only (not counted towards the units required for the degree)

Web site information

For more information, please see our Web site at <llu.edu/public-health/online>.

Program requirements

On Campus

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	

PHCJ 605	Overview of Public Health [1]	1
PHCJ 675	Integrated Public Health Capstone [2]	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
HPRO 524	Adolescent Health	3
HPRO 530	Fundamentals of Research in Health Behavior and Health Education	3
HPRO 535	Health Education Administration and Leadership	3
HPRO 537A	Community Programs Laboratory--A [3]	2
HPRO 537B	Community Programs Laboratory--B [4]	1
HPRO 537C	Community Programs Laboratory--C	1
HPRO 538	Health Education Program Development and Evaluation [4]	3
HPRO 539	Policy and Issues in Health Education	3
HPRO 553	Addiction Theory and Program Development	3
HPRO 589	Qualitative Research Methods [3]	3
Selected electives		
Choose from the following		6
HPRO 523	Maternal/Child Health: Policy and Programs	
HPRO 526	Lifestyle Diseases and Risk Reduction	
HPRO 527	Obesity and Disordered Eating	
HPRO 550	Women in Development	
HPRO 567	Reproductive Health	
HPRO__	Health Education [5]	
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree.		
PHCJ 798A	Public Health Practicum (4-8 units/200 - 400 hours) [6]	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
or PHCJ 798D	Public Health Practicum	
Total Units		**58**

1. To be taken the first quarter of the program
2. To be taken in the final quarter of program
3. HPRO 537A and HPRO 589 to be taken concurrently.
4. HPRO 537B and HPRO 538 to be taken concurrently.
5. As are available and recommended by an advisor or program coordinator
6. Returning peace corps fellows may receive advanced standing for the practicum and need to present a written report.

Online

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
PHCJ 605	Overview of Public Health [1]	1
PHCJ 675	Integrated Public Health Capstone [2]	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
Major		
HPRO 524	Adolescent Health	3
HPRO 530	Fundamentals of Research in Health Behavior and Health Education	3
HPRO 535	Health Education Administration and Leadership	3
HPRO 538	Health Education Program Development and Evaluation	3
HPRO 539	Policy and Issues in Health Education	3
HPRO 553	Addiction Theory and Program Development	3
HPRO 589	Qualitative Research Methods	3
HPRO 696	Directed Study/Special Project	4
Selected electives		
Elective		6
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree.		
PHCJ 798A	Public Health Practicum (4-8 units/200 - 400 hours) [3]	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
or PHCJ 798D	Public Health Practicum	
Total Units		**58**

1. To be taken the first quarter of program
2. To be taken in the final quarter of program
3. Returning peace corps fellows may receive advanced standing for the practicum and need to present a written report.

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.

Normal time to complete the program

2.33 years (9 academic quarters) based on less than full-time enrollment

Health Education M.P.H. — On Campus, Online Comparison

Public Health Core	Course Title	On Campus	Online
NUTR 509 or 510	Public Health Nutrition and Biology	3.0	3.0
ENVH 509	Principles of Environmental Health	3.0	3.0
EPDM 509	Principles of Epidemiology	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 521 or 509	Biostatistics I	4.0	
STAT 509	General Statistics		4.0
Totals		**27.0**	**27.0**
Major	**Course Title**	**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 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 537A	Community Programs Laboratory--A	2.0	
HPRO 537B	Community Programs Laboratory--B	1.0	
HPRO 537C	Community Programs Laboratory--C	1.0	
HPRO 696	Directed Study/Special Project		4.0
Totals		**25.0**	**25.0**
Selected Electives	**Course Title**	**On Campus**	**Online**
Choose from the following:		6.0	
HPRO ___ Health Education[1]			
HPRO 523	Maternal/Child Health: Policy and Programs		
HPRO 526	Lifestyle Diseases and Risk Reduction		
HPRO 527	Obesity and Disordered Eating		
HPRO 550	Women in Development		
HPRO 567	Reproductive Health		
Elective			6.0
Totals		**6.0**	**6.0**
Field Experience	**Course Title**	**On Campus**	**Online**
Practicum units are in addition to the minimum graduate units required for the degree.			
PHCJ 798A, 798B, 798C, or 798D	Public Health Practicum (4-8 units/200 - 400 hours)		
Totals			
Overall Totals		**58.0**	**58.0**

[1] As are available and recommended by advisor or program coordinator

Health Policy and Leadership — M.P.H.

Program director
Sherma Charlemagne-Badal

The Master of Public Health (M.P.H.) degree in health policy and leadership prepares participants to analyze, develop, and advocate for health policies, develop leadership principles and skills, enhance the skills required to formally educate the community regarding health policy, and take on a leadership role in community development projects. Participants understand the health policy development process and that health policy is a multidisciplinary field of inquiry and practice concerned with a) social determinants of health and b) the delivery, quality, and costs of health and health care for individuals and populations.

The goals of the program are to study new methods of serving others and helping them live better lives by connecting individuals of passion, vision, and initiative with other like-minded individuals in order to successfully initiate, manage, and implement comprehensive health policy programs and projects. The M.P.H. degree Health Policy and Leadership Program promotes a multidisciplinary approach to policy analysis that supports health policymakers' efforts to make policy decisions that will develop a health system that is accountable to the population it serves—effecting positive, lasting change that will improve health and health services within communities and the state, as well as those at the national and international levels.

Learner outcomes

Upon completion of this degree, the graduate should be able to:

1. Demonstrate leadership by communicating a shared vision, influencing change, and being a champion for solutions to organizational and community challenges.
2. Describe the policy process for improving the health status of populations.
3. Produce health policy communications for appropriate stakeholders, using appropriate channels and technology.
4. Demonstrate leadership in health policy and advocacy for public health issues.
5. Identify issues that influence access to care, including health services to special populations.
6. Apply systems thinking to current challenges in the health system.
7. Apply the principles of strategic planning to make recommendations for organizational and community health initiatives.
8. Understand the principles of finance and economics and their implications for health policy and management.

Educational effectiveness

- Course work
- Individual advisement
- Field experience
- Professional portfolio
- Exit interview

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.

Program requirements

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
HADM 501	Health Policy and Leadership Seminar	1
HADM 510	Health Policy Analysis and Synthesis	3
HADM 514	Health-Care Economics	3
HADM 529	Health-Care Negotiations and Conflict Resolution	3
HADM 532	Public Health Law	3
HADM 536	Health Policy Communications	3
HADM 545	Government Policy and Health Disparities	3
HADM 580	Foundations of Leadership	3
HADM 586	Building Healthy Communities: Integrative Health Policy	3
Religion		
RELE 534	Ethical Issues in Public Health	3
Electives		
Choose from the following:		3-4
HADM 506	Principles of Health-Care Finance	
HADM 555	Health-Care Delivery Systems	
HADM 604	Health Systems Strategic Planning	
Field experience		
Practicum units are in addition the minimum didactic units required for the degree.		
PHCJ 798D	Public Health Practicum (Total of 8 units/400 hours)	
or PHCJ 798A	Public Health Practicum	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
Total Units		**57-58**

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 Public Health Association (APHA).

- *Health administration colloquia (ten).* Participation in a minimum of ten noncredit colloquia designed to acquaint students with various aspects of the health-care industry is required.

Culminating experience

The culminating activity includes a research paper or professional project, field experience upon completion of essential major course work, professional presentation upon completion of the field experience, and an exit interview with the M.P.H. degree 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.

Normal time to complete the program

2.33 years (9 academic quarters) based on full-time enrollment; part time permitted

Lifestyle Medicine — M.P.H.

Program director
Hildemar Dos Santos

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 59-unit, predominantly online program. 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

- 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)
- Pathology of human systems

Program requirements

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 501	Introduction to On-line Learning	1
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
Major		
HPRO 500	Stress Management	2
HPRO 515	Mind-Body Interactions and Health Outcomes	4
HPRO 524	Adolescent Health	3
HPRO 526	Lifestyle Diseases and Risk Reduction	3
HPRO 527	Obesity and Disordered Eating	3
HPRO 553	Addiction Theory and Program Development	3

HPRO 565	Tobacco Use: Prevention and Interventions	3
HPRO 573	Exercise Physiology I	3
HPRO 606	Motivational Interviewing	2
NUTR 529	Health Aspects of Vegetarian Eating	3
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree.		
PHCJ 798B	Public Health Practicum (4 units/200 hours)	
or PHCJ 798A	Public Health Practicum	
Total Units		**59**

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).

Normal time to complete the program

2 years (7 academic quarters) based on full-time enrollment; part time permitted

Maternal and Child Health — M.P.H.

Program director
Patti Herring

The Maternal, Newborn and Child Health (MNCH) Program leading to the M.P.H. degree prepares graduates to demonstrate the competencies identified by the Association of Teachers of Maternal and Child Health and the Association of Schools and Programs 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 MNCH 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.

Learner outcomes

Graduates of this program in MNCH will have the skills necessary to:

1. Apply public health research, practice and management tools to the organization—to develop implementation and evaluation of maternal-child health programs in various 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, newborns, 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

- Demonstrate college-level conceptualization and writing skills
- Professional license in a medical or health-related discipline (nursing, dentistry, medicine, social work, dietetics)—*preferred but not required*

Research

Although not required, students may have the opportunity to collaborate with researchers and maternal-and-child-health practitioners.

Individuals who may benefit

Licensed health professionals with experience in public health are encouraged to apply to this program. This program is highly recommended for individuals with health profession and/or public health experience.

Program requirements

Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
PHCJ 605	Overview of Public Health [1]	1
PHCJ 675	Integrated Public Health Capstone [2]	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
EPDM 534	Epidemiology of Maternal-Child Health	3
HPRO 523	Maternal/Child Health: Policy and Programs	3
HPRO 524	Adolescent Health	3
HPRO 537A	Community Programs Laboratory--A [3]	2
HPRO 537B	Community Programs Laboratory--B [4]	1
HPRO 537C	Community Programs Laboratory--C	1
HPRO 538	Health Education Program Development and Evaluation [4]	3
HPRO 550	Women in Development	3
HPRO 556	High-Risk Infants and Children: Policy and Programs	3
HPRO 559	Lactation Management	3
HPRO 567	Reproductive Health	3
HPRO 589	Qualitative Research Methods [3]	3
HPRO 614	Seminar in Maternal and Child Health Practice	2
NUTR 534	Maternal and Child Nutrition	3
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree.		

PHCJ 798A	Public Health Practicum (4-8 units/200 - 400 hours)	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
or PHCJ 798D	Public Health Practicum	
Total Units		**63**

1 To be taken the first quarter of the program

2 To be taken in the final quarter of program

3 HPRO 537A and HPRO 589 to be taken concurrently.

4 HPRO 537B and HPRO 538 to be taken concurrently.

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.

Normal time to complete the program

2.33 years (9 academic quarters) based on full-time enrollment; part time permitted

Nutrition with coordinated program in dietetics — M.P.H.

Program director
Ella Haddad

The Master of Public Health (M.P.H.) degree curriculum in nutrition and dietetics 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 Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND), 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 ACEND. 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 Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND).
- Apply systems management and use of resources to the provision of nutritional services.

Educational effectiveness

Indicators of educational effectiveness include:

1. successful completion of a comprehensive examination
2. field practicum
3. field practicum report
4. food systems management affiliation
5. clinical affiliation
6. exit interview with the program director.

Prerequisite

- Chemistry through organic
- Microbiology
- Physiology

All prerequisites must be completed with a passing grade of B or higher.

Individuals who may benefit from the program

Graduates with bachelor's degrees or higher who seek credentialing as registered dietitians (RDs).

Program requirements

Corequisites		
Units do not count toward degree		
DTCS 343	Medical Nutrition Therapy II	5
DTCS 554	Advanced Medical Nutrition Therapy	3
DTCS 566	Food Chemistry and Experimental Foods	4
DTCS 575	Food Systems Management	4
DTCS 777	Food Systems Management Affiliation	6
DTCS 778	Clinical Nutrition Affiliation	12
NUTR 490	Topics in Foods and Food Preparation	1
NUTR 504	Nutritional Metabolism	5
NUTR 526	Nutrition Counseling and Education	2
NUTR 537	Nutrition Education Practicum	1
Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 510	Advanced Public Health Nutrition	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 525	Nutrition Policy, Programs, and Services	3

NUTR 527	Assessment of Nutritional Status	3
NUTR 531	Community Nutrition Intervention I	2
NUTR 532	Community Nutrition Intervention II	1
NUTR 534	Maternal and Child Nutrition	3
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
Electives		
Choose from the following in consultation with advisor:		3
NUTR 519	Phytochemicals	
NUTR 543	Concepts in Nutritional Epidemiology	
NUTR 578	Exercise Nutrition	
NUTR 585	Topics in Global Nutrition	
STAT 515	Grant- and Contract-Proposal Writing	
Research		
NUTR 535	Research Applications in Nutrition	3
Field practicum or research		
Practicum/research units are in addition to the minimum didactic units required for the degree.		
PHCJ 798D	Public Health Practicum (Minimum of 8 units/400 hours)	
or PHCJ 798A	Public Health Practicum	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
Total Units		**58**

Normal time to complete the program

2.33 years (9 academic quarters) based on full-time enrollment; part time permitted

Nutrition — M.P.H.

Program Director

Ella Haddad

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 program director.

Prerequisite

- Chemistry through organic
- Microbiology
- Physiology

All prerequisites must be completed with a passing grade of B or higher.

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.

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.

Program requirements

Corequisites		
Units do not count toward degree		
NUTR 490	Topics in Foods and Food Preparation	1
NUTR 504	Nutritional Metabolism	5
Public health core		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2

NUTR 510	Advanced Public Health Nutrition	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 525	Nutrition Policy, Programs, and Services	3
NUTR 527	Assessment of Nutritional Status	3
NUTR 531	Community Nutrition Intervention I	2
NUTR 532	Community Nutrition Intervention II	1
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
Electives		
Select from the following or in consultation with advisor:		5
DTCS 554	Advanced Medical Nutrition Therapy	
NUTR 519	Phytochemicals	
NUTR 526	Nutrition Counseling and Education	
NUTR 543	Concepts in Nutritional Epidemiology	
NUTR 578	Exercise Nutrition	
NUTR 585	Topics in Global Nutrition	
STAT 515	Grant- and Contract-Proposal Writing	
Research		
NUTR 539	Research Methods in Nutrition	2
Field practicum or research		
Practicum/research units are in addition to the minimum didactic units required for the degree.		
Option 1		
PHCJ 798D	Public Health Practicum (8 units/400 hours)	
or PHCJ 798A	Public Health Practicum	
or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
Option 2		
NUTR 694	Research (2 units)	
Total Units		**56**

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.

Normal time to complete the program

2 years (8 academic quarters) based on full-time enrollment; part time permitted

Nutrition — M.S.

Program Director
Eddy Jara

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.

A minimum of 48 units are required for the M.S. degree. Two options, a thesis (research track) and a nonthesis (course work track), are available. For the research track, the student fulfills the core requirements and implements and completes a research project that culminates in either a publishable manuscript or a thesis. For the course work track, the student fulfills total unit requirements by completing additional elective courses in nutrition and by participating in an ongoing research project. A written comprehensive examination is required for both options.

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 program director.

Prerequisite

- 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.

Individuals who may benefit from the program

Persons who hold a baccalaureate degree in science, or physicians and other heath 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.

Program requirements

Course work track

Corequisites		
Units do not count toward degree		
NUTR 490	Topics in Foods and Food Preparation	1
NUTR 504	Nutritional Metabolism	5
Public Health		
EPDM 509	Principles of Epidemiology	3
HPRO 536	Program Planning and Evaluation	2
PHCJ 605	Overview of Public Health	1
RELE 524	Bioethics and Society	3
or RELE 534	Ethical Issues in Public Health	
Major		
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 527	Assessment of Nutritional Status	3
NUTR 534	Maternal and Child Nutrition	3
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
Electives		
Choose from the following or in consultation with an advisor:		2
HPRO 527	Obesity and Disordered Eating	
NUTR 543	Concepts in Nutritional Epidemiology	
NUTR 554	Critical Care Nutrition I	
NUTR 555	Critical Care Nutrition II	
NUTR 578	Exercise Nutrition	
NUTR 585	Topics in Global Nutrition	
STAT 515	Grant- and Contract-Proposal Writing	
Statistics and research		
NUTR 535	Research Applications in Nutrition	3
NUTR 694	Research	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
STAT 514	Intermediate Statistics for Health-Science Data	3
STAT 548	Analytical Applications of SAS	2
or STAT 549	Analytical Applications of SPSS	
Total Units		**48**

Research track

Corequisites		
Units do not count toward degree		
NUTR 490	Topics in Foods and Food Preparation	1
NUTR 504	Nutritional Metabolism	5
Public Health		
EPDM 509	Principles of Epidemiology	3
PHCJ 605	Overview of Public Health	1
RELE 524	Bioethics and Society	3
or RELE 534	Ethical Issues in Public Health	
Major		
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1
Electives		
Choose from the following or in consultation with advisor:		6
HPRO 527	Obesity and Disordered Eating	
NUTR 543	Concepts in Nutritional Epidemiology	
NUTR 554	Critical Care Nutrition I	
NUTR 555	Critical Care Nutrition II	
NUTR 578	Exercise Nutrition	
NUTR 585	Topics in Global Nutrition	
STAT 515	Grant- and Contract-Proposal Writing	
Statistics and research		
NUTR 539	Research Methods in Nutrition	2
NUTR 694	Research	6
STAT 514	Intermediate Statistics for Health-Science Data	3
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
STAT 548	Analytical Applications of SAS	2
or STAT 549	Analytical Applications of SPSS	
Thesis		
NUTR 695	Thesis	2
Total Units		**48**

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.

Normal time to complete the program

Research Track — 1.66 year (4 academic quarters) based on full-time enrollment; part time permitted

Course work Track — 1.66 year (6 academic quarters) based on full-time enrollment; part time permitted

Population Medicine — M.P.H.

Program Director

Manjit "Mike" Randhawa

The Population Medicine 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:

- Apply epidemiological methods to the prevention and treatment of acute and chronic disease.
- Use basic and advanced statistical methods to correctly interpret data.
- Incorporate effective management approaches in public health settings.
- Promote the use of clinical preventive services.
- Evaluate and minimize risk in lifestyle diseases.
- Apply population medicine skills in community settings.

Indicators of educational effectiveness

- Major papers and projects
- Community practicum report
- Professional portfolio
- Exit interview

Prerequisite

- A health-related degree
  - bachelor's or master's: (e.g., nursing, social work, dental hygiene, physical therapy, occupational therapy, psychology)
  - doctoral: (e.g., M.D., D.O., D.D.S., Pharm.D.)
- Postgraduate direct patient care experience in a health setting, such as a hospital, clinic, or health department
  - bachelor's or master's: two years
  - doctoral: satisfied by 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)

Program requirements

Corequisite		
Unit does not count toward degree		
PHCJ 501	Introduction to On-line Learning	1
Public Health		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
RELE 534	Ethical Issues in Public Health	3
STAT 509	General Statistics	4
Major		
EPDM 528	Applied Epidemiology and Clinical Preventive Services	3
HADM 528	Organizational Behavior in Health Care	3
HPRO 526	Lifestyle Diseases and Risk Reduction	3
STAT 528	Applied Statistics for Clinicians	3
Electives		
Elective [1]		15
Field experience		
Practicum units are in addition to the minimum didactic units required for the degree.		
PHCJ 798A	Public Health Practicum (Minimum of 2 units/100 hours)	
Total Units		**56**

[1] Any SPH graduate-level course not required by the program. Consultation with advisor is encouraged.

Culminating activity

1. Professional portfolio
2. Exit interview

Normal time to complete the program

2 years (5 academic quarters) based on full-time enrollment; part time permitted

Doctoral Degrees

Admissions

The admissions requirements for the doctoral degree programs described below are in addition to the University admissions requirements (p. 24). The minimum eligibility requirements for admission to a doctoral degree program include the following:

- an M.P.H. degree or master's degree in a related field from a regionally accredited institution, with a G.P.A. of 3.5 or above. Applicants with a master's degree in another field may indicate their relevant training, research experience, or educational background comparable to the M.P.H. Dr.P.H. applicants who are admitted without an M.P.H. may be required to take additional course work at the graduate level to satisfy M.P.H. core competencies.
- Satisfactory performance on G.R.E. or equivalent is required; scores must have been attained within the last five years.
- Religious affiliation is not a requirement; but students are expected to adhere to on-campus requirements of modest dress, abstinence from alcohol and smoking, and attendance at weekly chapel, as applicable.

Applicants must satisfy the program-specific admission requirements, including but not limited to prerequisite courses and years of experience. Admissions decisions are based on a review of applicant's transcripts, written statement and research interest and concept paper, letters of recommendation, GRE scores or equivalent, and interview. **Satisfying minimum requirements does not guarantee admission.**

Dr.P.H.

The Doctor of Public Health (Dr.P.H.) degree is designed to provide comprehensive academic and research and advanced practice 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, and complete the program within seven years. Majors are available in:

- Epidemiology
- Health Education – on campus and technology mediated
- Nutrition
- Preventive Care
- Health Policy and Leadership

The doctoral programs offer training for careers in which advanced analytical and conceptual capabilities are required (e.g., teaching, research, practice, 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.

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 communities.
- Write program and grant proposals and compete for external funding.

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. As part of advancement to candidacy, a dissertation guidance committee is formally appointed, 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.

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 *Doctoral 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.

Ph.D.

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 in epidemiology is currently offered. 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.

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.

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, conducting 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 doctoral subcomittee. As part of advancement to candidacy, a dissertation guidance committee is formally appointed 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.

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* and in the SPH *Doctoral Handbook*.

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.

Programs

- Epidemiology — Dr.P.H. (p. 452), Ph.D. (p. 454), (Comparison (p. 455))
- Health Education — Dr.P.H. (p. 456)
- Health Policy and Leadership — Dr.P.H. (p. 457)
- Nutrition — Dr.P.H. (p. 461)
- Preventative Care — Dr.P.H. (p. 462)

Epidemiology — Dr.P.H.

Program director
W. Lawrence Beeson

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. The student is expected to gain relevant teaching experience as part of the training. The program ordinarily consists of sixteen quarters (i.e., 4 years). 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:

- Demonstrate knowledge of disease etiology, progression, and prevention as relevant to public health.
- Identify public health issues and design relevant research proposals using National Institutes of Health (NIH) guidelines.
- Communicate study results orally and in peer-reviewed publications.
- Analyze population data, including the evaluation of confounding and interaction.

Program educational effectiveness indicators

- Dissertation
- Comprehensive examination
- 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 Autumn, Winter, and Spring quarters. In order to graduate, the Dr.P.H. degree candidate must have submitted two papers to peer review journals and have responded to peer review in one of the papers.

EPDM/STAT forums

Doctoral students are required to attend a minimum of ten epidemiology, biostatistics, and/or Adventist Health Study forums during each year of their program.

Program requirements

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		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
PHCJ 605	Overview of Public Health	1
Epidemiologic methods		
EPDM 510	Epidemiologic Methods I	3
EPDM 511	Epidemiologic Methods II	3
EPDM 512	Epidemiologic Methods III	3
EPDM 515	Clinical Trials	3
EPDM 635A	Epidemiological Studies of Seventh-day Adventists A	1
EPDM 635B	Epidemiological Studies of Seventh-day Adventists B	1
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 521	Biostatistics I	4
STAT 522	Biostatistics II	4
STAT 548	Analytical Applications of SAS	2
STAT 564	Survey and Advanced Research Methods	3
Choose from the following		9
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement	
HPRO 543	Writing for Health Professionals	
NUTR 543	Concepts in Nutritional Epidemiology	
STAT 523	Biostatistics III	
STAT 525	Applied Multivariate Analysis	
STAT 535	Modern Nonparametric Statistics	
STAT 545	Survival Analysis	
STAT 557	Research Data Management	
STAT 569	Advanced Data Analysis	
Descriptive epidemiology		
Choose from the following:		12
EPDM 534	Epidemiology of Maternal-Child Health	
EPDM 544	Epidemiology of Infectious Disease	
EPDM 565	Epidemiology of Cancer	
EPDM 566	Epidemiology of Cardiovascular Disease	
EPDM 567	Epidemiology of Aging	
EPDM 588	Environmental and Occupational Epidemiology	
Biomedical sciences		
AHCJ 538	Histology	3
HPRO 501	Human Anatomy and Physiology I	6
HPRO 502	Human Anatomy and Physiology II	6
HPRO 531	Pathology of Human Systems I	3
HPRO 532	Pathology of Human Systems II	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
or NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	
Administration and leadership		
Choose from the following:		6
HADM 510	Health Policy Analysis and Synthesis	
HADM 514	Health-Care Economics	
HADM 528	Organizational Behavior in Health Care	
HADM 529	Health-Care Negotiations and Conflict Resolution	
HADM 542	Managerial Accounting for Health-Care Organizations	
HADM 559	Health-Care Marketing	
HADM 574	Managing Human Resources in Health-Care Organizations	
HADM 584	Current Topics in Health Policy and Leadership	
HADM 585	Policy Development for a Twenty-First Century Health System	
HADM 595	Leadership--Past, Present, and Future	
HADM 604	Health Systems Strategic Planning	
HADM 605	Health-Care Quality Management	
Religion		
RELE 5__	Graduate-level ethics	3
RELR 5__	Graduate-level relational	3
RELT 5__	Graduate-level theological	3
Other required courses		
EPDM 605	Seminar in Epidemiology [1]	3
Electives		
	Elective [2]	8
Research and dissertation		
EPDM 685	Preliminary Research Experience	2
EPDM 694	Research [3]	5
EPDM 698	Dissertation [3]	12
Total Units		**121**

1 One unit per year in program, minimum of 3 units

2 May be chosen from another institution, in consultation with advisor

3 Repeated registrations required to fulfill total units

Normal time to complete the program

5.33 years based on less than full-time enrollment

Epidemiology — Ph.D.

Program director
Nicole Gatto

The aim of this program is to prepare students with strong backgrounds in a health science such as medicine or public health for a career in research and academia. The curriculum is designed to fulfill program requirements while addressing the nature of the student's proposed research program, as well as the student's interest and academic needs. Ph.D. degree students are expected to write scientific journal articles as part of their training. In addition to participating as a teaching assistant and/or a laboratory assistant, the student will also deliver course lectures. The student is responsible for gaining the commitment of an appropriate faculty member to serve as his or 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 or her area of expertise.

Program educational effectiveness indicators

- Published papers
- Grant proposals developed
- 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, microbiology, and biochemistry.

Corequisite

(advanced standing from previous M.P.H. degrees will be considered)

- EPDM 509 Principles of Epidemiology (or equivalent)
- STAT 521 Biostatistics I (or equivalent)
- STAT 548 Analytical Applications of SAS (or equivalent)
- Biochemistry

Teaching assistantship/Laboratory assistantship

Ph.D. degree students are required to participate as 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 doctoral training.

Program requirements

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		
EPDM 509	Principles of Epidemiology	3
STAT 521	Biostatistics I	4
STAT 548	Analytical Applications of SAS	2
Epidemiologic methods		
EPDM 510	Epidemiologic Methods I	3
EPDM 511	Epidemiologic Methods II	3
EPDM 512	Epidemiologic Methods III	3
EPDM 515	Clinical Trials	3
EPDM 635A	Epidemiological Studies of Seventh-day Adventists A	1
EPDM 635B	Epidemiological Studies of Seventh-day Adventists B	1
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 522	Biostatistics II	4
STAT 564	Survey and Advanced Research Methods	3
Descriptive epidemiology		
Choose from the following:		12
EPDM 534	Epidemiology of Maternal-Child Health	
EPDM 544	Epidemiology of Infectious Disease	
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement	
EPDM 565	Epidemiology of Cancer	
EPDM 566	Epidemiology of Cardiovascular Disease	
EPDM 567	Epidemiology of Aging	
EPDM 588	Environmental and Occupational Epidemiology	
EPDM 625	Special Topics in Epidemiology	
Religion		
RELR 5__	Graduate-level relational	3
RELE 525	Ethics for Scientists	3
or RELE 534	Ethical Issues in Public Health	
RELT 615	Seminar in Philosophy of Religion	3
or RELT 617	Seminar in Religion and the Sciences	
Other required courses		
EPDM 605	Seminar in Epidemiology [1]	3
PHCJ 605	Overview of Public Health	1
Cognates		
	Elective [2]	6
Research and dissertation		
EPDM 685	Preliminary Research Experience	2
EPDM 694	Research [3]	11

EPDM 698	Dissertation [3]	12
Total Units		**80**

1 1 unit per year in program, minimum of 3 units

2 Courses in any one public health discipline (ENVH, GIS, GLBH, HADM, HPRO, NUTR, STAT). May also choose courses from another LLU school in consultation with advisor.

3 Repeated registrations required to fulfill total units

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 written for publication a manuscript for a peer-reviewed scientific journal.

Forums/Seminars

Doctoral students are required to attend a minimum of ten Epidemiology, Biostatistics, and/or Adventist Health Study seminars during each year of their program.

Normal time to complete the program

3.33 years based on less than full-time enrollment

Epidemiology — Dr.P.H., Ph.D. Comparison

Corequisites	Course Title	DrPH	PhD
ENVH 509	Principles of Environmental Health[1]	3.0	
EPDM 509	Principles of Epidemiology[1]	3.0	3.0
GLBH 524	Cultural Competence and Health Disparities[1]	2.0	
HADM 509	Principles of Health Policy and Management[1]	3.0	
HPRO 509	Principles of Health Behavior[1]	3.0	
HPRO 536	Program Planning and Evaluation[1]	2.0	
NUTR 509	Public Health Nutrition and Biology[1]	3.0	
PHCJ 605	Overview of Public Health[1]	1.0	
STAT 521	Biostatistics I[1]		4.0
STAT 548	Analytical Applications of SAS[1]		2.0
Totals			

Epidemiologic Methods	Course Title	DrPH	PhD
Select 9 units of the following:		9.0	
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement		
HPRO 543	Writing for Health Professionals		
NUTR 543	Concepts in Nutritional Epidemiology		
STAT 523	Biostatistics III		
STAT 525	Applied Multivariate Analysis		
STAT 535	Modern Nonparametric Statistics		
STAT 545	Survival Analysis		
STAT 557	Research Data Management		
STAT 569	Advanced Data Analysis		
STAT 521	Biostatistics I	4.0	
STAT 548	Analytical Applications of SAS	2.0	
EPDM 510	Epidemiologic Methods I	3.0	3.0
EPDM 511	Epidemiologic Methods II	3.0	3.0
EPDM 512	Epidemiologic Methods III	3.0	3.0
EPDM 515	Clinical Trials	3.0	3.0
EPDM 635A	Epidemiological Studies of Seventh-day Adventists A	1.0	1.0
EPDM 635B	Epidemiological Studies of Seventh-day Adventists B	1.0	1.0
STAT 515	Grant- and Contract-Proposal Writing	3.0	3.0
STAT 522	Biostatistics II	4.0	4.0
STAT 564	Survey and Advanced Research Methods	3.0	3.0
Totals		**39.0**	**24.0**

Descriptive Epidemiology	Course Title	DrPH	PhD
Select 12 units of the following:		12.0	12.0
EPDM 534	Epidemiology of Maternal-Child Health		
EPDM 544	Epidemiology of Infectious Disease		
EPDM 555	Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement		
EPDM 565	Epidemiology of Cancer		
EPDM 566	Epidemiology of Cardiovascular Disease		
EPDM 567	Epidemiology of Aging		
EPDM 588	Environmental and Occupational Epidemiology		
EPDM 625	Special Topics in Epidemiology		
Totals		**12.0**	**12.0**

Biomedical Sciences	Course Title	DrPH	PhD
AHCJ 538	Histology	3.0	
HPRO 501	Human Anatomy and Physiology I	6.0	
HPRO 502	Human Anatomy and Physiology II	6.0	
HPRO 531	Pathology of Human Systems I	3.0	
HPRO 532	Pathology of Human Systems II	3.0	
NUTR 517 or 518	Advanced Nutrition I: Carbohydrates and Lipids	4.0	
Totals		**25.0**	

Administration and Leadership	Course Title	DrPH	PhD
Select 6 units of the following:		6.0	
HADM 510	Health Policy Analysis and Synthesis		
HADM 514	Health-Care Economics		

HADM 528	Organizational Behavior in Health Care		
HADM 529	Health-Care Negotiations and Conflict Resolution		
HADM 542	Managerial Accounting for Health-Care Organizations		
HADM 559	Health-Care Marketing		
HADM 574	Managing Human Resources in Health-Care Organizations		
HADM 584	Current Topics in Health Policy and Leadership		
HADM 585	Policy Development for a Twenty-First Century Health System		
HADM 595	Leadership--Past, Present, and Future		
HADM 604	Health Systems Strategic Planning		
HADM 605	Health-Care Quality Management		
Totals		**6.0**	
Religion	**Course Title**	**DrPH**	**PhD**
RELE 5__	Graduate-level Ethics	3.0	
RELT 5__	Graduate-level Theological	3.0	
RELE 525 or 534	Ethics for Scientists		3.0
RELT 615 or 617	Seminar in Philosophy of Religion		3.0
RELR 5__	Graduate-level Relational	3.0	3.0
Totals		**9.0**	**9.0**
Other Required Courses	**Course Title**	**DrPH**	**PhD**
PHCJ 605	Overview of Public Health		1.0
EPDM 605	Seminar in Epidemiology[2]	3.0	3.0
Totals		**3.0**	**4.0**
Cognates	**Course Title**	**DrPH**	**PhD**
Elective[3]			6.0
Totals			**6.0**
Electives	**Course Title**	**DrPH**	**PhD**
Elective[4]		8.0	
Totals		**8.0**	
Research and Dissertation	**Course Title**	**DrPH**	**PhD**
EPDM 694	Research[5]	5.0	11.0
EPDM 685	Preliminary Research Experience	2.0	2.0
EPDM 698	Dissertation[5]	12.0	12.0
Totals		**19.0**	**25.0**
Overall Totals		**121.0**	**80.0**

1 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

2 1 unit per year in program, minimum of 3 units

3 Courses in any one public health discipline (ENVH, GIS, GLBH, HADM, HPRO, NUTR, STAT). May also choose courses from another LLU school in consultation with advisor.

4 May be chosen from another institution, in consultation with advisor

5 Repeated registrations required to fulfill total units

Health Education — Dr.P.H.

Program director
Naomi N. Modeste

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 on health education offers advanced knowledge and competencies in the health education process and includes advocacy, critical analysis, leadership, professionalism, and ethics; as well as other health education domains. The health education Dr. P.H. degree is offered in two formats: on campus and online technology-mediated.

The online technology-mediated format is targeted toward working professionals. The curriculum consists of synchronous learning, online courses, and blended courses. Specific hardware and software requirements for the program must be met. Students are expected to be present on campus during the research process to defend their proposals and dissertation.

Learner outcomes

Upon completion of the Dr.P.H. degree 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
- Dissertation proposal defense (qualifying examination)
- 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
- Post-master's degree work experience, preferred

Program requirements

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		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 538	Health Education Program Development and Evaluation	3
HPRO 695	Community Practicum	1
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
PHCJ 605	Overview of Public Health	1
STAT 509	General Statistics	4
Major		
HPRO 543	Writing for Health Professionals	3
HPRO 588	Health Behavior Theory and Research	4
HPRO 589	Qualitative Research Methods	3
HPRO 608	Advanced Seminar in Health Education [7]	6
HPRO__	Health Education	12
Administration and leadership		
HPRO 535	Health Education Administration and Leadership	3
	Elective [1]	9
Cognates		
	Elective [2]	9
Religion		
RELE 5__	Graduate-level ethics	3
RELR 5__	Graduate-level relational	3
RELT 5__	Graduate-level theological	3
Research and evaluation		
HPRO 534A	Research Methods	2
HPRO 534B	Research Methods	2
HPRO 544	Health Education Evaluation and Measurement	3
HPRO 685	Preliminary Research Experience	2
HPRO 694	Research	6
PHCJ 604	Research Seminar [3]	2
STAT 514	Intermediate Statistics for Health-Science Data [4]	3
STAT 549	Analytical Applications of SPSS [5]	2
STAT 568	Data Analysis [6]	3
Dissertation		
HPRO 698	Dissertation [7]	12
Total Units		**95**

1. Courses chosen in consultation with advisor
2. Courses chosen in consultation with advisor; Usually from a different department or school
3. Taken after HPRO 534A Research Methods and HPRO 534B Research Methods
4. Taken after STAT 549 Analytical Applications of SPSS
5. Taken after STAT 509 General Statistics
6. Taken after STAT 514 Intermediate Statistics for Health-Science Data
7. Multiple registrations required to fulfill total units

Normal time to complete the program

7 years based on less than full-time

Health Policy and Leadership — Dr.P.H.

Program director
Edward S. McField

The current, rapidly changing health and health-care landscapes—marked by significant health disparities and varied challenges—demands a diversity of leadership talents. Moreover, creative approaches are needed to meet these challenges. The Doctor of Public Health degree in health policy and leadership at Loma Linda University provides a unique and wonderful opportunity to serve at the very heart of the intersection of leadership and policy, preparing participants for success in leadership positions that have major influence on policies, programs and the public health system. In respecting their experience and backgrounds, participants in our program may also be called co-learners to emphasize the collegiate and peer-learning environment, including their interaction with faculty members and other mentors.

The primary focus of this program is to enhance the skills and abilities of those in positions of leadership; to develop competencies in policy development, analysis, and implementation; applied to health care and social determinants of health—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 exemplary leadership. Program participants are expected to demonstrate a commitment to the core values of Loma Linda University: compassion, integrity, excellence, freedom, justice, self-control, and humility. This program, in part, meets the great need for leaders of integrity who are agents of change, with 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.

The Doctor of Public Health (Dr.P.H.) degree is the highest professional degree for the public health generalist. Participants will focus on public health practice and demonstrate broad knowledge related to professional skills. Consistent with our intentional interdisciplinary approach to doctoral education, this Dr.P.H. degree program offers learners the opportunity to customize an academic plan designed to fulfill their program requirements through unique core courses and a variety of electives offered by the School of Public Health. With approval, in developing their academic plan, learners may also identify courses offered throughout Loma Linda University. Drawing from resources in the School of Public Health and the program faculty's training and expertise in management, leadership, and policy, participants are able to develop leadership skills and competencies in selected policy areas, such as:

1. Health services and health care
2. Systems design and organizational change
3. Health disparities and health equity

4. Food and nutrition
5. Mother-infant health
6. Poverty and social welfare
7. Behavior and mental health
8. Water, air quality, and the built environment
9. Nonprofits and philanthropy
10. Resource development and generation

Description of the curriculum components

Admission

Admission to the program is competitive, with a limited number of qualified applicants selected each year. Admissions requirements (in addition to the University admissions requirements) are:

1. M.P.H. degree or master's degree in a related field
2. Program interview
   a. Evidence of leadership ability and self-motivation
   b. Sample of written work
   c. Concept paper on proposed area of interest
3. Minimum of three years of work experience. Preference may be given to applicants with five or more years of experience
4. Current or potential employment and position in an organization that is supportive of leadership development
5. Satisfactory performance on Graduate Record Examination (GRE) score. MCAT, LSAT, or GMAT scores may be submitted in lieu of the GRE; however, they must have been attained within the last five years. Exceptions may be considered.

Orientation

Each participant must complete the Orientation for Leadership (12 units) in the first year of the program. 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.

Academic plan

The specific program degree depends on previous course work and experience of each program participant. During Orientation for Leadership I, 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 or her portfolio. The completed academic plan is presented prior to initiating the second quarter of the program and must be approved by the program faculty. Changes in the academic plan may be made during the program with approval of the program faculty.

Portfolio

Achievement of competency is demonstrated in part by the evidence contained in a portfolio, not in attendance records or simply the completion of required course work. Based on the academic plan approved in the first quarter, 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.

Comprehensive examination

The comprehensive or qualifying examination also demonstrates achievement of competency. To become a candidate for the Dr.P.H. degree in health policy and leadership, the learner must complete certain academic requirements to achieve the milestone of becoming a candidate for that degree. Advancement to candidacy signifies that the learner has completed the course work and other requirements and is ready to move forward to the dissertation phase. Satisfactory performance is required on the Dr.P.H. degree written comprehensive examination prior to submitting a dissertation proposal.

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. The health policy and leadership Dr.P.H. degree curriculum emphasizes a mixture of professional and academic skills, such as leadership and management, finance and philanthropy, community engagement and advocacy, policy analysis and development, ethics, and research methods.

Research projects

Throughout their program of study, participants are involved in research at various levels. Learners may be part of an ongoing research project at the University or elsewhere. It is anticipated that the research conducted by the program participants would coincide with the research interests of one or more faculty. The research may culminate in the doctoral dissertation, 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 are 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 outside 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 composed of individuals primarily outside the program (five to eight) creates an extended learning environment and helps to create/provide opportunities

through 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, members of these groups nonetheless become extensions of the ethos and mission of the program.

Yearly conferences. As professionals, all participants will attend at least one health policy and leadership conference each year until the completion of their programs and may continue to do so afterward. These open conferences provide students with 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.

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 the health policy development process and that health policy is a multidisciplinary field of inquiry and practice concerned with social determinants of health and the delivery, quality, and costs of health and health care for individuals and populations.
3. *Ethics:* Participants demonstrate the core values of Loma Linda University, including a commitment to justice, 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 within which the academic plan is developed and the portfolio is evaluated.

1. *Policy development and strategy:* Participants understand the framework for policy development and explain how strategy is essential to achieving outcomes, including designing effective advocacy strategies to influence decision making regarding policies that advance public health.
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 ethic, mind style, etc.) in a way that strengthens organizations/communities.
5. *Leading change:* In creating a supportive environment for 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 the core values of the University—including a commitment to social justice, 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

- Course work
- Individual advisement
- Research
- Professional portfolio
- Comprehensive examination
- Dissertation

Initial assessment

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 Orientation for Leadership I (the first of three orientation courses) 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 termination of the participant or in a hold being placed on his or her registration until the necessary progress is made. In all cases, a summary of the review will be included in the participant's portfolio. The portfolio is an integral element of the learner's experience and must be completed prior to defending the research dissertation.

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 two years of the degree program. Notes from these meetings will be included in the participant's portfolio.

Presentations and research papers

Learners are required to secure and maintain membership in an approved professional society, which may include but is not limited to the American Public Health Association (APHA), American Evaluation Association (AEA), or the Association for Public Policy Analysis and Management (APPAM). Learners are required to present (poster or paper) at one national conference of an approved professional society.

Dissertation proposal

As part of their degree requirements, participants prepare a dissertation proposal. The proposal will address a problem or issue of interest and of practical relevance to an organization. This proposal may deal with needs assessment, benchmark study, program design and development, program implementation, program evaluation, or some combination of the above. The emphasis of the Dr.P.H. degree dissertation is on problem-solving and is not necessarily designed to test a hypothesis derived from a disciplinary or theoretical perspective. The dissertation will aim to address a problem defined within the context of an organization and will include a comprehensive analysis of implications for leadership and policy.

Progress through dissertation

The dissertation will be of an applied nature with a focus on practice, problem solving, and demonstrating ability to conduct independent research on a contemporary public health issue. Emphasis will be placed on policy development and health policy strategies, public health leadership, and management of health programs. 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 *Doctoral Handbook*, a clear set of guidelines will further be 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.

Preliminary assessment and public health core competencies

Accepted applicants undergo a preliminary assessment to determine how well the student meets the public health core competencies and to identify areas in which the applicant may require additional preparation. Applicants with a master's degree in another field may indicate their relevant training, research experience, or educational background comparable to the M.P.H. degree. Doctoral applicants admitted without an M.P.H. degree may be required to take additional course work (i.e., corequisites) at the graduate level to compensate for the public health core competencies. These corequisites must be completed during the first quarter of studies. This additional course work does not apply toward the minimum credits required for the Dr.P.H. degree. Similarly, applicants with an M.P.H. degree are required to complete the minimum credits required for the Dr.P.H. degree.

Individuals who may benefit from the program

Given the context of Loma Linda University, participants will be midlevel-to-senior-level managers in public health, health care, public and government agencies, higher education, social welfare organizations, nongovernmental organizations (NGOs), faith-based, community-based organizations (CBOs), and other related groups. Consistent with the program's focus on social determinants of health to promote health equity, individuals from nonhealth sectors are encouraged to apply. Two important requirements are that those admitted to the program will have had sufficient experience in the workplace (three or more years) and that they are currently employed in an organization that is supportive of their degree program and the unique requirement to develop a "learning environment" at the workplace.

Program requirements

Public health core (corequisites)		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
STAT 509	General Statistics	4
Major - Leadership		
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
HADM 584	Current Topics in Health Policy and Leadership	1-2
HADM 589	Advanced Practice in Leadership (Must be taken 3 times and may be repeated up to 8 credits.)	2
HADM 595	Leadership--Past, Present, and Future	3
HADM 604	Health Systems Strategic Planning	3
HADM 689	Graduate Seminar in Leadership	2-4
Major - Health Policy		
HADM 585	Policy Development for a Twenty-First Century Health System	3
HADM 588	Leadership, Policy, and Environmental Change	3
HADM 620	Health Policy Theories and Concepts	4
HADM 510	Health Policy Analysis and Synthesis [1]	3-4
or HADM 625	Health Policy Advocacy and Civic Engagement	
Public health		
HADM 586	Building Healthy Communities: Integrative Health Policy	3

HADM 587	Health Policy and Research	3
EPDM 5__	Epidemiology Elective [2]	3-6
Cognates or electives [3]		
	Elective [4]	6
Religion		
One course required from each of the following areas. May include one additional elective.		
RELR 5__	Graduate-level Relational	3
RELE 5__	Graduate-level ethics	3
RELT 5__	Graduate-level theological	3
Research		
HADM 614	Qualitative Research Design and Practice I	3
HADM 685	Preliminary Research Experience	3
HADM 699	Applied Research	3
HADM 615	Qualitative Research Design and Practice II [5]	3-4
or STAT 514	Intermediate Statistics for Health-Science Data	
or STAT 521	Biostatistics I	
STAT 528	Applied Statistics for Clinicians [6]	3
Dissertation		
HADM 686	Writing Seminar (optional)	1
HADM 697	Dissertation Proposal	4
HADM 698	Dissertation	8
Total Units		**87-95**

1 Choose one in consultation with advisor

2 Advanced epidemiology courses chosen in consultation with advisor.

3 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 emphasis, or additional statistical or data analysis that will be required by the student's dissertation research.

4 Choose in consultation with advisor

5 Choice depends on methodology chosen for dissertation research

6 or equivalent in consultation with advisor

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.

Colloquia

Learners are required to attend a minimum of three hours of noncredit colloquia each quarter designed to acquaint students with various aspects of health policy and leadership.

Culminating experience

In addition to 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.

Normal time to complete the program

3.66 years based on less than full-time enrollment

Nutrition — Dr.P.H.

Program director
Sujatha Rajaram

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 the community nutrition program, 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

- Master's degree in nutrition or an M.S. or M.P.H. degree with completion of all prerequisite courses; 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 higher.

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.

Program requirements

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		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 509	Principles of Health Behavior	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
PHCJ 605	Overview of Public Health	1
PHCJ 675	Integrated Public Health Capstone	2
STAT 509	General Statistics	4
Public Health		
RELE 5__	Graduate-level ethics	3
RELR 5__	Graduate-level relational	3
RELT 5__	Graduate-level theological	3
STAT 514	Intermediate Statistics for Health-Science Data	3
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 549	Analytical Applications of SPSS	2
Select in consultation with advisor:		2-3
EPDM 5__	Epidemiology elective	
STAT ___	Statistics	
Major		
NUTR 510	Advanced Public Health Nutrition	3
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 525	Nutrition Policy, Programs, and Services	3
NUTR 527	Assessment of Nutritional Status	3
NUTR 534	Maternal and Child Nutrition	3
NUTR 543	Concepts in Nutritional Epidemiology	3
NUTR 564	Contemporary Issues of Vegetarian Diets	3
NUTR 608	Doctoral Seminar in Public Health Nutrition	3
Electives		
NUTR__	Nutrition [1]	20
Research and evaluation		
NUTR 539	Research Methods in Nutrition	2
NUTR 685	Preliminary Research Experience	2
NUTR 694	Research	4-6
PHCJ 604	Research Seminar	2
STAT 564	Survey and Advanced Research Methods	3
Dissertation		
NUTR 698	Dissertation	12
Total Units		**95-98**

[1] Choose 20 units, in consultation with advisor, from the areas of nutrition, public health, basic science or leadership and administration; a minimum of eight (8) units must be from NUTR

Culminating experience

As a part of the culminating experience, the student completes two publishable scientific papers.

Normal time to complete the program

4.33 years based on less than full-time enrollment

Preventive Care — Dr.P.H.

Program director
Hildemar Dos Santos

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.

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
- General chemistry
- Organic chemistry
- Microbiology
- Anatomy and/or Physiology
- General psychology

Program 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		
ENVH 509	Principles of Environmental Health	3
EPDM 509	Principles of Epidemiology	3
GLBH 524	Cultural Competence and Health Disparities	2
HADM 509	Principles of Health Policy and Management	3
HPRO 501	Human Anatomy and Physiology I	6
HPRO 502	Human Anatomy and Physiology II	6
HPRO 509	Principles of Health Behavior	3
HPRO 519	Pharmacology	3
HPRO 531	Pathology of Human Systems I	3
HPRO 532	Pathology of Human Systems II	3
HPRO 536	Program Planning and Evaluation	2
NUTR 509	Public Health Nutrition and Biology	3
or NUTR 510	Advanced Public Health Nutrition	
PHCJ 605	Overview of Public Health	1
STAT 509	General Statistics	4
or STAT 521	Biostatistics I	
Major		
HPRO 515	Mind-Body Interactions and Health Outcomes	4
HPRO 526	Lifestyle Diseases and Risk Reduction	3
HPRO 527	Obesity and Disordered Eating	3
HPRO 529	Preventive and Therapeutic Interventions in Chronic Disease	4
HPRO 553	Addiction Theory and Program Development	3
HPRO 565	Tobacco Use: Prevention and Interventions	3
HPRO 573	Exercise Physiology I	3
HPRO 578	Exercise Physiology II	3
HPRO 586	Introduction to Preventive Care	1
HPRO 587	Preventive Care Practice Management	2
HPRO 588	Health Behavior Theory and Research	4
HPRO 606	Motivational Interviewing	2
NUTR 504	Nutritional Metabolism	5
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 556	Nutritional Applications in Lifestyle Intervention	1
NUTR 578	Exercise Nutrition	2
Choose from the following:		3
EPDM 534	Epidemiology of Maternal-Child Health	
EPDM 544	Epidemiology of Infectious Disease	
EPDM 565	Epidemiology of Cancer	
EPDM 566	Epidemiology of Cardiovascular Disease	
Cognates or electives		
	Elective [1]	12
Religion		
One course required from each of the following three areas. May include one additional elective.		
RELE 5__	Graduate-level Ethics	3
RELR 5__	Graduate-level Relational	3
RELT 5__	Graduate-level Theological	3
Research and evaluation		
HPRO 534A	Research Methods	2
HPRO 534B	Research Methods	2
HPRO 694	Research (1.0-14.0)	6
PHCJ 604	Research Seminar	2
STAT 514	Intermediate Statistics for Health-Science Data	3
STAT 568	Data Analysis	3
STAT 548	Analytical Applications of SAS [2]	2
or STAT 549	Analytical Applications of SPSS	
Research and dissertation		
HPRO 698	Dissertation [3]	12
Internship		
Internship units are in addition to the minimum didactic units required for the degree		
HPRO 704A	Internship (42 units/1400 clock hours) [3]	
or HPRO 704B	Internship	
or HPRO 704C	Internship	
or HPRO 704D	Internship	
Total Units		**107**

[1] 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.

[2] Students taking STAT 548 Analytical Applications of SAS should also take STAT 569 Advanced Data Analysis. Note the SAS-based sequence: STAT 521 Biostatistics I, STAT 548 Analytical Applications of SAS, STAT 522 Biostatistics II, STAT 569 Advanced Data Analysis.

[3] Multiple registrations required to fulfill total units

Normal time to complete the program

7 years based on less than full-time enrollment

School of Religion

Dean's Welcome

Welcome to the most unusual school of Loma Linda University. The School of Religion has several 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 master's degrees and our new doctoral program in religion is contained in this section of the Catalog. These programs have been designed to specifically equip graduates with skills in clinical ministry, chaplaincy, bioethics, and the integration of religion with both the sciences and health. 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,

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 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.
- Humanity'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.

Dean

Jon Paulien

Associate Dean

Roy Branson

Primary faculty

D. Leigh Aveling

Roy Branson

John C. Brunt

Clyde P. Cassimy

Janice De-Whyte

Art C. Earll

Carla Gober Park

James O. Greek III

Andy Lampkin

David R. Larson

Theodore N. Levterov

Jon Paulien

Johnny Ramirez

Richard Rice

Randy Roberts

Siroj Sorajjakool

Terry R. Swenson

Bernard A. Taylor

Calvin Thomsen

Sigve Tonstad

James W. Walters

Zane Yi

Secondary faculty

Henry H. Lamberton

D. Graham Stacey

Associated faculty

Warren Johns

Marquelle Klooster

Gina Jervey Mohr

Grace Oei

Emeritus professor

Louis Venden

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.

In addition to Loma Linda University (p. 24) admissions requirements, the applicant must also complete the following 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.

- Applicants to the Clinical Ministry Program, Chaplaincy 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.
- A personal interview is desirable and should be arranged with the director of the program in which the student wishes to study.
- 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.

Application deadlines

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:

- Autumn Quarter: August 1
- Winter Quarter: November 1
- Spring Quarter: February 1
- Summer Quarter: May

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.

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> 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.

Programs

- Adventist Life and Thought — Certificate (p. 467)
- Bioethics — M.A. (p. 468), Certificate (p. 468) (Comparison)
- Chaplaincy — M.S.Chap. (p. 470)
- Clinical Ministry — M.A. (p. 471), Certificate (p. 471)
- Denominational Studies for Chaplains — Certificate (p. 473)
- Religion and Health — D.Sc. (p. 474)
- Religion and Society — M.A. (p. 476)

Adventist Life and Thought — School Certificate

Program director
Johnny Ramirez-Johnson

This fully online program has been designed for practicing health-care professionals seeking academic course work to gain more in-depth knowledge of Adventist beliefs and heritage; and how our history impacts the Adventist health-care system's current mission.

The School of Religion certificate program presents a Loma Linda perspective on the Seventh-day Adventist mission, characterized by a relational approach to theology. It answers the question, "How does a particular doctrine, idea, or philosophy affect how I relate to others and how I relate with God?"

Further, this program focuses on the healing ministry of Jesus as the model for teaching and healing. This approach uses current understanding of God's desire for a relationship *now*, rather than focusing on the distant past or future. How do Adventist doctrine, ideas, and philosophy promote healing of the nations and making humanity whole as we follow in the footsteps of Jesus' healing ministry today?

Graduates of this certificate program will be able to articulate the following learning outcomes:

- Explain Adventist theological uniqueness and the biblical foundations of its doctrines.

- Demonstrate knowledge and competent use of Scriptures.
- Demonstrate an understanding of Christian theology and history, with specific attention to Seventh-day Adventist life and thought.
- Integrate Adventist doctrines from a health-care professional's perspective as they model the healing ministry of Jesus Christ as representatives of the SDA Church.
- Synthesize their individual SDA philosophy of ministry within a health-care setting.

Program faculty represent areas of expertise that include biblical studies, theology, practical theology, marriage and family therapy, cultural psychology, American church history, health education, nursing, spiritual care, health-care theory and practice, and ethics. This diversity of specialists provides students with a rich and balanced program of study.

School certificate

The Adventist Life and Thought Program certificate is classified as a school certificate that is defined as a document of completion of a nondegree educational experience. This School of Religion school certificate is awarded upon completion of an organized program of study at the graduate level.

Students registering in a school certificate program register through the University Records office for the courses; but the certificate is issued by the School of Religion, not Loma Linda University. University Records maintains a record of registration but not the certificate. The school maintains records of the certificate and its awarding.

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.

Transfer credit

No transfer units are accepted for the Adventist Life and Thought Program certificate.

Admissions

In addition to Loma Linda University (p. 24) admissions requirements, the applicant must also complete the following requirements:

- Bachelor's degree from a regionally accredited institution
- Minimum undergraduate grade point average of 3.0. (Provisional acceptance may be granted to those with at least a 2.5 undergraduate grade point average; regular acceptance status must be attained by earning a 3.0 G.P.A. for the first 8 units of course work)
- Three letters of recommendation – one each from a professional/pastoral source, academic source (professor, advisor, etc.), and a peer in health-care ministry

The School of Religion has a rolling admissions policy in which completed applications are reviewed and students are accepted on a continual basis. Please contact the School of Religion Enrollment Services Department for specific information and dates regarding the next available session: <religion@llu.edu> or <llu.edu/religion>.

Note: All documentation should be received within two weeks after the application deadline for the quarter of choice. The online application will prompt you with instructions and timelines to successfully complete the process.

Program requirements

Students must complete 20 quarter units of course work described below, with an overall grade point average of B or better, with no grade lower than C.

Required		
Choose 20 units from the following:		20
RELR 540	Wholeness Portfolio	
RELT 500	Biblical Hermeneutics	
RELT 504	Daniel and the Prophetic Tradition	
RELT 505	Seventh-day Adventist History	
RELT 506	Seventh-day Adventist Beliefs	
RELT 507	The Saga of Adventists and Healthcare: Cornflakes, Baby Fae, and the Healing of the Nations	
RELT 565	Vision of Healing: The Message of the Book of Revelation	
Total Units		**20**

Length of program

7 academic quarters—part-time enrollment permitted only

Bioethics — M.A., Certificate

Program director
James W. Walters

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 inquiry.
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.

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 8 units of approved graduate-level courses from other accredited institutions into the Bioethics Program.

Special features

RELE 598 Master's Seminar I: This capstone seminar reflects on previous class work and involves integration of conceptual presuppositions, 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 they choose from these two seminars.)

RELE 599 Master's Seminar II: 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. Professional students are encouraged to write for their professional publications, adopting relevant size and editorial considerations. Paper(s) will total 20-25 pages.

Certificate

The Bioethics Program certificate is designed to provide basic competence in bioethics to a health-care professional. It consists of 28 units of academic credit: three core bioethics courses—RELE 524 Bioethics and Society, RELE 588 Explorers of the Moral Life, and RELE 589 Biblical Ethics); 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-to-three quarters of full-time study.

Admissions

In addition to Loma Linda University (p. 24) and School of Religion (p. 466) admissions requirements, the applicant must also complete the following requirements:

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.
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.
5. Three letters of recommendation from current or former professors.

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>.

Program requirements

M.A.

Required		
RELE 524	Bioethics and Society	4
RELE 588	Explorers of the Moral Life	4
RELE 589	Biblical Ethics	4
RELE 598	Master's Seminar I	2
RELE 599	Master's Seminar II	2
Standard electives		
Choose required units from the following: [1]		32
RELE 525	Ethics for Scientists	
RELE 534	Ethical Issues in Public Health	
RELE 548	Christian Social Ethics	
RELE 554	Clinical Ethics Practicum I	
RELE 555	Clinical Ethics Practicum II	
RELE 564	Ethics and Health Disparities	
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	
RELE 566	Heroes of Health Care	
RELE 567	World Religions and Bioethics	
RELE 568	Bioethics and the Law	
RELG 504	Research Methods in Religious Studies	
RELG 674	Reading Tutorial	
RELG 697	Independent Research	
Total Units		**48**

[1] Up to 8 units of approved graduate-level courses from other LLU schools or other accredited institutions may be chosen.

Normal time to complete the program

1.33 years (5 academic quarters) based on full-time enrollment; part time permitted

Certificate

Required		
RELE 524	Bioethics and Society	4
RELE 588	Explorers of the Moral Life	4
RELE 589	Biblical Ethics	4
Standard electives		
Choose required units from the following:		15
RELE 525	Ethics for Scientists	
RELE 534	Ethical Issues in Public Health	
RELE 548	Christian Social Ethics	
RELE 554	Clinical Ethics Practicum I	
RELE 555	Clinical Ethics Practicum II	
RELE 564	Ethics and Health Disparities	
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	
RELE 566	Heroes of Health Care	
RELE 567	World Religions and Bioethics	
RELE 568	Bioethics and the Law	
Total Units		**27**

Normal time to complete the program

1 year (3 academic quarters) based on full-time enrollment; part time permitted

Chaplaincy — M.S.Chap.

Program director
Calvin Thomsen

The program leading to the Master of Science in Chaplaincy (M.S.Chap) degree prepares students to demonstrate competencies in the field of chaplaincy in four areas:

1. Theory of pastoral care competencies (integration of theological, psychological, and sociological perspectives into the practice).
2. Identity and conduct competencies (formation of pastoral identity within the clinical context, including integration of professional ethics in the daily practice).
3. Pastoral competencies (provision of effective pastoral care using appropriate pastoral, spiritual, and theological resources).
4. Professional competencies (integration of pastoral/spiritual care into the life and service of the institution in which it resides, while establishing and maintaining professionalism within the interdisciplinary relationships).

The curriculum, both academic and clinical, is specifically designed for individuals who wish to pursue the profession of chaplaincy. It prepares students to enter the field at the level of associate chaplain, according to the Association of Professional Chaplains (APC) and Adventist Chaplaincy Ministries (ACM).

Settings providing clinical opportunities for training in chaplaincy include: Loma Linda University Medical Center (LLUMC), Loma Linda University Behavioral Medicine Center, 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 completion of the M.S. in Chaplaincy Program, students will demonstrate:

1. Increased clinical skills related to the field of chaplaincy.
2. Ability to integrate theoretical, theological, biblical, and philosophical perspectives into the practice of chaplaincy.
3. Critical thinking and the ability to identify spiritual issues within the context of health care.
4. Development of personal understanding of ethical standards and commitments of wholeness that inform their work and personal lives through value development.
5. Understanding of the five areas of competencies in the field of chaplaincy (theory of pastoral care, effects of assumptions and attitudes on health care, conduct, clinical skills, and functions of the profession of chaplaincy).

Faculty

The faculty represents a balance between academic expertise and clinical experience in the field of pastoral care and chaplaincy; as well as a variety of disciplines, including: biblical studies, theology, marriage and family therapy, cultural psychology, health education, nursing, spirituality, and ethics.

Admissions

In addition to Loma Linda University (p. 24) and School of Religion (p. 466) admissions requirements, the applicants to the M.S. in Chaplaincy Program are expected to present/complete:

1. an undergraduate record from a regionally accredited institution with a grade point average of B (3.00) or better in the overall program and in the major field;
2. the Personal Potential Index (PPI), a Web-based, standardized evaluation system administered by Educational Testing Services (ETS), used to measure six characteristics that successful chaplains possess. To access this test, visit http://www.ets.org.;
3. three letters of recommendation (two academic and one pastoral); and
4. an interview (faculty members in relational studies and a representative from the LLUMC CPE program).

Program requirements

Corequisites

Students entering without an undergraduate degree in theology/religion need to take 5 graduate theology courses.

SDA students in this category will need to take 5 graduate theology courses from Loma Linda University School of Religion Denominational Certificate Program.

Core		
RELG 504	Research Methods in Religious Studies	3-4
RELG 696	Project	1-4
RELR 520	Clinical Training in Spiritual Care [1]	4
RELR 525	Health Care and the Dynamics of Christian Leadership	3-4
RELR 526	Pastoral and Professional Formation	3-4
RELR 527	Crisis Care and Counseling	3-4
RELR 540	Wholeness Portfolio	4
RELR 565	Pastoral Theology and Methodology	3-4
RELR 567	Pastoral Counseling	3-4
RELR 568	Care of the Dying and Bereaved	3-4
RELR 574	Liturgy, Homiletics, and Healing	3-4
RELR 584	Culture, Psychology, and Religion	3
RELT 508	Introduction to Contemporary Christian Theology	3-4
RELT 520	Church History	3-4
RELT 557	Theology of Human Suffering	3-4
Selectives		
Biblical studies:		
Choose from the following:		9-12
RELT 500	Biblical Hermeneutics	
RELT 504	Daniel and the Prophetic Tradition	

RELT 558	Old Testament Thought	
RELT 559	New Testament Thought	
RELT 560	Jesus the Revealer: The Message of the Gospel of John	
RELT 565	Vision of Healing: The Message of the Book of Revelation	
Ethics:		
Choose from the following:		4-8
RELE 524	Bioethics and Society	
RELE 564	Ethics and Health Disparities	
RELE 577	Theological Ethics	
Ministry and spiritual formation:		
Choose from the following:		7-9
RELR 535	Spirituality and Mental Health	
RELR 586	Psychology of Moral and Faith Development	
RELR 587	Religion and the Social Sciences	
RELR 588	Personal and Family Wholeness	
RELT 540	World Religions and Human Health	
RELT 555	The Adventist Experience	
RELT 556	Spirituality in Seventh-day Adventist Theology	
Internship		
Students are required to register for 800 hours of clinical internship. Internship units do not count toward minimum didactic units required for the degree.		
Register for either course or a combination of both for a total of 24 units:		
RELG 795	Clinical Internship (12 units = 400 hours)	
RELR 524	Clinical Pastoral Education (12 units = 400 hours)	
Total Units		**72**

[1] To be repeated one time to fulfill total unit requirement

Noncourse requirements

Clinical internship

Students must also satisfactorily complete an approved, 800-hour clinical internship. The program recommends that this requirement be met by the satisfactory completion of two quarters of clinical pastoral education (CPE) at an accredited CPE center. (Note: Acceptance into the CPE program is at the discretion of the CPE supervisor and must be arranged individually and in advance.) It is recommended that students take the following course work prior to their clinical internship:

RELR 568 Care of the Dying and Bereaved (3-4)

RELR 527 Crisis Care and Counseling (3-4)

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.

Ministerial Internship

Students in the M.S.Chap. degree program must show evidence of one year of pastoral assistance to a selected local congregation.

Submit a personal statement to include:

1. One year of pastoral assistance to a selected local congregation.
2. A clear written agreement between the student and the pastor as to the functions each student has performed or will be perform.
3. A written summary and assessment of his/her performance for the local church that includes a self-reflection of this pastoral engagement.
4. The self-reflection that includes formation of pastoral identity, pastoral skills, areas for improvement, and a theological reflection that informs the practice of ministry.
5. A report from the pastor indicating the students' involvement in the local church.

Critical essays

At the end of their first year, students will be asked to write one critical essay dealing with two program learning outcomes at the end of their first year.

Project

Students are required to register for RELG 696 Project. To fulfill the requirements for this course, students must be able to articulate in written form in their own words the twenty-nine competencies—based on their theoretical understanding, reflection, and experiences. The project is scheduled toward the end of the educational process after students have completed 80 percent of the course work and after they have been exposed to some clinical work.

Case Presentation

Students are required to present a case to faculty members in the relational area prior to graduation. The case should follow the stated format and highlight clinical skills in chaplaincy taking into consideration assessment, interventions, theories, spirituality, and pastoral formation.

Normal time to complete the program

2 years (8 academic quarters) based on full-time enrollment; part time permitted

Clinical Ministry — M.A., Certificate

Program director
Siroj Sorajjakool

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. The School of Religion and other cooperating departments within the University provide needed academic preparation.

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 completion of the Clinical Ministry Program, students will demonstrate:

1. Increased clinical skills related to clinical ministry.
2. 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. Development of personal understanding of ethical standards and commitments of wholeness that inform their work and personal lives through values development.

Course requirements

In order to receive the Master of Arts degree in clinical ministry from Loma Linda University, the student will complete a specified minimum of 48 units of course work, with an overall grade point average of B or higher, with no grade lower than a C; and with no grade lower than a B- in a core course.

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.

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.

Admissions

In addition to Loma Linda University (p. 24) and School of Religion (p. 466) admissions requirements, the applicants to the M.S. in Chaplaincy Program are expected to present/complete:

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.

Program requirements

M.A.

Major		
RELE 524	Bioethics and Society	3-4
RELG 504	Research Methods in Religious Studies	3-4
RELR 527	Crisis Care and Counseling	3-4
RELR 565	Pastoral Theology and Methodology	3-4
RELR 567	Pastoral Counseling	3-4
RELR 568	Care of the Dying and Bereaved	3-4
RELR 574	Liturgy, Homiletics, and Healing	3-4
RELR 584	Culture, Psychology, and Religion	3-4
RELR 587	Religion and the Social Sciences	3-4
RELR 694	Seminar in Clinical Ministry	3-4
RELT 557	Theology of Human Suffering	3-4
RELT 558	Old Testament Thought	3-4
RELT 559	New Testament Thought	3-4
Thesis, project, or publishable papers		
RELG 697	Independent Research	2-5
RELG 696	Project	1-4
or RELG 698	Thesis	
Internship		
Internship units do not count toward minimum didactic units required for the degree.		
RELG 795	Clinical Internship (12 units)	12
Total Units		**48**

Clinical internship

Students must also satisfactorily complete an approved, 400-hour clinical internship.

The program recommends that the requirements of RELG 795 Clinical Internship 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	3-4
RELR 567	Pastoral Counseling	3-4
RELR 568	Care of the Dying and Bereaved	3-4

Students who wish to receive academic credits for their clinical internship may register for RELR 524 Clinical Pastoral Education 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.

Length of program

1.25 years (5 academic quarters) — based on full-time enrollment; part time permitted

Certificate

The clinical ministry certificate option is available for students who prefer not to complete the full M.A. degree program.

Major		
RELE 524	Bioethics and Society	3-4
RELR 527	Crisis Care and Counseling	3-4
RELR 565	Pastoral Theology and Methodology	3-4
RELR 567	Pastoral Counseling	3-4
RELR 568	Care of the Dying and Bereaved	3-4
RELR 584	Culture, Psychology, and Religion	3-4
RELR 694	Seminar in Clinical Ministry	3-4
RELT 557	Theology of Human Suffering	3-4
Internship		
Internship units do not count toward minimum didactic units required for the certificate.		
RELG 795	Clinical Internship	12
Total Units		**27**

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 Clinical Internship) be satisfied through one quarter of clinical pastoral education (CPE).

Length of program

1 year (3 academic quarters) — based on full-time enrollment; part time permitted

Denominational Studies for Chaplains — Certificate

Program director
Johnny Ramirez-Johnson

The fully online 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 and Loma Linda University Medical Center Chaplains Department, 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 Canvas as its learning management system (LMS).

This certificate is a two-year program in which all courses and learning occur via the LMS. The learning activities for each course facilitate opportunities for personal growth via the online, class-driven learning activities. Students can begin the program in any given quarter and are expected to follow the course requirements as they are offered, one per quarter in a continual sequence. The program includes an individual report, preparation and presentation of a portfolio, and an exit interview—all conducted via the LMS and facilitated by video conference communication technology.

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 graduates to minister as representatives of the Seventh-day Adventist Church.
5. Synthesize individual Adventist versions of a philosophy of ministry within the health-care setting.

Course requirements

In order to receive the certificate in denominational studies for chaplains from Loma Linda University, the student will complete a specified minimum of 28 units of course work, 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. No electives are offered.

Transfer credits

No transfer units are accepted for the Denominational Studies for Chaplains Program.

Admissions

In addition to Loma Linda University (p. 24) and School of Religion (p. 466) admissions requirements, the applicants to the Denominational Studies for Chaplains Program are expected to present/complete:

1. Received a college baccalaureate degree from an accredited institution.
2. 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.
3. Been a chaplain and received a recommendation from ACM.
4. Two recommendations (one professional/ministerial and one from a former professor or academic advisor).

Program requirements

Required		
RELR 540	Wholeness Portfolio	4
RELR 541	History of Seventh-day Adventist Chaplaincy and Healthcare Policy Making	4
RELR 595	Independent Study in Chaplaincy	1
RELT 500	Biblical Hermeneutics	3
RELT 504	Daniel and the Prophetic Tradition	3
RELT 505	Seventh-day Adventist History	3
RELT 506	Seventh-day Adventist Beliefs	4
RELT 507	The Saga of Adventists and Healthcare: Cornflakes, Baby Fae, and the Healing of the Nations	3
RELT 565	Vision of Healing: The Message of the Book of Revelation	3
Total Units		**28**

Normal time to complete the program

2 years (8 academic quarters) based on less than half-time enrollment

Religion and Health — D.Sc.

Program director
Carla Gober

Associate Program Director
Siroj Sorajjakool

The program leading to the Doctor of Science (D.Sc.) degree in religion and health prepares students in the following areas:

1. Theological and biblical foundations for the religion and health dialogue
2. Health-care policy and advocacy implications for religion and health
3. Interaction of religion and health within a specific arena of health, chaplaincy, religion or faith/health leadership
4. Integration and leadership skill development
5. Contribution to the field of religion and health through practice and research

The curriculum, both academic and clinical, is specifically designed for individuals who wish to pursue work within the context of religion and health (faith/health leadership, chaplaincy leadership, integrative research). It prepares students to enter the field at the level of associate chaplains according to the Association of Professional Chaplains (APC) and Adventist Chaplaincy Ministries (ACM) if they choose to focus on this area. Other possibilities for the faith and health dialogue include, but are not limited to, bioethics, family counseling, family life education, lifestyle intervention, and leadership.

Settings providing practicum opportunities include, but are not limited to, Loma Linda University Health (LLUH) hospitals; institutes (Behavioral Health Institute, Global Health Institute, Institute for Health Policy and Leadership, Institute for Community Partnership, Lifestyle Medicine Institute); centers (Center for Bioethics, Center for Spiritual Life and Wholeness, Center for Health Promotion); LLU schools that offer health concentrations; LLU Campus Ministries; professor-driven research/service opportunities; and entities outside the LLUH system that are approved.

Loma Linda University Medical Center, under the auspices of the Department of Chaplain Services, is an accredited clinical pastoral education (CPE) center. Students who seek chaplaincy as a career may fulfill the practicum requirement with CPE and may apply for this clinical placement. (Separate application procedures are required).

Program objectives

Upon completion of the D.Sc. degree in religion and health, the students will:

1. Identify how theological and biblical perspectives provide a unique foundation for discussing issues in religion and health
2. Understand the implications of health-care policy and advocacy in establishing new behavior, affecting society, and establishing long-term change in relation to religion and health
3. Demonstrate how theories around whole person care and wholeness contribute to drawing conclusions and related outcomes in the faith-health dialogue in relation to clinical care and leadership
4. Summarize the ways religion and health interact within a specific area of health (through the concentration)

5. Demonstrate how to impact the field of health and/or religion from a faith-health perspective
6. Demonstrate the capacity to create research questions and agendas in the integration of religion and health

Faculty

The faculty represents a balance between academic expertise and clinical experience in the fields of religion and health, counseling, health education, nursing, spirituality, family therapy, pastoral care, chaplaincy, biblical studies, theology, marriage and family therapy, cultural psychology, and ethics.

Admissions

In addition to Loma Linda University (p. 24) admission requirements, the applicant is expected to present the following requirements:

1. Graduate record from a regionally accredited institution with a grade point average of 3.30 or better
2. Health Sciences Reasoning Test (HSRT) or the GRE test
3. Three letters of recommendation (two academic and one pastoral)
4. Interview that includes faculty members in the relational studies area and a representative from the LLUMC CPE program (if the student seeks chaplaincy as a career)
5. Statement of research interest and sample paper

Program requirements

In order to receive the Doctor of Science (in Religion and Health) degree from Loma Linda University, the student will complete a minimum of 60 units of course work beyond the MS in Chaplaincy (or 84 units beyond the MA in religion/theology or master's degree in a health related field), with an overall grade point average of B or better.

Co-requisites

Those entering with the 72 unit MS in Chaplaincy degree offered at LLU or an MDiv degree meet the prerequisites. For those entering with a MA in religion/theology or a master's degree in a health-related field, the student must complete an additional 24 units of religion/theology (as co-requisite to the program), 15 units of which must be in theology or Biblical studies. The student may complete the co-requisite units while engaged in the doctoral program. Students entering with specialized training beyond the MA level may apply for advanced standing.

Curriculum

Core		
RELR 500	Religion and Global Health	4
RELR 508	Religion, Health-Care Policy, and Advocacy	4
RELT 509	Theological and Biblical Perspectives in Religion and Health	4
RELR 692	Seminar in Religion and Health Care Leadership: Current Trends	4
Research courses		
RELR 591	Qualitative Research in Religious Studies	3-4
RELR 590	Quantitative Research in Religious Studies	3-4
Concentration		
(See available concentrations listed below) [1]		22-24
Dissertation		
RELG 596	Dissertation Proposal	1
RELR 592	Doctoral Portfolio in Religion and Health	2
RELG 699	Dissertation Research	11
Clinical internship		
Practicum units are in addition to the minimum didactic units required for the degree.		
RELG 796	Religion and Health Practicum (400-600 hours) [2]	8
Total Units		**60**

[1] 22-23 units if student takes either or both of the religion research courses for 4 units

[2] The program recommends that this requirement be met by the satisfactory completion of at least one quarter of practicum work at an approved site. If the student seeks chaplaincy as a career, he/she may engage in at least one quarter of clinical pastoral education (CPE) at an accredited CPE center. (Note: Acceptance into the CPE program is at the discretion of the CPE supervisor and must be arranged individually and in advance.) It is recommended that students complete all course work prior to their practicum internship. 1-2 units of CPE encouraged for those seeking a chaplaincy career (in addition to the CPE already obtained before entering the program)

Concentrations

Specific health concentrations

Courses in the concentrations listed below are subject to change as these are dependent on current course/program offerings in the School of Behavioral Health and the School of Public Health.

In lieu of one of the concentrations listed below, students will be able to create a general health concentration in which courses are selected in a specific area of study. The courses selected must be made in consultation with the student's program advisor and an advisor in the school(s) from which the selectives are chosen.

Religion concentration

Students with a prior background in health may choose this option. Courses are to be selected in consultation with their program advisor.

School of Behavioral Health

Drug and Alcohol Counseling

Required		
COUN 524	Psychopharmacology and Medical Issues	3
or MFAM 524	Psychopharmacology and Medical Issues	
COUN 568	Groups: Process and Practice	3
or MFAM 568	Groups: Process, and Practice	
COUN 638	Family Therapy and Chemical Abuse	3
or MFAM 638	Family Therapy and Chemical Abuse	
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 645	Advanced Substance Abuse-Treatment Strategies	3
MFAM 635	Case Presentation Seminar and Legal Issues	3
MFAM 636	Case Presentation Seminar and Client-Centered Advocacy	3
MFAM 637	Case Presentation Seminar and Global Practices	3
Total Units		**24**

Family Counseling

Required		
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 535	Case Presentation and Professional Studies	3
MFAM 551	Family Therapy: Foundational Theories and Practice	3
MFAM 553	Family Systems Theory	3
Electives [1]		
MFAM ___	Marital and family therapy electives	12
Total Units		**24**

[1] Courses to be chosen in consultation with an advisor in the Department of Marital and Family Counseling

Family Life Education

Required		
FMST 515	Professional Issues in Family Life Education	3
FMST 524	Family Resource Management	2
FMST 528	Parenting	2
FMST 529	Family Life Education	3
FMST 614	Family Communication	3
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 553	Family Systems Theory	3
MFAM 674	Human Sexual Behavior	3
Total Units		**22**

School of Public Health

Emergency Preparedness and Response

Required		
GLBH 519	Principles of Disaster Management I	3
GLBH 520	Principles of Disaster Management II	3
GLBH 521	Principles of Disaster Management III	3
GLBH 558	Public Health Issues in Emergencies	3
GLBH 559	Psychosocial Models and Interventions	3
GLBH 560	Economic, Legal, and Policy Issues in Disasters	3
Electives		
Choose from the following:		3
GLBH 547	Refugee and Displaced Population Health	3
GLBH 548	Violence and Terrorism Issues	
GLBH 555	Technology in Emergency Management	
HGIS 522	Principles of Geographic Information Systems and Science	
HGIS 524	GIS Software Applications and Methods	
HGIS 527	Geospatial Technologies for Emergency Preparedness and Management	
Total Units		**24**

Lifestyle Intervention

Required		
HPRO 500	Stress Management	2
HPRO 509	Principles of Health Behavior	3
HPRO 526	Lifestyle Diseases and Risk Reduction	3
HPRO 536	Program Planning and Evaluation	2
HPRO 565	Tobacco Use: Prevention and Interventions	3
NUTR 509	Public Health Nutrition and Biology	3
NUTR 529	Health Aspects of Vegetarian Eating	3
PHCJ 501	Introduction to On-line Learning	1
PHCJ 605	Overview of Public Health	1
	Elective	3
Total Units		**24**

Maternal and Child Health

Required		
HPRO 509	Principles of Health Behavior	3
HPRO 523	Maternal/Child Health: Policy and Programs	3
HPRO 536	Program Planning and Evaluation	2
HPRO 550	Women in Development	3
HPRO 553	Addiction Theory and Program Development	3
HPRO 556	High-Risk Infants and Children: Policy and Programs	3
HPRO 567	Reproductive Health	3
HPRO 614	Seminar in Maternal and Child Health Practice	2
NUTR 534	Maternal and Child Nutrition	3
Total Units		**25**

Portfolio and critical essays

Students will be completing a Doctoral Portfolio in Religion and Health, along with their course work, which will require 6 critical essays that address all six of the program outcomes. One is required at the completion of the first quarter in the program (RELR 592 Doctoral Portfolio in Religion and Health). The remainder of the Portfolio is due at the completion of the course work and must be completed prior to exams.

Dissertation

Students are required to register for RELG 699 Dissertation Research. To fulfill the requirement for this course, students will select one of the options for dissertations as outlined by LLU.

The dissertation is scheduled after successfully defending the proposal.

Normal time to complete the program

4 years (16 quarters) based on less than full-time enrollment

Religion and Society — M.A.

Drawing upon the entire faculty of the School of Religion, plus professors in other LLU schools and nearby universities on a case-by-case basis, this degree integrates with different specialties the serious study of religion, one of the most powerful forces for both good and evil today. Taking courses and seminars in religion, as well as other disciplines, each student develops, with the assistance of a mentor, an individualized program that meets his or her own distinctive interests and goals. This program is not designed to prepare persons to become ordained Christian ministers; rather, in other people it enriches knowledge about religion and enhances skills in dealing with it.

Mentors

As soon as possible, but in every case before the student has completed half of the program, the program's administrative committee will link the

student to a mentor who will provide support and guidance. Until then, the program director will mentor the student.

Learning outcomes

Upon the successful completion of this program, each student will be able to:

1. Analyze the prominent features of the most influential religions in the world today.
2. Assess how effective Christianity was in its interactions with society in one of its major historical periods.
3. Describe the ways human beings have organized their societies over the centuries.
4. Evaluate the effectiveness of one past or present major human society in meeting human needs and protecting its environment.
5. Appraise the variety of ways religions and societies typically interact.
6. Critique interpretations of how religion and society interacted in one major episode that made a lasting difference.

Periodic review

In addition, each student's achievements will be assessed every twelve units to reassess the advisability of his or her continuing in the program.

Prerequisites

There are no prerequisites for this program; however, those who enter having taken few or no courses in religion will have to structure their program with this in mind. The opposite will be true for those who enter the program after having extensively studied religion but not the other subject(s) they desire to explore.

Core courses

Four of this program's twelve courses are required: RELT 501, 502, 503; and RELG 696. The religion in science cluster—RELT 501 Religion and Society, RELT 502 Religion and Society, and RELT 503 Religion and Society—which may be taken in any sequence, provides intensive introductions to the field as a whole. One course is offered each quarter during the academic school year, and a course may be offered in the summer as well. The fourth required course is the Final Project (RELG 696 Project). These four 4-unit courses, totaling 16 units, constitute one-third of the program. The remaining eight courses, totaling 32 units and two-thirds of the program, are selected by the student and approved by the administrative committee.

Transfer credits

Students are permitted to transfer up to 8 units of approved graduate-level courses from other accredited institutions into the Religion and Society Program.

Admissions

In addition to Loma Linda University (p. 24) and School of Religion (p. 466) admissions requirements, the applicants to the M.A. in Religion and Society Program are expected to present/complete:

1. A bachelors degree from an accredited institution.
2. An overall undergraduate Grade Point Average (G.P.A.) of at least 3.25.
3. Acceptable scores in an approved standardized test such as the Graduate Record Exam (GRE), Medical School Admissions Test (MCAT) or Law School Admissions Test (LSAT).
4. A brief essay (1,000 words) that specifies how this degree would benefit the applicant personally and professionally.
5. An interview.
6. Two Letters of Recommendation from previous teachers.

In addition to these considerations, acceptance into this program depends upon whether, at the time the student wishes to study, the School of Religion's resources and his or her interests and goals overlap enough to make it a mutually beneficial experience

Provisional Admission

A student who seems promising even though he or she does not meet one or more of the admission requirements might be given a Provisional Acceptance for up to 12 units after which the administrative committee will determine whether or not he or she will be permitted to continue.

Program requirements

In order to receive the Master of Arts in Religion and Society, 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, and no course lower than a B in a core course.

Required		
RELT 501	Religion and Society	4
RELT 502	Religion and Society	4
RELT 503	Religion and Society	4
RELG 696	Project	4
Individual area of emphasis		
Minimum of 32 units that focus on a single topic, case, theme, era, or text:		
Selected from the School of Religion		16
Selected from the School of Religion or another school on campus		16
Total Units		**48**

Areas of Emphasis

These are approved clusters of courses that focus on a single topic, case, theme, era, problem, debate or text. At least 16 of these units must be taken from the School of Religion. The other 16 units may be taken either at the School of Religion or elsewhere on campus.

Illustrative Areas of Emphasis

These are representative of the kinds of individualized programs that students and their mentors may formulate.

- Public Policy
- Health
- Ecology
- Behavioral Sciences
- Natural Sciences
- Nursing
- Scripture
- Theology

Inquires about other possibilities are encouraged.

Individualized program proposal

Before completing half of the program (24 units), with the mentor, the student will submit for approval to the administrative committee an Individualized Program. This will detail courses and other experience that will fulfill the degree's requirements as well as establish the acceptable area of emphasis and make original contribution.

Noncourse requirements

Student portfolio

This non-course requirement assesses the student's progress and contains all the items from the entire program which the student submitted and received back after being

Integration papers

At the conclusion of each course, students write a brief (3 – 5 pages) Integration Paper that will summarize and appraise how it interacted with at least two of the University Student Learning Outcomes and at least two of the Program Learning Outcomes. At the conclusion of their studies, students write a longer (10 – 15 pages) Integration Paper that does the same thing for the program as a whole. The integration papers will be part of the student portfolio.

Comprehensive examination

Successful performance on this test establishes that the student is qualified to complete their Final Project. It is passed to the administrative committee's satisfaction before the Final Project is approved.

Final project

Within the contours of what is appropriate for Master of Arts degrees, the final project is to make an original contribution. It can be a major paper reporting on significant literary, historical, social science, laboratory or field research; however, it can also be a video, program proposal, pilot project or work of art and drama. The project's acceptability is determined by the administrative committee.

Normal time to complete the program

1.66 years (6 academic quarters) based on full-time enrollment; part time permitted.

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 e-mail at <graduatestudies@llu.edu> or by calling toll free 1/800/422–4LLU.

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; promote and encourage independent judgment, mastery of research techniques, and contribution to scholarly communication; and relate 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. International 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> 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.

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 — M.S. (p. 317)
- Biochemistry — M.S. (p. 284)
- Biology — M.S. (p. 299)
- Bioethics — M.A. (p. 468)
- Clinical Ministry — M.A. (p. 471)
- Endodontics — M.S. (p. 262)
- Family Studies — M.A. (p. 170)
- Geology — M.S. (p. 311)
- Implant Dentistry — M.S. (p. 264)
- Microbiology and Molecular Genetics — M.S. (p. 287)
- Nutrition — M.S. (p. 448)
- Oral and Maxillofacial Surgery — M.S. (p. 266)
- Orthodontics and Dentofacial Orthopedics — M.S. (p. 267)
- Pediatric Dentistry — M.S. (p. 269)
- Periodontics — M.S. (p. 270)
- Pharmacology — M.S. (p. 289)
- Physiology — M.S. (p. 292)
- Prosthodontics — M.S. (p. 271)
- Religion and Society — M.A. (p. 476)

Doctoral degrees

- Anatomy — Ph.D. (p. 317)
- Biochemistry — Ph.D. (p. 284)
- Biology — Ph.D. (p. 299)
- Earth Science — Ph.D. (p. 303)
- Epidemiology — Ph.D. (p. 454)
- Family Studies — Ph.D. (p. 170)
- Marital and Family Therapy — Ph.D. (p. 184)
- Microbiology and Molecular Genetics — Ph.D. (p. 286)
- Medical Scientist Training Program — M.D./Ph.D. (p. 325)
- Nursing — Ph.D. (p. 396)
- Pharmacology — Ph.D. (p. 289)
- Physical Therapy — D.Sc. (p. 126)
- Physiology — Ph.D. (p. 292)
- Psychology (clinical psychology) — Ph.D. (p. 194)
- Rehabilitation Science — Ph.D. (p. 63)
- Religion and Health — D.Sc. (p. 474)
- Social Policy and Social Research — Ph.D. (p. 207)

Combined degrees programs

- Biology or Geology *with* Medicine or Dentistry (M.S./M.D (p. 486)., M.S./D.D.S. (p. 484))
- Psychology *with* Bioethics (Ph.D./M.A., Psy.D./M.A (p. 482).)
- Social Policy and Social Research *with* Biomedical and Bioethics (Ph.D./M.A. (p. 492))
- Social Work *with* Social Policy and Social Research (M.S.W./Ph.D. (p. 493))

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.

Programs

In the alphabetical list that follows, for convenience in locating a combined degrees program, some programs are listed twice—the second time with the program names reversed—e.g., Criminal Justice with Social Work and Social Work with Criminal Justice. Combined degrees programs that must be entered in a specified order are listed only once. For example, a master's degree student in bioethics cannot choose to add pharmacy (Pharm.D.), but a pharmacy student can choose to add the M.S. degree in bioethics. Such programs list the primary degree program first.

Bioethics—SR *with* Psychology—BH M.A./Psy.D. or M.A./Ph.D. (p. 482)

Clinical Ministry—SR *with* Marital and Family Therapy—BH M.A./M.S. (p. 483)

Criminal Justice—BH *with* Social Work—BH M.S./M.S.W. (p. 493)

Dentistry—SD (Autumn Quarter) *with* Anatomy—SM D.D.S./Ph.D., D.D.S./M.S. (p. 484)

Dentistry—SD *with* Bioethics—SR D.D.S./M.A (p. 485)

Dentistry—SD *with* Biology or Geology—SM D.D.S./M.S. (p. 484)

Dentistry—SD *with* Biomedical Sciences—SM D.D.S./M.S (p. 485) or D.D.S./Ph.D (p. 484).

Marital and Family Therapy—BH *with* Clinical Ministry—SR M.A./M.S. (p. 483)

Medical Scientist—SM M.D./Ph.D. (p. 487)

Medicine—SM *with* Bioethics—SR M.D./M.A (p. 486)

Medicine—SM *with* Biology or Geology—SM M.D./M.S. (p. 486)

Medicine—SM *with* Master of Science—SM or Doctor of Philosophy—SM M.D./M.S. or M.D./Ph.D. (p. 486)

Nursing—SN *with* Bioethics—SR Ph.D./M.A. (p. 487)

Oral and Maxillofacial Surgery—SD *with* Medicine—SM Post-D.D.S. specialty certificate/M.D. (p. 488)

Pharmacy—SP *with* Bioethics—SR Pharm.D./M.A. (p. 489)

Pharmacy—SP *with* Health Informatics—AH Pharm.D./M.S. (p. 490)

Psychology—BH with Bioethics—SR Psy.D/M.A.. or Ph.D./M.A. (p. 482)

Social Policy and Social Research—BH *with* Bioethics—SR Ph.D./M.A. (p. 492)

Social Policy and Social Research—BH *with* Social Work—BH M.S.W./Ph.D. (p. 493)

Social Work—BH *with* Criminal Justice—BH M.S.W./M.S. (p. 493)

Social Work—BH *with* Social Policy and Social Research—BH M.S.W./Ph.D. (p. 493)

Bioethics—M.A. with Psychology — Psy.D. or Ph.D.

Program director, Bioethics

James W. Walters

Interim chair, Department of Psychology

David Vermeersch

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 Behavioral Health.

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 Behavioral Health). The purpose of the combined degrees program is to facilitate more efficient completion of graduate programs in ethics and psychology for the student interested 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 degrees in psychology. Admission information is available from the School of Behavioral Health.

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

Core requirements		
RELE 524	Bioethics and Society	4
RELE 548	Christian Social Ethics	4
RELE 554	Clinical Ethics Practicum I	4
RELE 555	Clinical Ethics Practicum II	4
RELE 577	Theological Ethics	4
RELE 588	Explorers of the Moral Life	4
RELG 504	Research Methods in Religious Studies	3
RELR 584	Culture, Psychology, and Religion	3
RELR 585	Psychology of Religion	3
PSYC 505	Research Methods in Psychological Science	4
Selectives		
In addition to the preceding 37 units, students completing the M.A. degree program will choose 11 units of the following:		11
PSYC 524	History, Systems, and Philosophy of Psychology	
PSYC 526	Ethics and Legal Issues in Clinical Psychology	
PSYC 536	Seminar in Psychology and Religion	
PSYC 551	Psychobiological Foundations	
PSYC 564	Foundations of Social and Cultural Psychology	
PSYC 566	Cultural Psychology	
PSYC 567	Human Diversity	
PSYC 575	Foundations of Human Development	
Total Units		**48**

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 Behavioral Health, 2 units of minor concentration, which will be fulfilled by 12 of the selective units listed above. (See Psychology Program for full information.)

Clinical Ministry — M.A. with Marital and Family Therapy — M.S.

Program director, Clinical Ministry

Siroj Sorajjakool

Program director, Marital and Family Therapy

Mary E. Moline

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 Behavioral Health.

The program

The combined Master of Arts degree in clinical ministry and the 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 126 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	3
Autumn Quarter		
MFAM 515	Crisis Intervention and Client-Centered Advocacy	3
MFAM 551	Family Therapy: Foundational Theories and Practice	3
MFAM 556	Psychopathology and Diagnostic Procedures	3
MFAM 614	Law and Ethics	3
MFAM 547	Social Ecology of Individual and Family Development	3
Winter Quarter		
MFAM 528	Culture, Socioeconomic Status in Therapy	3
MFAM 536	Case Presentation Seminar and Documentation	3
MFAM 553	Family Systems Theory	3
MFAM 644	Child Abuse and Family Violence	3
MFAM 731[1]	Clinical Training	6
Spring Quarter		
MFAM 501	Research Tools and Methodology: Quantitative	3
MFAM 537	Case Presentation Seminar	3
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3
MFAM 584	Advanced Child and Adolescent Problems	3
Second Year		
Summer Quarter		
MFAM 568	Groups: Process, and Practice	3
MFAM ___	Modality elective	2
MFAM 732[1]	Clinical Training	9
Autumn Quarter		
MFAM 502	Research Tools and Methodology: Qualitative	3
MFAM 552	Couples Therapy: Theory and Practice	3
MFAM 567	Treating the Severely and Persistently Mentally Ill and The Recovery Process	3
RELR 567	Pastoral Counseling	3
Winter Quarter		
MFAM 524	Psychopharmacology and Medical Issues	3
MFAM 624	Individual and Systems Assessment	3
RELR 568	Care of the Dying and Bereaved	3
RELR 584	Culture, Psychology, and Religion	3
Spring Quarter		
COUN 675	Dynamics of Aging	1
MFAM 604	Social Context in Clinical Practice: Gender, Class and Race	3
MFAM 674	Human Sexual Behavior	3
RELT 559 or RELR 587	New Testament Thought	3
Third Year		
Summer Quarter		
RELE 524	Bioethics and Society	3
RELT 558	Old Testament Thought	3
Autumn Quarter		
MFAM 635	Case Presentation Seminar and Legal Issues	3
RELR 565	Pastoral Theology and Methodology	3
RELR 564	Religion, Marriage, and the Family	3
Winter Quarter		
MFAM 636	Case Presentation Seminar and Client-Centered Advocacy	3
MFAM 638	Family Therapy and Chemical Abuse	3
RELR 574	Liturgy, Homiletics, and Healing	3
Spring Quarter		
MFAM 637	Case Presentation Seminar and Global Practices	3
RELT 557	Theology of Human Suffering	3
	Total Units:	**126**

[1] Clinical training is a nonacademic activity and requires a fee

Dentisry — D.D.S. with Biomedical Sciences — Ph.D.

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.

Dentistry — D.D.S. with Anatomy — M.S., Ph.D.

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 (p. 216).

Dentistry — D.D.S. with Biology or Geology — M.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 are met as part of the professional curriculum.

Dentistry — D.D.S. with Biomedical Sciences — 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.

Dentistry — D.D.S. with Bioethics — M.A.

Program director, Bioethics, School of Religion

James W. Walters

Program coordinators, School of Dentistry

Robert Handysides
Graham Stacey

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.

Admissions

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 and dean of students recommend students, triggering a streamlined admissions process to the M.A. degree in bioethics curriculum. DAT scores are accepted in lieu of the GRE for dental students.

The program

The combined degrees Bioethics *with* Dentistry Program is designed to fit the schedule of D.D.S. degree students. Ethics in dentistry is well-established at Loma Linda University. Loma Linda University's School of Dentistry is one of a select few dental schools in the nation known for expertise in ethical issues.

An M.A. degree in bioethics taken as a stand-alone degree requires 48 units. However, the M.A./D.D.S. combined degrees reduce the total units required by 12 units in the following manner:

1. 8 units from four courses in the dental curriculum are counted for credit toward the M.A. degree in bioethics: a) RELR 717 Diversity and the Christian Health Professional, b) DNES 794 Public Health Dentistry, c) RELR 715 Christian Dentist in Community, and d) DNES 851 The Dentist and the Law of these 2-unit courses for M.A. degree credit requires an integrative, supplemental eight-page paper that relates the courses' content to bioethics. These four courses have sufficiently similar content to bioethics that they warrant being applied to both the D.D.S. and the M.A. degree in bioethics, once the supplemental papers are approved. These short papers integrate professional course work with bioethics content.
2. 4 units come from 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 the deletion of a 2-unit religion selective in the dental curriculum, which will now be taken in the bioethics selectives.

M.A. degree requirements

The following courses from the D.D.S. curriculum will be double counted for the M.A. degree in bioethics once the supplemental papers, noted above, are approved.

DNES 794	Public Health Dentistry	2
DNES 851	The Dentist and the Law	2
RELR 715	Christian Dentist in Community	2
RELR 717	Diversity and the Christian Health Professional	2
Total Units		**8**

A model curriculum of bioethics course work taken throughout the four years of the dentistry program

First Year

Winter Quarter

RELE 588	Explorers of the Moral Life	4

Second Year

Spring Quarter

RELE 566	Heroes of Health Care	4

Third Year

Summer Quarter

RELE 524	Bioethics and Society	4

Autumn Quarter

RELE 564	Ethics and Health Disparities	4

Winter Quarter

RELE 554	Clinical Ethics Practicum I	4

Spring Quarter

RELE 567	World Religions and Bioethics	4

Fourth Year

Summer Quarter

RELE 568	Bioethics and the Law	4
RELE 589	Biblical Ethics	4

Winter Quarter

RELE 598	Master's Seminar I	2

Spring Quarter

RELE 599	Master's Seminar II	2
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	4
	Total Units:	**40**

Medicine — M.D. with Bioethics — M.A.

Program director, Bioethics, School of Religion

James W. Walters

Program coordinator, School of Medicine

Henry H. Lamberton

Faculty

The faculty for the combined degrees Bioethics *with* Medicine Program is drawn from Loma Linda University's School of Religion and School of Medicine.

Admissions

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 bioethics minus the GRE because the MCAT includes a critical thinking component.

The program

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 reduce the total units required by sharing 18 units between the two programs in the following manner.

1. 12 units from three courses in the medical curriculum count as credit toward the M.A. degree in bioethics: a) MDCJ 538 Medical Neuroscience , b) PSYT 526 Psychopathology, and c) PRVM 517 Clinical Preventive Medicine. Acceptance of these courses for M.A. degree credit requires an integrative, supplemental eight-page paper that relates the courses' content to bioethics. The rationale: These three courses in medicine have sufficiently relevant content to bioethics that they academically warrant being applied to the M.A. degree in bioethics requirements.
2. 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 Autumn 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 Autumn Quarter grades are posted.)

M.A. degree requirements

The following courses from the M.D. curriculum will be double counted for the M.A. degree in bioethics once the supplemental papers, noted above, are approved.

MDCJ 538	Medical Neuroscience	3.5
PRVM 517	Clinical Preventive Medicine	4
PSYT 526	Psychopathology	4.5
RELE 704	Medicine and Ethics	2
RELE 714	Advanced Medical Ethics	2
Total Units		**16**

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

Second Year

Summer Quarter

RELE 524	Bioethics and Society	4
RELE 568	Bioethics and the Law	4

Autumn Quarter

RELE 589	Biblical Ethics	4

Winter Quarter

RELE 554	Clinical Ethics Practicum I	4

Fourth Year

Winter Quarter

RELE 598	Master's Seminar I	2

Spring Quarter

RELE 566	Heroes of Health Care	4
RELE 555	Clinical Ethics Practicum II	4
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	4
RELE 599	Master's Seminar II	2
	Total Units:	**36**

Medicine — M.D. with Biology or Geology — M.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 are met as part of the professional curriculum

Medicine — M.D. with Master of Science (M.S.) or Doctor of Philosophy (Ph.D.)

The M.D./M.S. and M.D./Ph.D. Combined-Degrees Programs include 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 quality 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—for the Doctor of Medicine degree. Majors are offered in anatomy, biochemistry, microbiology and molecular genetics, physiology, or pharmacology.

For the M.D./Ph.D. and M.D./M.S. Combined-Degrees Programs, the prerequisites and Graduate Record Examination requirements are similar to those described for the Medical Scientist Program. Biochemistry is not required.

Medicine — M.D. with Medical Scientist — 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, 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 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.

For information regarding tuition waivers and scholarships, contact the director of the Medical Scientist Program.

Nursing — Ph.D. with Bioethics — M.A.

Program director, Bioethics, School of Religion

James W. Walters

Program coordinator, School of Nursing

Elizabeth Bossert

Faculty

The faculty for the combined degrees Bioethics *with* Nursing Prorgam is primarily drawn from Loma Linda University's School of Religion and School of Nursing.

Admissions

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 in bioethics curriculum.

The program

The M.A./Ph.D. combined degrees Bioethics *with* Nursing Program 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 in bioethics curriculum and the Ph.D. degree curriculum in the Nursing Program.

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 reduce the total units required by 23 units in the following manner:

1. 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. 4 units come from the selected analytic topic course (e.g., NRSG 687 Applied Psychometrics for Health Care) in the nursing curriculum and counts toward the M.A. degree in bioethics.
3. 4 units come from a course in the nursing curriculum that is counted for M.A. degree in bioethics credit: NRSG 665 Philosophical Foundations of Nursing Science (4 units). This course has sufficiently similar content to M.A. degree in bioethics courses that it warrants being applied to both the Ph.D.degree curriculum in the Nursing Program and the M.A. degree in the Bioethics Program.

4. 3-unit RELE ___ elective course required in the nursing curriculum may be chosen from any one of the M.A. degree in bioethics courses to double count.

A model curriculum of bioethics course work taken throughout the five years of nursing school

M.A. curriculum

First Year		
Summer Quarter		**Units**
RELE 524[1]	Bioethics and Society	4
Autumn Quarter		
RELE 589	Biblical Ethics	4
Winter Quarter		
RELE 588[2]	Explorers of the Moral Life	4
Second Year		
Autumn Quarter		
RELE 564	Ethics and Health Disparities	4
Spring Quarter		
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	4
RELE 567	World Religions and Bioethics	4
Third Year		
Summer Quarter		
RELE 568	Bioethics and the Law	4
Winter Quarter		
RELE 554	Clinical Ethics Practicum I	4
Spring Quarter		
RELE 555	Clinical Ethics Practicum II	4
Fourth and Fifth Years		
Winter Quarter		
RELE 566	Heroes of Health Care	4
RELE 598	Master's Seminar I	2
Spring Quarter		
RELE 599	Master's Seminar II	2
	Total Units:	**44**

1 May be taken Summer or Autumn Quarter

2 May be taken Winter or Spring Quarter

Ph.D. curriculum

First Year		
Summer Quarter		**Units**
NRSG 665[2]	Philosophical Foundations of Nursing Science	4
NRSG 636	Methods of Disciplined Inquiry	2
NRSG 664	Nursing Science Seminar	1
STAT 531	Parametric and Nonparametric Bivariate Statistics	4
Autumn Quarter		
NRSG 637 (1 unit total)[1]	LLU Scholars Seminar	1
NRSG 696[1]	Mentored Research	4
Second Year		
Summer Quarter		
NRSG 575	Strategies for Theory Development in Nursing	4
NRSG 686	Advanced Quantitative Research Methods	4
STAT 532	Applied Bivariate Statistical Analysis	4
Autumn Quarter		
NRSG 637 (1 unit total)[1]	LLU Scholars Seminar	1
Third Year		
Summer Quarter		
NRSG 660	Advanced Qualitative Research Methods	4
NRSG 664	Nursing Science Seminar	1
STAT 533	Applied Multivariable Statistical Analysis	4
RELR_ Relational elective		3
Autumn Quarter		
NRSG 637 (1 unit total)[1]	LLU Scholars Seminar	1
Fourth Year		
Summer Quarter		
NRSG 664	Nursing Science Seminar	1
NRSG 687[2, 3]	Applied Psychometrics for Health Care	4
NRSG 637 (1 unit total)[1]	LLU Scholars Seminar	1
NRSG 697[1]	Research	20
RELE _ Ethics elective[2]		3
RELT_ Theological elective		3
Focus courses (Foundational to dissertation)[2]		12
General elective[2]		4
	Total Units:	**90**

1 Autumn, Winter, Spring Quarter

2 Units double counted with M.A. in Bioethics

3 or another analytic topic relevant to dissertation data analysis

Oral and Maxillofacial Surgery — Certificate with Medicine — 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 Dental Accreditation (CODA) 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.

First Year, Summer Quarter		
OMFS 607	Principles of Medical History, Physical Examination, and Clinical Medicine	2
OMFS 618	Introduction to General Anesthesia	1
RELE 5__	Graduate-level Ethics	3
First Year - Medicine Second-year Courses		
MDCJ 529	Physical Diagnosis	8
MDCJ 530	Pathophysiology and Applied Physical Diagnosis	11
PATH 517	Human Systemic Pathology	9.5
PHRM 515	Medical Pharmacology	6
PSYT 525	Fundamentals of Behavioral Science	3
PSYT 526	Psychopathology	4.5
REL 7__	Professional-level Religion Elective	2
Second Year - Medicine Third-Year Courses		
FMDN 701	Family Medicine Clerkship (4 weeks)	6
GYOB 701	Gynecology and Obstetrics Clerkship (6 weeks)	9
MEDN 701	Medicine Clerkship (10 weeks)	15
NEUR 701	Neurology Clerkship (4 weeks)	6
PEDS 701	Pediatrics Clerkship (8 weeks)	12
PSYT 701	Psychiatry Clerkship (6 weeks)	9
RELE 714	Advanced Medical Ethics	2
SURG 701	Surgery Clerkship (10 weeks)	15
Third Year - Medicine Fourth-year Clinical Clerkships		
July through December		
EMDN 821	Emergency Medicine Clerkship (2 weeks)	3
MDCJ 891	Whole-Person Care (4 weeks)	6
SURG 821	Surgery Subinternship (ENT (4 weeks))	6
SURG 822	Surgery Intensive Care (4 weeks)	6
Third Year		
January through June		
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	2
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities	2
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	1
OMFS 609	Literature Review in Oral and Maxillofacial Surgery	1
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice [1]	14
OMFS 615	Current Trends in Medicine and Surgery [1]	2
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery	2
Fourth Year		
Students do not enroll through LLU during this year		
One-Year General Surgery Internship		
Fifth Year		
GRDN 601	Practice Management	2
GRDN 632	Basic Microsurgery Techniques	2
IMPD 547	Implant Dentistry Grand Rounds	4
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	4
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities	4
OMFS 606	Applied Surgical Anatomy	1
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	2
OMFS 609	Literature Review in Oral and Maxillofacial Surgery	2
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice	28
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery	4
Sixth Year		
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	4
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities	4
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	2
OMFS 609	Literature Review in Oral and Maxillofacial Surgery	2
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice	28
OMFS 615	Current Trends in Medicine and Surgery	2
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery	4
OMFS 696	Scholarly Activity in Oral and Maxillofacial Surgery	1
Total Units		**274**

[1] Also fulfills requirements for MD fourth-year clinical electives.

Pharmacy — Pharm.D. with Bioethics — M.A.

Program director, Bioethics, School of Religion

James W. Walters

Program director, School of Pharmacy

Rashid Mosavin

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.

Admissions

Students are 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, triggering a streamlined admissions process of the M.A. degree in bioethics. HSRT scores are accepted in lieu of the GRE for pharmacy students.

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 a Pharm.D./M.A. combined degrees program.

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 double count 25 units of the needed 48 units as follows:

1. 8 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. Acceptance of these courses for M.A. degree credit requires an integrative, supplemental eight-page paper that relates the courses' content to bioethics.
2. 8 units come from the substitution of three School of Religion courses in the Pharm.D. curriculum with courses in the Bioethics Program because their content is duplicated.
3. 9 units of additional credit come from three electives in bioethics taken by Pharm.D. students.

M.A. degree requirements

School of Pharmacy courses that apply to the M.A. degree in bioethics

RXSA 545	Public Health and Lifestyles	3
RXSA 547	Pharmacy Law	2
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3
Total Units		**8**

A model curriculum of bioethics course work taken throughout the four years of the pharmacy curriculum

First Year

Spring Quarter

RELE 567	World Religions and Bioethics	4
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	4

Second Year

Summer Quarter

RELE 524	Bioethics and Society	4

Autumn Quarter

RELE 542	Bioethics Integration I	1

Winter Quarter

RELE 543	Bioethics Integration II	1
RELE 588	Explorers of the Moral Life	4

Spring Quarter

RELE 555	Clinical Ethics Practicum II	4

Third Year

Summer Quarter

RELE 568	Bioethics and the Law	4
RELE 589	Biblical Ethics	4

Autumn Quarter

RELE 544	Bioethics Integration III	1

Winter Quarter

RELE 598	Master's Seminar I	2

Spring Quarter

RELE 566	Heroes of Health Care	4
RELE 599	Master's Seminar II	2
	Total Units:	**39**

Pharmacy — Pharm.D. with Health Informatics — M.S.

The School of Pharmacy will interview pharmacy students who express interest in the M.S. degree in Health Informatics Program. An online admission application for the program is required to facilitate enrollment, but the School of Pharmacy grants formal approval.

The deadline for submitting the application is June 1 of each year; decisions will be made by July 1 of each year. Selection will be based on the following criteria:

- For pharmacy students starting in the second year—
  - Minimum G.P.A. of 3.5 or ranked in the top 10% of the class
- For pharmacy students starting in the first year—
  - Minimum G.P.A. of 3.5 or ranked in the top 10% of the class
  - Evidence of past course work in informatics

First Year

Autumn Quarter		**Units**
RELT 706	Adventist Beliefs and Life	2
RXPC 561	Pharmaceutical Care I	4
RXPS 511	Pharmaceutics I	2
RXPS 524	Physiology I	4
RXPS 581	Biochemistry I	3
RXRX 501	School of Pharmacy Forum	0
RXRX 507	Professional Development	0
RXSA 545	Public Health and Lifestyles	3
Winter Quarter		
RXEE 562	Pharmacist Guided Self-Care 1	3
RXEE 591	Introduction to Community Pharmacy Practice I	2
RXPS 512	Pharmaceutics II	4
RXPS 515	Pharmaceutics Laboratory I	0.5
RXPS 525	Physiology II	3
RXPS 582	Biochemistry II	3
RXRX 501	School of Pharmacy Forum	0
RXRX 507	Professional Development	0
RXSA 547	Pharmacy Law	2
Spring Quarter		
RELE 705	Ethics in Pharmacy Practice	3
RELT 740	World Religions and Human Health	3
RXEE 563	Pharmacist Guided Self-Care 2	3
RXEE 592	Introduction to Community Pharmacy Practice II	2
RXPS 513	Pharmaceutics III	3
RXPS 516	Pharmaceutics Laboratory II	0.5
RXRX 501	School of Pharmacy Forum	0

RXRX 507	Professional Development	0
RXTH 670	IPDM I: Principles of Pharmacology	2
Second Year		
Autumn Quarter		
HLIF 510	Health-Care Information Systems	4
HLIF 515	The U.S. Health-Care System	3
RXEE 690[1]	Introduction to Hospital Pharmacy Practice	2
RXPS 610	Pharmacokinetics	4
RXPS 651	Principles of Medicinal Chemistry I	3
RXRX 601	School of Pharmacy Forum	0
RXRX 604	Professional Development	0
RXSA 640	Epidemiology and Biostatistics	3
RXSA 646	Principles of Management	3
RXTH 671	IPDM II: Fluids and Electrolytes	3
Winter Quarter		
HLIF 520	Data Management: Modeling and Development	3
HLIF 525	Management of Data and Information	3
RXDI 664	Drug Information and Literature Evaluation	3
RXPS 652	Principles of Medicinal Chemistry II	4
RXRX 601	School of Pharmacy Forum	0
RXRX 604	Professional Development	0
RXTH 683	IPDM IV: Endocrine	3.5
RXTH 684	IPDM III: Cardiovascular I	3.5
Spring Quarter		
AHCJ 555	Writing for Health-Care Professionals	3
RELT 563	Health Care, Humanity, and God	3
RELR 709	Christian Perspectives on Death and Dying	2
RXPS 653	Principles of Medicinal Chemistry III	3
RXRX 601	School of Pharmacy Forum	0
RXRX 604	Professional Development	0
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3
RXTH 674	IPDM VI: Renal and Respiratory Diseases	3.5
RXTH 685	IPDM V: Cardiovascular II	3.5
Summer Quarter		
HLIF 540	Leadership Perspectives and Practice	3
HLIF 545	System Design, Implementation and Management	3
Third Year		
Autumn Quarter		
HLIF 530	Data Analytics and Decision Support	3
HLIF 532	Financial Management in Health Care	2
HLIF 555	Health-care Vendor and Project Management	2
RELE 706	Advanced Ethics in Pharmacy Practice	2
RXPC 761	Pharmaceutical Care Laboratory I	2
RXRX 701	School of Pharmacy Forum	0
RXRX 704	Professional Development	0
RXTH 770	IPDM VII: Infectious Diseases I	3.5
RXTH 773	IPDM VIII: Psychiatry	3.5
RXEE 790[2]	Introduction to Clinical Pharmacy Practice	2
Winter Quarter		
HLIF 560	Policy Development for Privacy and Security in Health Care Systems	3
HLIF 565	Technical Structures in Health Informatics	3
RXPC 760	Clinical Pharmacokinetics	2
RXPC 762	Pharmaceutical Care Laboratory II	2
RXRX 701	School of Pharmacy Forum	0
RXRX 704	Professional Development	0
RXTH 771	IPDM X: Neurology	3.5
Spring Quarter		
HLIF 570	Professional Portfolio	2
HLIF 575	Capstone II: Project and Special Topics in Health Informatics	2
HLIF 580	Health-Care Policy	2
RXPC 763	Pharmaceutical Care Laboratory III	2
RXRX 701	School of Pharmacy Forum	0
RXRX 704	Professional Development	0
RXSA 743	Health Systems, Reimbursement, and Pharmacoeconomics	3
RXTH 774	IPDM XII: Miscellaneous Conditions and GI Disorders	2.5
RXTH 775	IPDM XI: Oncology/Transplant	3.5
Fourth Year		
Autumn Quarter		
RXEE 821	Advanced Pharmacy Practice Experience I	6
RXEE 822	Advanced Pharmacy Practice Experience II	6
Winter Quarter		
RXEE 823	Advanced Pharmacy Practice Experience III	6
RXEE 824	Advanced Pharmacy Practice Experience IV	6
Spring Quarter		
RXEE 825	Advanced Pharmacy Practice Experience V	6
RXEE 826	Advanced Pharmacy Practice Experience VI	6
	Total Units:	**210.5**

1 To be taken either Autumn, Winter, or Spring quarter of the second year

2 To be taken either Autumn, Winter, or Spring quarter of the third year

3 To be completed by the end of the third year (no more than 4 units of independent study can be applied to this requirement). Choose from the electives listed below. Elective courses are subject to change.

Electives

RXPS 710	Dietary Supplements	3
RXPS 718	Clinical Toxicology	3
RXPS 782	Special Topics in Pharmaceutical Sciences	1-4
RXPS 783	Special Topics in Pharmaceutical Sciences	1-4
RXPS 784	Special Topics in Pharmaceutical Sciences	1-4
RXRX 506	Introduction to Pharmacy Leadership	1
RXRX 798	Independent Study with Faculty	1-4
RXSA 750	Wall Street Journal	1
RXSA 757	Clinical Research and Methodology (CRM)	2
RXTH 757	Advanced Cardiovascular Life Support	3
RXTH 782	Special Topics in Pharmacy Practice	1-4
RXTH 783	Special Topics in Pharmacy Practice	1-4
RXTH 784	Special Topics in Pharmacy Practice	1-4
RXTH 788	Advanced Clinical Pharmacy	2

Normal time to complete the program

4 years (13 academic quarters) — full-time enrollment required

Social Policy and Social Research — Ph.D. with Bioethics — M.A.

Program director, Bioethics

James W. Walter

Program director, Social Policy and Social Research, Department of Social Work and Social Ecology

Larry Ortiz

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 Behavioral Health.

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.

Admissions

To enter the proposed program, students must gain separate acceptance to both graduate programs. The Social Policy and Social Research Program director recommends students. These recommendations trigger a streamlined admissions process for the M.A. degree in bioethics.

Course work requirements

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 double count 20 of the needed 48 units as follows:

1. 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 SPOL 613 Social Science Concepts I, SPOL 614 Social Science Concepts II, SPOL 615 Economic Theory and Social Policy, and SPOL 655 Research Methods II. These four courses have sufficiently similar content to bioethics that they warrant being applied to both the bioethics M.A. degree curriculum and the Ph.D. degree in social policy curriculum.
2. 4 units come from one bioethics course in the social policy curriculum that is already required: RELE 588 Explorers of the Moral Life

To the extent possible, research projects in both programs focus on the interface of ethics and social policy.

Ethics core		
RELE 524	Bioethics and Society	4
RELE 565	The Good, the Bad and the Ugly: Moral Aspects of Art and Illness	4
RELE 566	Heroes of Health Care	4
RELE 567	World Religions and Bioethics	4
RELE 568	Bioethics and the Law	4
RELE 589	Biblical Ethics	4
RELE 598	Master's Seminar I	2
RELE 599	Master's Seminar II	2
Social science theory and policy		
SPOL 600	Colloquium	0
SPOL 613	Social Science Concepts I [1]	4
SPOL 614	Social Science Concepts II [1]	4
SPOL 615	Economic Theory and Social Policy [1]	4
SPOL 656	Organizational Theory and Policy	4
SPOL 658	Methods of Policy Analysis and Research	4
Religion		
RELE 588	Explorers of the Moral Life [1]	4
RELR 525	Health Care and the Dynamics of Christian Leadership	3
RELT 557	Theology of Human Suffering	4
Research methods, statistics, and information technology		
SPOL 654	Research Methods I	4
SPOL 655	Research Methods II [1]	4
SPOL 665	Information Technologies and Decision Science	4
Select one of the following sequences:		12
Sequence 1:		
PSYC 501	Advanced Statistics I	
PSYC 502	Advanced Statistics II	
PSYC 503	Advanced Multivariate Statistics	
Sequence 2:		
MFTH 601	Statistics I	
MFTH 604	Advanced Qualitative Methods	
MFTH 605	Advanced Quantitative Methods	
STAT___	Statistics (advaned course in statistics or methods)	4
Applied/structured research and specialized electives		22
Applied/Structured research (6-10 units)		
SPOL 671	Applied/Structured Research I	
SPOL 672	Applied/Structured Research II	
SPOL 673	Applied/Structured Research III	
Electives (10-16 units)		
Dissertation research		
SPOL 681	Dissertation Proposal I	2
SPOL 682	Dissertation Proposal II	2
SPOL 683	Dissertation Proposal III	2
SPOL 697	Research	18
Total Units		**133**

[1] Courses apply to both the M.A. and Ph.D. programs

Social Policy and Social Research — Ph.D. with Social Work — M.S.W.

Program coordinators

Beverly J. Buckles
Kimberly Freeman

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.

Social Work — M.S.W. with Criminal Justice — M.S.

Students interested in completing a combined degrees curriculum with the Social Work and Criminal Justice programs should contact the Department of Social Work and Social Ecology directly.

Courses

Allied Health—Conjoint (AHCJ)

Courses

AHCJ 101. Introductory Chemistry. 4 Units.
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.

AHCJ 102. Introductory Organic Chemistry. 4 Units.
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.

AHCJ 103. Introductory Biochemistry. 4 Units.
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.

AHCJ 105. Procedures in Phlebotomy. 5 Units.
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.

AHCJ 110. Fundamentals of College Algebra. 4 Units.
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 Units.
Focuses on mechanics and properties of matter and heat; emphasizes concepts. Per week: lecture three hours, laboratory three hours. Designed for students entering programs in the allied health sciences and nursing.

AHCJ 112. Introductory Physics. 4 Units.
Focuses on sound, light, electricity and magnetism, atomic and nuclear physics, and relativity; emphasizes concepts. Per week: lecture three hours, laboratory three hours. Designed for students entering programs in the allied health sciences and nursing.

AHCJ 115. Introduction to Health Care Professions I. 2 Units.
Introduces health-care professions, including their entry-level educational requirements at the undergraduate level. Content includes concepts of health care as practiced within the U.S health-care system, roles of specific professions, job descriptions and scopes of practice for the clinical disciplines being profiled, modes of interprofessional interaction, work environments of profiled disciplines, educational requirements and costs, employment analysis and salary ranges.

AHCJ 116. Introduction to Health Professions II. 2 Units.
Introduces health-care professions, including their entry-level educational requirements at the graduate level. Content includes concepts of health care as practiced within the U.S. health-care system, roles of specific professions, job descriptions and scopes of practice for the clinical disciplines being profile,; modes of inter-professional interaction, work environments of profiled disciplines, educational requirements and costs, employment analysis and salary ranges.

AHCJ 151. General Chemistry I. 4 Units.
First quarter of a three-quarter sequence in general college chemistry. Meets the general chemistry requirement for science, engineering, and prehealth professional majors.

AHCJ 152. General Chemistry II. 4 Units.
Second quarter of a three-quarter sequence in general college chemistry. Meets the general chemistry requirement for science, engineering, and prehealth professional majors.

AHCJ 153. General Chemistry III. 4 Units.
Third quarter of a three-quarter sequence in general college chemistry. Meets the general chemistry requirement for science, engineering, and prehealth professional majors.

AHCJ 177. Professional Literacy for Nonnative Readers. 3 Units.
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.

AHCJ 205. Essentials of Microbiology. 4 Units.
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 Units.
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 Units.
Instruction in Microsoft Excel, including basic-to-advanced features. Emphasizes data presentation. Uses case studies for assessment. Online instruction.

AHCJ 225. History of Radiation and Imaging 1890-1940. 3 Units.
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 to1940. 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 Units.
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 228. Hispanic Culture for Allied Health Professionals. 4 Units.
Introduces basic humanities concepts relevant to the Hispanic culture and its influence on how health care is provided today. Includes cultural awareness, heritage, health beliefs and practices, and culturally competent care and communication.

AHCJ 235. Essentials of Human Anatomy and Physiology. 4 Units.
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 Unit.
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 Units.
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 thirty hours, laboratory thirty hours. Course covers two quarters. Grade given upon completion of the 241, 242 sequence.

AHCJ 242. Microbiology. 2.5 Units.
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 AHCJ 241, 242 sequence.

AHCJ 250. Human Anatomy and Physiology I. 5 Units.
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 II. 5 Units.
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.

AHCJ 252. Human Anatomy and Physiology. 4 Units.
Function of enzymes, cell respiration and metabolism, secretion and action of hormones, and circulatory and respiratory systems. Lecture and laboratory.

AHCJ 305. Infectious Disease and the Health-Care Provider. 1 Unit.
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 Unit.
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 Units.
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 Units.
Introductory course in managing stress from a mind, body, and spirit perspective. Emphasizes integration and unity of component parts to provide a composite, and the bases for managing stress with whole person care. Introduces evidence-based research for managing stress from health psychology; lifestyle health; and use of humor, music, exercise, rest/relaxation, and religion/spirituality--as well as other integrated areas. Introduces student to the tools needed to identify and manage stress, while teaching how to strive for health and balance.

AHCJ 315. Psychosocial Aspects of Health Care. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
Studies carbon chemistry as related to organic compounds found in the human organism.

AHCJ 331. Human Resource Management. 3 Units.
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. 4 Units.
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 Units.
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 341. Cultural Perspectives in Professional Practice I. 3 Units.
First course in a four-course sequence that progressively enhances students? ability to provide culturally sensitive care within a Western clinical context. Focuses on professional and academic aspects of writing; as well as on mastery of critical thinking processes that increase the student?s ability to solve problems, form opinions, and make decisions. Typical assignments emphasize proficiency in the mechanics of speaking and writing in English, knowledge of the rules regarding plagiarism, and the application of APA guidelines.

AHCJ 342. Cultural Perspectives in Professional Practice II. 3 Units.
Second course in a four-course sequence that progressively enhances students? ability to provide culturally sensitive care within a Western clinical context. Continues the focus on professional and academic aspects of writing; as well as on mastery of critical thinking processes that enhance the ability to solve problems, form opinions, and make decisions. Typical assignments emphasize proficiency in technical writing for the health-care professional, based on APA guidelines.

AHCJ 343. Cultural Perspectives in Professional Practice III. 3 Units.
Third course in a four-course sequence that progressively enhances students? ability to provide culturally sensitive care within a Western clinical context. Continues the focus on professional and academic aspects of writing; as well as on mastery of critical thinking processes that enhance the ability to solve problems, form opinions, and make decisions. Typical assignments emphasize reflective and technical writing, including research papers that follow APA guidelines; as well as oral presentations.

AHCJ 344. Cultural Perspectives in Professional Practice IV. 3 Units.
Fourth course in a four-course sequence that progressively enhances students? ability to provide culturally sensitive care within a Western clinical context. Emphasizes mastery of professional and academic aspects of writing; as well as of critical thinking processes that enhance the ability to solve problems, form opinions, and make decisions. Additional practice in writing research papers that follow APA guidelines; as well as in making oral presentations.

AHCJ 351. Statistics for the Health Professions. 3 Units.
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 Units.
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. 3 Units.
Physiology of the human body--including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

AHCJ 402. Pathology I. 4 Units.
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 Units.
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 404. Pharmacology. 1,2 Unit.
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 Units.
Examines the theories of learning applied to the teaching process. Evaluates current research and methods of instruction.

AHCJ 407. Financial Management. 2 Units.
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 two hours.

AHCJ 408. Health-Care Management. 4 Units.
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 Units.
Studies the fundamental mechanisms of pathology pertaining to the neuromusculoskeletal systems. Focuses on the functional consequences of human diseases.

AHCJ 412. Anatomy. 9 Units.
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 Units.
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.

AHCJ 417. Lifestyle Health and the Science of Wellness. 3 Units.
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 Units.
Physiology of the human body, including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

AHCJ 421. Psychology of Physical Disability. 2 Units.
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 Units.
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 Units.
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 Units.
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 444. Neuroanatomy II. 2 Units.
Studies neuroanatomical systems, structures, and pathways--with application to lesions of the human nervous system.

AHCJ 445. Biostatistics. 3 Units.
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 Units.
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 Units.
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 Units.
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.

AHCJ 464. Group Process and Dynamics. 3 Units.
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 Units.
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 Units.
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 Units.
Advanced conceptual frameworks, data analyses, and techniques in quantitative and qualitative research. Emphasizes process for obtaining and using evidence-based research.

AHCJ 475. Health-Care Research and Statistics. 4 Units.
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 493. Senior Portfolio I. 3 Units.
Allows students to progress toward building competence in SAHP and program outcomes (including diversity) for graduates.

AHCJ 494. Senior Portfolio II. 3 Units.
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 Units.
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. 1-12 Units.
Advanced clinical experience in selected areas of professional practice.

AHCJ 498. Wholeness Portfolio II. 1 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Medical Ethics for the Health Care Practitioner. 3 Units.
Examines current challenges to the ethical practice of medicine in times of changing insurance laws and limited funds for patient welfare, health, and durable equipment. Provides the practitioner with an ethical basis on which to make decisions.

AHCJ 509. Transformational Teaching and Learning. 3 Units.
Explores theories and styles of learning and personality factors that relate to learning. Includes implications of effective intellectual, emotional, and social functioning 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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Explores modern imaging techniques used to assess muscoskeletal disorders and cardiovascular pathologies. Includes radiographs, CAT scans, MRIs, bone densitometry, PET scans. Emphasizes clinical ultrasound imaging as used in physical therapy.

AHCJ 517. Ethical Issues in Modern Medicine. 3 Units.
Explores current issues related to patient care and billing, including ethical treatment of patients, new treatment modalities, medical research in the clinical environment, ethical issues with third-party payers, and professional behavior standards related to modern medicine.

AHCJ 518. Advanced Physiology I: Neurobiology. 3 Units.
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 Unit.
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 Units.
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 Units.
Introduces pharmacology, including study of pharmacokinetics, pharmacodynamics, and actions of pharmaceuticals commonly encountered in various allied health professions.

AHCJ 526. Computer Applications II. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. 3 Units.
Surveys the fundamental tissues (epithelial, connective, muscle, and nerve); as well as the histopathology of selected diseases, including changes in bone, cartilage, and other tissues.

AHCJ 539. Technology and Health-Care Organizations. 3 Units.
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 Units.
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 Units.
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 Units.
Fundamental mechanisms of disease, including: cell injury, inflammation, repair, fluid disorders, neoplasms; developmental, genetic, pediatric, immune, infectious, physical, dietary, blood, vascular, and heart diseases.

AHCJ 543. Pathology II. 3 Units.
Fundamental mechanisms of disease, including: respiratory, gastrointestinal, liver and biliary tract, pancreatic, endocrine, kidney, urinary tract, male and female genital tract, breast, musculoskeletal, nervous system, and skin diseases.

AHCJ 544. Advanced Functional Neuroanatomy. 3 Units.
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 Units.
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 546. Therapeutic Humor in Health Care. 3 Units.
Distinguishes between humor and laughter and how each affects physiological, psychological, and sociological health. Discusses ways that health-care providers can incorporate humor into the care of patients and their families. Utilizes published research studies to support the efficacy of humor in health care as an evidenced-based practice. Designed for health-care providers who want to become knowledgeable and to utilize therapeutic humor in whole person care.

AHCJ 548. Human Resource Management in the Health-Care Environment. 3 Units.
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 Units.
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 Units.
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 Units.
Administering the academic department: personnel selection, development, and evaluation; finance; team development; and leadership theories.

AHCJ 552. Professional Systems in Management II. 3 Units.
Administering the clinical setting, including assessing needs, implementing a business plan, and negotiating contracts; management philosophies.

AHCJ 555. Writing for Health-Care Professionals. 3 Units.
Writing by health professionals for professional publications and business planning. Selection of journal; and preparation of abstract, manuscript, or professional business plan.

AHCJ 556. Administration in Higher Education. 3 Units.
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 Units.
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 Units.
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 Units.
Physiology of the human body, including neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

AHCJ 561. Neuroscience I: Neuroanatomy. 4 Units.
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 Units.
Presents current knowledge of cellular physiology and the role of chemokines and cytokines in health and disease. Covers membrane physiology and the resting membrane; and action potential, muscle physiology, and thermoregulation and neural control systems for movement--with special emphasis on gait.

AHCJ 563. Neuroscience III: Clinical Neurology. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 568. Spirituality and Health: The Wholeness Connection. 3 Units.
Utilizes known physiological mechanisms of the central nervous, neuroendocrine, and immune systems to examine the influence of religious/spiritual beliefs and practices on physical and mental health. Focuses on the integrative science of psychoneuroimmunology as a basis for understanding how devout religious/spiritual beliefs and practices may affect not only a sense of well-being and quality of life, but also longevity. Includes 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.

AHCJ 569. Computers and Electronics for Clinicians. 3 Units.
Explains the roles of computers and electronics in a clinical setting. Equipment used in a classroom setting.

AHCJ 571. Statistics and Research for Health Professionals I. 3 Units.
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. Critical analysis of scientific literature related to an identified professional practice area, which results in an evidence-based practice paper.

AHCJ 572. Statistics and Research for Health Professionals II. 3 Units.
Advanced conceptual frameworks, data analyses, and techniques in quantitative and qualitative research. Emphasizes process for obtaining and using evidence-based research. Data analysis of a small data set in order to answer a research question and write a formal results section complete with appropriate tables and graphs.

AHCJ 574. Behavioral Modification and Personal Change. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Develops strategies for instructional effectiveness, evaluation, and assessment processes.

AHCJ 585. Technology in Education. 3 Units.
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. (Course not taught every year.).

AHCJ 586. Curricula Planning in Health Sciences. 3 Units.
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 Units.
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 Units.
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. 2,3 Units.
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 and pilot tests a research proposal, tests procedures and data forms, and implements the research proposal in a practice setting. Literature review and written paper required for third unit.

AHCJ 592. Research II. 3 Units.
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 Units.
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 Units.
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.

AHCJ 600. Active Online Learning. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 705. Infectious Disease and the Health Care Provider. 1 Unit.
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 721. Wholeness Portfolio I. 1 Unit.
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 Unit.
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)

Courses

ANAT 301. Head and Neck Anatomy, DH. 4 Units.
Gross anatomy of the head and neck. Lecture and demonstration.

ANAT 303. General and Oral Histology and Embryology. 3 Units.
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 510. Gross Anatomy. 8.5 Units.
Anatomy of the head, neck, locomotor system, thorax, abdomen, pelvis, and perineum. Correlated with radiology, applied features, and embryological development. Restricted to Biomedical Science Program (certificate). Cross-listing: ANAT 529.

ANAT 511. Human Anatomy for Dentists I. 5 Units.
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 Units.
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 Units.
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 515. Human Embryology. 2 Units.
Reviews the morphologic processes and molecular basis of human development. Includes the production of human gametes, fertilization, gastrulation, placentation, and development of the major organ systems. Emphasizes clinically relevant features of pregnancy and developmental processes that are susceptible to malformation. Restricted to Biomedical Science Program (certificate). Cross-listing ANAT 521.

ANAT 516. Neuroscience GS. 6 Units.
Integrated approach to the fundamentals of neuroanatomy and neurophysiology, with applications to clinical neurology.

ANAT 525. Special Topics: Advanced Dissection. 1-4 Units.
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.

ANAT 527. Advanced Clinical Anatomy for Nurse Anesthetists. 5 Units.
Emphasizes detailed description and applied anatomy of the body systems (cardiovascular, respiratory renal, hepatic nervous, and endocrine) relevant to the nurse anesthetist.

ANAT 529. Gross Anatomy and Embryology. 10.5 Units.
Provides the morphological foundation upon which clinical knowledge and experiences are built. Supports the organ-system curriculum in the freshman year. Approaches anatomy from gross structural and embryological perspectives. Provides students with the knowledge necessary to recognize clinical variations and abnormalities during their medical careers.

ANAT 541. Gross Anatomy GS. 7 Units.
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 Units.
The microscopic structure of cells, tissues, and organs of the human body. Autumn Quarter.

ANAT 544. Human Embryology Lecture. 2 Units.
The plan of development as it pertains to humans. Considers principles.

ANAT 544L. Human Embryology Laboratory. 1 Unit.
Students work with both human and comparative materials. Winter Quarter.

ANAT 547. Histochemistry. 3 Units.
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.

ANAT 556. Comparative Embryology. 2 Units.
Comparison of common models of development, their historic contributions, their benefits/limitations, and current practical applications.

ANAT 557. Psychoneuroimmunology. 4 Units.
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 Units.
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.

ANAT 594. Special Topics in Anatomy. 1-7 Units.
Intensive study of a selected topic approved by the chair of the department. Individual guidance by a staff member.

ANAT 697. Research. 1-8 Units.

ANAT 698. Thesis. 1-2 Units.

ANAT 699. Dissertation. 1-5 Units.

ANAT 891. Anatomy Elective. 1.5-18 Units.
A self-designed and self-directed dissection elective in the fourth year of the MD curriculum with emphasis on the head, neck, abdomen, pelvis, thorax, back, or limbs--correlating basic anatomy with clinical applications.

Anesthesiology (ANES)

Courses

ANES 314. Dental Anesthesia: Local Anesthesia and Inhalation Sedation. 4 Units.
A philosophy of patient management, including use of local anesthetics and nitrous oxide/oxygen sedation, as well as the physiological and psychological aspects of pain and anxiety. Covers the history of anesthesia, patient evaluation, pharmacology armamentarium and complications regarding use of these agents, and 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 Unit.
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 Unit.
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 Unit.
Presents current concepts, practice, and controversies in general anesthesia. Reviews textbook chapters on a weekly basis during the Autumn and Winter quarters.

ANES 604. Anesthesia Literature Review. 1 Unit.
Weekly session reviews current anesthesia literature.

ANES 624. Intravenous Conscious Sedation. 4 Units.
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 Unit.
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 Unit.
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 Units.
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 twenty-four month program.

ANES 696. Scholarly Activity in Dental Anesthesiology. 1 Unit.
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 697A. Research. 1 Unit.
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 Unit.
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 697C. Research. 1 Unit.
Resident completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

ANES 746. General Anesthesia. 10 Units.
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 Units.
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 Units.
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. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of anesthesiology, including research.

Anthropology (ANTH)

Courses

ANTH 306. Language and Culture. 4 Units.
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 Units.
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 448. Medical Anthropology. 4 Units.
Studies sickness and health as universal factors in the human condition. Examines worldview 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.

Behavioral Health—Conjoint (BHCJ)

Courses

BHCJ 303. Cultural Learning. 4 Units.
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.

BHCJ 501. Critical Thinking. 4 Units.
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.

BHCJ 502. Classroom Teaching Strategies. 3 Units.
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.

BHCJ 514. Editing, Style, and Grammar for Academic Writing and Publication. 2 Units.
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.

BHCJ 515. Researching and Writing Graduate Level Papers. 2-4 Units.
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.

BHCJ 550. Fundamentals of Dialectical Behavior Therapy. 2 Units.
Examines the theory, empirical foundations, and applications of dialectical behavior therapy (DBT), an evidenced-based psychosocial treatment initially developed for suicidal individuals with borderline personality disorder (BPD). Familiarizes students with the techniques of DBT, as well as the latest research on and adaptations for use of DBT with other populations.

BHCJ 585. Sociology of Communities. 4 Units.
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.

BHCJ 615. Writing for Thesis/Dissertation. 2-4 Units.
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.

BHCJ 649. Integration of Behavioral Health in Primary Care. 2 Units.
Introduces the integration of behavioral health in primary care settings. Focuses on how a wholistic (bio-psychosocial-spiritual) approach to behavioral health care (including the integration of diet and exercise) can improve emotional well-being and health-care outcomes. All students in the school's behavioral health disciplines encouraged to take this course.

Biochemistry (BCHM)

Courses

BCHM 306. Introduction to Organic and Biochemistry. 6 Units.
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 Units.
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 Unit.

BCHM 506. Seminar Presentation in Biochemistry. 1 Unit.

BCHM 508. Principles of Biochemistry. 6 Units.
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 515. Introduction to Bioinformatics. 2 Units.
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 Units.
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. Fundamentals of Human Biochemistry. 2.5 Units.
Supports the organ system curriculum in the freshman year. Provides a foundation in the nature and properties of biological molecules in the human body that can support the subsequent years of medical training and students' careers as practicing physicians. Combines lectures, in-class quizzes, and case-based exercises to teach the biochemical basis for cell structure and function, emphasizing an integrated approach to the understanding of protein structure and function; intermediary metabolism of carbohydrate, lipids, proteins, and nucleic acids; and the metabolic patterns of selected tissues.

BCHM 519. Medical Biochemistry, Molecular Biology, and Genetics. 4.5 Units.
Comprehensive course 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. Course restricted to Biomedical Science Program (certificate).

BCHM 523. Introduction to Physical Biochemistry. 3 Units.
Introduces biochemical thermodynamics, proteins and protein physical chemistry, enzyme kinetics and mechanisms, and bioenergetics.

BCHM 525. Metabolic Interrelationships and Control. 5 Units.
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.

BCHM 527. Molecular Biology of the Cell. 8 Units.
Identical to CMBL 502, offered by the Department of Microbiology.

BCHM 529. Fundamentals of Human Biochemistry and Genetics. 4.5 Units.
A lecture sequence for first-year 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 530. Biochemical Basis of Human Disease SM. 2 Units.
A series of lectures for second-year medical students designed to provide a biochemical/genetic/molecular basis for understanding human diseases.

BCHM 534. Techniques of Biochemistry. 2-6 Units.
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 Units.
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 Units.

BCHM 697. Research. 1-10 Units.

BCHM 698. Thesis. 1-3 Units.

BCHM 699. Dissertation. 1-5 Units.

BCHM 891. Biochemistry Elective. 1.5-12 Units.
Fourth-year elective that allows the student to create materials for team-based learning in the biochemical basis of human disease. Includes identifying a disorder that has clear and characteristic biochemical manifestations; as well as preparing a set of teaching notes, assessment tools, and application exercises.

Biology (BIOL)

Courses

BIOL 116. Introduction to Human Biology. 3 Units.
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 Units.
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 407. Herpetology. 3 Units.
Covers a broad range of topics in herpetology, including systematics, diversity, morphology, physiology, behavior, ecology, conservation, and research methodology. Focuses field experience on Southern California herpetology. Two hours lecture, three-hour laboratory each week.

BIOL 409. Mammalogy. 4 Units.
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 three hours, one three-hour laboratory.

BIOL 414. Biology of Marine Invertebrates. 4 Units.
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 Units.
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 three hours, laboratory three hours.

BIOL 426. Invertebrate Paleontology. 4 Units.
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 three hours, plus one three-hour laboratory.

BIOL 427. Vertebrate Paleontology. 4 Units.
Fossil vertebrates, with emphasis on the origins of major groups. Systematics, biology, and biogeography of ancient vertebrates. Per week: class three hours, plus one three-hour laboratory.

BIOL 428. Genetics and Speciation. 4 Units.
Introduces genetic mechanisms of biological change. Processes of inheritance through time evaluated in their ecological context.

BIOL 437. Animal Behavior. 4 Units.
Behavioral mechanisms of animals and their role in survival. Lectures and projects.

BIOL 439. Behavioral Ecology. 4 Units.
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 Units.
Fossil plants; their morphology, paleoecology, taphonomy, classification, and stratigraphic distribution. Analyzes floral trends in the fossil record. Per week: class three hours, plus one three-hour laboratory or field trip.

BIOL 449. Biodiversity and Conservation. 3 Units.
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 Units.
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 465. Introduction to GIS for the Natural Sciences. 2 Units.
Principles and practice of GIS data acquisition, data editing, map making, and geodatabase management. Recommended for students beginning a research project.

BIOL 466. Multivariate Statistics. 3 Units.
Practical, software-based application of multivariate statistics to complex data sets, including both null hypothesis testing and practical significance. Builds on the foundation of an introductory statistics course.

BIOL 475. Philosophy of Science and Origins. 4 Units.
Concepts in the history and philosophy of science, and the application of these principles in analyzing current scientific trends.

BIOL 479. Readings in Biology. 1-4 Units.
Studies, analyzes, and discusses current and classic papers.

BIOL 488. Current Topics in Biology. 1-4 Units.
Reviews cutting-edge literature in the biological sciences. Different sections may be repeated for additional credit.

BIOL 495. Undergraduate Research. 1-4 Units.
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 Units.
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 Units.
Behavior, physiology, ecology, morphology, and systematics of marine invertebrates, with emphasis on morphology and systematics. Per week: class three hours; one-day field trip alternate weeks, or the equivalent.

BIOL 505. Marine Biology. 4 Units.
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 four hours, plus all-day field trips (usually on Sundays).

BIOL 507. Herpetology. 3 Units.
Covers a broad range of topics in herpetology, including systematics, diversity, morphology, physiology, behavior, ecology, conservation, and research methodology. Field experience focuses on southern California herpetology. Per week: Two hours lecture and a three-hour laboratory.

BIOL 515. Biogeography. 3 Units.
Present and past distribution and migrations of the natural populations of organisms.

BIOL 517. Ecological Physiology. 4 Units.
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 four hours. Offered alternate years.

BIOL 518. Readings in Ecology. 2 Units.
Studies, analyzes, and discusses current and classic papers.

BIOL 526. Principles and Methods of Systematics. 3 Units.
Studies the principles and methods of modern systematic biology, with focus on the assumptions, concepts, and computerized methods of phylogeny reconstruction.

BIOL 529. Mammalogy. 4 Units.
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 three hours, one three-hour laboratory. Additional work required beyond BIOL 409.

BIOL 536. Readings in Animal Behavior. 2 Units.
Critical analysis of the research literature on selected topics in animal behavior.

BIOL 537. Advances in Sociobiology. 3 Units.
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 Units.
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 Units.
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 Units.
Comparative analysis of species concepts, mechanisms of speciation, and analysis of micro- and macroevolution.

BIOL 546. Techniques in Vertebrate Ecology. 3 Units.
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 Units.
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 Units.
Applies molecular markers to the study of ecology and natural history of populations. Emphasizes molecular techniques that uniquely contribute to resolving major problems in phylobiogeography and measures of adaptiveness.

BIOL 549. Biodiversity and Conservation. 3 Units.
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 Units.
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 Units.
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 Unit.
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 565. Introduction to GIS for the Natural Sciences. 2 Units.
Principles and practice of GIS data acquisition, data editing, map making, and geodatabase management. Recommended for students who are beginning a research project.

BIOL 566. Multivariate Statistics. 3 Units.
Practical, software-based application of multivariate statistics to complex data sets, including both null hypotheses testing and practical significance. Builds on the foundation of an introductory statistics course.

BIOL 588. Current Topics in Biology. 1-5 Units.
Reviews cutting-edge literature in the biological sciences. Different sections may be repeated for additional credit.

BIOL 589. Readings in Biology. 1-4 Units.
Studies, analyzes, and discusses current and classic papers on an individual basis with advisor.

BIOL 607. Seminar in Biology. 0.5 Units.
Seminar presentations by guest scientists on recent research and developments in biological science. No student presentation required.

BIOL 616. Research and Experimental Design. 2 Units.
Concepts, methods, and tools of research, including experimental design and data analysis.

BIOL 617. Proposal Writing and Grantsmanship. 2 Units.
Skills and practice of effective proposal writing and strategies for locating and obtaining research grants.

BIOL 618. Writing for Publication. 2 Units.
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 658. Advanced Philosophy of Science readings. 2 Units.
Reading and discussion of selected references in the philosophy of science, and the application of these concepts in the practice of scientific research and interpretation, including their influence on scientific study of origins. Best taken near the end of a student's graduate program. Two-hour class session per week.

BIOL 695. Special Projects in Biology. 1-4 Units.
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 Units.
See department checklist for recommended number of units.

BIOL 698. Thesis Research. 1-8 Units.
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 Units.
Credit for research and for writing the doctoral dissertation. Grade received does not indicate whether dissertation is completed and approved.

Cardiac Electrophysiology Technology (CEPT)

Courses

CEPT 245. Cardiovascular Anatomy and Physiology. 3 Units.
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 Units.
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 Units.
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. 3 Units.
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.

CEPT 253. Cardiac Electrophysiology and Rhythm Recognition III. 3 Units.
Explores the clinical use of diagnostic tests and procedures related to intracardiac catheter placement and the electrograms that are created during EP studies/procedures. Improves recognition and interpretation of the intracardiac electrograms. Introduces anatomical and physiological concepts of rhythm generation and cardiac electrophysiology pathways. Emphasizes basic intracardiac electrogram recognition, which combined with practice, leads to greater interpretation proficiency during cardiac EP procedures/studies.

CEPT 258. Fundamentals of Biomedical Science. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Continues to explore advanced cardiovascular diagnostic and therapeutic procedures. Laboratory practice and techniques.

CEPT 285. Cardiology. 3 Units.
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 Units.
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 Unit.
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 Unit.
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 Units.
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 Units.
Presents cardiac electrophysiology concepts though 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 Units.
A comprehensive view of the rapidly evolving field of interventional cardiology. Studies new developments, technological innovations, and advances in clinical application.

Cell and Molecular Biology (CMBL)

Courses

CMBL 501. Steady-State Cell. 3-8 Units.
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. Autumn Quarter.

CMBL 502. The Cell in Transition. 8 Units.
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.

CMBL 503. The Differentiated Cell. 10 Units.
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 Unit.
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. Autumn, Winter, Spring quarters.

CMBL 512. Clinical Correlates. 1 Unit.
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. Autumn, Winter, Spring quarters.

CMBL 513. Clinical Correlates. 1 Unit.
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. Autumn, Winter, Spring quarters.

CMBL 537. Introduction to Human Genetics. 1 Unit.
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 Units.
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 Units.
Describes signal transduction pathways and other cellular regulatory mechanisms that form the basis of receptor-response phenomena. Spring Quarter.

CMBL 543. Immunology. 4 Units.
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 Units.
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.

Child Life Specialist (CHLS)

Courses

CHLS 501. Hospitalized Infant and Toddler Development. 3 Units.
Emphasizes the development of infants and toddlers in the hospital setting. Presents theory and research findings regarding socialization, emotional development, and temperament. Focuses on working with this specific population in the health-care system and exposes students to practical interventions and activities. Discusses bereavement topics, appropriate health, safety, and nutritional practices. Provides tools to develop competencies and skills necessary to effectively work with infants and toddlers.

CHLS 502. Child Life Seminar. 2 Units.
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. 2 Units.
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 Units.
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 505. Cross-Cultural Perspectives in Health Care. 3 Units.
Introduces students to the diversity of cultures and the powerful impact diversity has on the delivery of health-care services. Explores specific characteristics regarding the composition, cultural aspects, and unique health-care issues faced by African Americans, Asian Americans/Pacific Islanders, Hispanics/Latinos, and American Indians/Alaskan Natives. Enhances students' understanding of human differences, preferences, biases, and stereotypes; and fosters development of the awareness, sensitivity, knowledge, and competence required to affirm diversity in health-care and practice settings.

CHLS 506. Therapeutic Play for Children Affected by Illness and Injury. 3 Units.
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 Units.
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 Units.
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.

CHLS 508. Grief and Loss. 3 Units.
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 509. Child Life Assessment. 3 Units.
Orients students to child life in hospitals and other health-care environments. Gives attention to stress and coping assessment, along with other interventions used to assist patients and families. Examines additional interventions and significant variables, such as providing emotional support for families and encouraging optimum development of children facing a broad range of challenging experiences. Addresses roles and responsibilities of membership on an interdisciplinary team of health professionals, as well as requirements for professional standards of practice.

CHLS 600. Child Life Theory and Practice. 3 Units.
Examines children and their families in a health care setting from the perspective of a child life specialist. Demonstrates the role of the child life specialist in minimizing the stress and anxiety experienced during hospitalization. Focuses on educational and play components, as well as the general support and scope of practice that are unique to the field of child life.

CHLS 604. Child Life Internship and Supervision I. 3,4 Units.
While accumulating the hours required by the Child Life Council to establish eligibility for the certification examination, students work with children, youth, teens, and their families in a hospital and/or related setting under the supervision of a certified child life specialist. Gives special attention to legal, ethical, moral, educational, cultural, spiritual, and gender issues in the clinical internship. 3 units (250 hours) required for students under pre-2014-2015 catalogs; 4 units (300 hours) required for students beginning with the 2014-2015 catalog.

CHLS 605. Child Life Internship and Supervision II. 3,4 Units.
While accumulating the hours required by the Child Life Council to establish eligibility for the certification examination, students work with children, youth, teens, and their families in a hospital and/or related setting under the supervision of a certified child life specialist. Gives special attention to legal, ethical, moral, educational, cultural, spiritual, and gender issues in the clinical internship. 3 units (250 hours) required for students under pre-2014-2015 catalogs; 4 units (300 hours) required for students beginning with the 2014-2015 catalog.

CHLS 606. Parenting Medically Fragile Children. 3 Units.
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 Units.
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 Unit.
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.

CHLS 609. Global Practice: Child Life Specialist. 2 Units.
Introduces students to child life practice in a global context. Examines the ethical and practice issues associated with delivery of pediatric psychosocial services in health-care systems in underdeveloped and developed environments. Gives critical attention to issues of pediatric and adolescent growth and development, family-centered care, grief and loss, and advocacy. Shares models for learning and collaboration within the context of health-care delivery.

CHLS 694. Directed Study: Child Life Specialist. 1-4 Units.
Individual study in areas of special interest concerning the pediatric patient and family. May be repeated for credit at the discretion of the faculty.

Clinical Laboratory Science/ Cytotechnology (CLSC)

Courses

CLSC 301. Introduction to Radiographic Procedures I. 2 Units.
Introduces the nature and description of radiographic procedures for the nonradiologic technologist, with an emphasis on radiographic procedures used in the collection of cytologic specimens. Applies principles, medical techniques, and instrumentation to a radiographic setting. Includes observation laboratory.

CLSC 302. Introduction to Radiographic Procedures II. 2 Units.
Introduces the nature and description of radiographic procedures for the nonradiologic technologist, with an emphasis on radiographic procedures used in the collection of cytologic specimens. Applies principles, medical techniques, and instrumentation to a radiographic setting. Includes observation laboratory.

CLSC 341. Gynecologic Cytology. 11 Units.
Study of the anatomy, histology, and cytology of the female genital tract--including cytohormonal changes, nonneoplastic abnormalities, premalignant and malignant lesions, and rare extrauterine malignancies. Students interpret clinical history, explain significance of data, render diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 351. Respiratory Cytology. 8 Units.
Study of the anatomy, histology, and cytology of the respiratory tract--including fine needle aspiration of the lung. Students interpret clinical history, explain significance of data, render diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 353. Urinary Tract and Prostate Cytology. 3 Units.
Study of the anatomy, histology and cytology of the urinary tract--including the bladder, ureters, renal pelvis, kidney, and prostate. Students interpret clinical history, explain significance of data, render diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 357. Gastrointestinal Tract Cytology. 2 Units.
Study of the anatomy, histology, and cytology of the gastrointestinal tract--including the esophagus, stomach, small and large intestines, and colon. Students interpret clinical history, explain significance of data, render diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 361. Body Cavity and Miscellaneous Secretions Cytology. 8 Units.
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.

CLSC 363. Bone Biopsy Cytology. 1 Unit.
Histology and cytology of bone. Lecture, demonstration, and microscopic examination.

CLSC 364. Body Fluid Cytology. 5 Units.
Anatomy, histology, and cytology of fluids from serosal cavities, including CSF. Students interpret clinical history, explain significance of data, render diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 365. Breast Cytology. 1 Unit.
Histology and cytology of the breast. Lecture, demonstration, and microscopic examination.

CLSC 367. Cytogenetics. 1 Unit.
Meiosis, mitosis, and karyotype preparation. Genetic disorders. Lecture, demonstration, and laboratory.

CLSC 371. Cytopreparation Techniques. 3 Units.
Collection techniques; fixation and staining procedures; preparation of monolayers, smears, and cell blocks from various cytologic specimens. Includes basic laboratory skills, such as universal precautions, reagent preparation, centrifugation, pipetting, and micropipetting. Introduces basic laboratory operations, including quality control, quality assurance, laboratory safety, and emergency preparedness. Lecture, demonstration, and laboratory.

CLSC 373. Histotechnology Techniques. 1 Unit.
Technical preparation of tissue specimens for microscopic evaluation, with emphasis on special stains and immunohistochemistry. Lecture and observation laboratory.

CLSC 381. Fine Needle Aspiration Cytology I. 4 Units.
Study of the benign and malignant cells aspirated from thyroid, salivary gland, breast, liver, pancreas, lymph node, soft tissue masses, and other miscellaneous organs. Includes fine needle aspiration techniques, touch prep of cores preparation, and rapid on-site adequacy assessment. Students interpret clinical history, explain significance of data, render adequacy assessment and/or diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 382. Fine Needle Aspiration Cytology II. 6 Units.
Study of the benign and malignant cells aspirated from thyroid, salivary gland, breast, liver, pancreas, lymph node, soft tissue masses, and other miscellaneous organs. Includes fine needle aspiration techniques, touch prep of cores preparation, and rapid on-site adequacy assessment. Students interpret clinical history, explain significance of data, render adequacy assessment and/or diagnoses, and offer recommendations for further testing. Lecture and laboratory.

CLSC 404. General Histology. 5 Units.
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.

CLSC 405. Pathology. 5 Units.
Advanced didactic and microscopic study of disease processes and corresponding pathologic findings of major organ systems of the human body.

CLSC 406. Pathophysiology. 3 Units.
Advanced didactic study of disease processes and corresponding pathologic findings of major organ systems of the human body.

CLSC 411. Histopathology I. 4 Units.
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.

CLSC 412. Histopathology II. 4 Units.
Didactic and microscopic study of basic pathology of major organs and systems of the human body, with emphasis on relevance to field of cytotechnology.

CLSC 424. Hematology. 3 Units.
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.

CLSC 431. Advanced Specialties. 3 Units.
Principles and techniques of electron microscopy, including basic cell ultrastructure, immunohistochemistry, and molecular biology.

CLSC 432. Current Research Techniques. 3 Units.
Introduces current research techniques and skills development. Techniques in immunocytochemistry, image and flow cytometry, and molecular pathology.

CLSC 471. Advanced Cytology Practices I. 2 Units.
Provides further practical experience by working with routine cytology specimens. Includes cytopreparation; microscopic evaluation of gynecologic and nongynecologic specimens, with an emphasis on fine needle aspiration specimens,;maintenance of regulatory statistics, and error identification.

CLSC 472. Advanced Cytology Practices II. 2 Units.
Expands clinical experience with advanced theory and techniques, including image-assisted screening, LIS operation, mock proficiency testing, and use of telepathology.

CLSC 481. Supervised Cytology Research Project I. 2 Units.
Research project under the supervision of the program director. Oral presentation and paper.

CLSC 483. Supervised Hematology Research Project. 2 Units.
Supervised research project under the direction of the hematopathologist. Oral presentation and paper.

CLSC 491. Cytology Affiliation I. 6 Units.
Three two-week (forty 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 Units.
Three two-week (forty 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/ Medical Technology (CLSM)

Courses

CLSM 105. Procedures in Phlebotomy. 4 Units.
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.

CLSM 303. Urine and Body Fluid Analysis I. 1 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
Theory and background of routine and special laboratory procedures used in diagnosis and treatment of hematologic and other diseases. Emphasizes peripheral blood-cell morphology, hematopoeses, maturation, and kinetics. Pathophysiology of hematologic disorders, including anemias and hematologic malignancies. Correlation of hemostasis testing with clinical hemostatic disorders. Lecture and laboratory.

CLSM 325. Clinical Immunology. 3 Units.
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 Units.
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 Units.
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.

CLSM 331. Biochemistry. 5 Units.
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 Units.
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.

CLSM 333. Clinical Chemistry II. 4 Units.
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.

CLSM 341. Immunohematology I. 3 Units.
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 Units.
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.

CLSM 396. CLS Junior Seminar. 2 Units.
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 Unit.
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.

CLSM 411. Urine and Body Fluid Analysis II. 1 Unit.
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.

CLSM 413. Diagnostic Microbiology. 6 Units.
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.

CLSM 414. Clinical Parasitology. 2 Units.
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.

CLSM 422. Hematology III. 6 Units.
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.

CLSM 434. Clinical Chemistry III. 5 Units.
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.

CLSM 435. Immunoassay and Molecular Diagnostic Techniques. 3 Units.
Reviews common immunoassay and molecular diagnostic assay methodologies utilized in the clinical laboratory. Discusses immunoassay technologies, including: EIA, ELISA, EMIT, FPIA, and chemiluminescence. Discusses molecular diagnostic techniques, including: nucleic acid extraction and purification, gel electrophoresis, nucleic acid hybridization and blots, DNA sequencing, and amplification technologies. Compares and contrasts several signal and target amplification technologies, including real-time technologies. Discusses and applies the clinical uses of the foregoing methods to clinical laboratory science. Addresses laboratory design and safety issues.

CLSM 442. Immunohematology III. 3 Units.
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.

CLSM 451. Clinical Laboratory Management I. 2 Units.
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 Units.
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 Units.
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. 4 Units.
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.

CLSM 471. Clinical Practicum I. 6 Units.
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.

CLSM 472. Clinical Practicum II. 6 Units.
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.

CLSM 473. Clinical Practicum III. 6 Units.
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.

CLSM 495. Laboratory Science. 3 Units.
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 Unit.
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.

CLSM 497. Clinical Laboratory Science Seminar II. 1 Unit.
Continues assigned capstone project. Presents relevant contemporary topics.

CLSM 498. Clinical Laboratory Science Seminar III. 2 Units.
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.

CLSM 499. Clinical Laboratory Science Independent Study. 1-5 Units.
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.

Clinical Social Work (CSWK)

Courses

CSWK 652. Social Problems within Racial and Ethnic Minority Populations. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

CSWK 676. Advanced Clinical Theory I: Psychoanalytic and Attachment. 3 Units.
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 Units.
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 Units.
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 Units.
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.

CSWK 683. Research Seminar III. 2 Units.
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.

CSWK 684. Advanced Developmental Psychopathology I: Children/ Adolescents. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Credit for dissertation research. Total of 20 units required.

CSWK 699. Dissertation. 12 Units.
Credit for the doctoral dissertation. Should be taken during the last quarter of registration prior to completion and defense.

Coding Specialist (HLCS)

Courses

HLCS 236. Pharmacology. 3 Units.
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 Units.
Surveys human diseases, including the etiology, pathogenesis, and clinical manifestations of commonly encountered diseases.

HLCS 239. Introduction to Health Records Science. 3 Units.
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 Units.
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, ophthalmology, otorhinolaryngology, and respiratory.

HLCS 242. Coding I. 4 Units.
Principles and conventions of ICD-10-CM and ICD-10-PCS 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 Units.
Principles and conventions of ICD-10-CM and ICD-10-PCS coding in diseases and procedures pertaining to pregnancy, perinatal conditions, poisonings, injuries, complications of medical and surgical care, the circulatory system, and neoplasms.

HLCS 245. Coding III. 4 Units.
Principles of current procedural coding terminology (CPT) at the intermediate level, including: surgical coding for all body systems; medical procedures; anesthesia coding; radiology, pathology, and laboratory coding for inpatient and outpatient health-care settings. Modifier assignment. Also includes laboratory practice on 3M software.

HLCS 254. Evaluation and Management Coding for Billing and Reimbursement. 3 Units.
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 Units.
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.

HLCS 291. Computer Applications in Health Care I. 1 Unit.
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. 1 Unit.
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. One hour required each week.

HLCS 961. Coding Practicum I. 2 Units.
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.

HLCS 962. Coding Practicum II. 2 Units.
Continues HLCS 961. HLCS 962 includes an additional twelve-week (six hours per week) coding laboratory experience under direct supervision of an instructor.

Communication Sciences and Disorders (CMSD)

Courses

CMSD 034. Basic Communication Skills. 1 Unit.
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 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Introduces basic theories and laboratory exercises in acoustics, psychoacoustics, and physiological acoustics.

CMSD 314. Language Analysis for Speech-Language Pathology. 4 Units.
Introduces techniques of linguistic analyses used in the study of phonology, morphology, syntax, and semantics.

CMSD 318. Transcription Phonetics. 3 Units.
Student develops transcription skills using the International Phonetic Alphabet.

CMSD 324. Language Disorders of Children. 4 Units.
Impairments of language development in children. Formal and informal assessment of children. Program planning and remediation procedures.

CMSD 334. Speech Sound Disorders in Children. 4 Units.
Definition, classification, etiology, diagnosis, and treatment of phonological/articulation disorders.

CMSD 375. Assistive Technology. 2 Units.
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 Units.
Anatomy and physiology of auditory-vocal communicative process.

CMSD 388. Communication across the Lifespan. 4 Units.
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. 4 Units.
Acoustic and physiological correlates of speech-sound production.

CMSD 424. Adult Language Pathology. 4 Units.
Impairment of language and speech related to organic neuropathology.

CMSD 426. Behavior Management Applications with Special Populations. 4 Units.
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.

CMSD 434. Disorders of Fluency. 2 Units.
Characteristics, theories of etiology, and principles of management of stuttering and other fluency disorders.

CMSD 435. Voice Disorders. 2 Units.
Definition, classification, etiology, diagnosis, and treatment of voice disorders. Pitch, intensity, quality, and resonance.

CMSD 444. Organic Speech Disorders. 4 Units.
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 Units.
Principles and procedures for teaching English as a second language (ESL) and accent modification to bilingual speakers of English.

CMSD 454. Introduction to Audiology. 4 Units.
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. Introduction to Aural Rehabilitation. 4 Units.
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.

CMSD 467. Speech-Language Pathology and Audiology Practicum. 1-4 Units.
Supervised practice in diagnosis and therapy.

CMSD 477. Bilingualism and Biculturalism II. 2 Units.
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 Units.
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 Units.
Purposes for assessment. Procedures employed in describing and diagnosing speech-language impairments.

CMSD 488. Autism Spectrum Disorders. 4 Units.
Characteristics, classifications, theories of etiologies, and principles of management of the autism spectrum disorders. Emphasizes assessment methods and intervention.

CMSD 496. Workshops in Speech-Language Pathology and Audiology. 1-4 Units.
May be repeated with new content for additional credit.

CMSD 499. Speech-Language Pathology and Audiology Independent Study. 1-2 Units.
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. 2 Units.
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. Emphasizes ethical, business, and legislative considerations in speech-language pathology.

CMSD 512. Graduate Portfolio II. 1 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
Addresses impairments of language development in children, formal and informal assessment of children, and programming and planning of remediation procedures. Students meet monthly to discuss application to clinical populations.

CMSD 522. Organic Speech Disorders. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. Speech Sound Disorders in Children. 4 Units.
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 Units.
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 Units.
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.

CMSD 537. Clinical Methods in Speech-Language Pathology. 4 Units.
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 Units.
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. Introduction to Audiology. 4 Units.
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 Units.
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 Units.
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. Seminar: Aural Rehabilitation and Cochlear Implants/ Hearing Aids. 3 Units.
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 Units.
Supervised practice in diagnosis and therapy.

CMSD 575. Instrumentation in Speech and Hearing. 1 Unit.
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 Unit.
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 Units.
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 Unit.
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 Units.
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 586. Educational Fieldwork I. 1 Unit.
Initial supervised therapy on the elementary and/or secondary level and/or in a classroom for the severely language-handicapped child.

CMSD 587. Counseling in Communication Disorders. 3 Units.
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. Educational Fieldwork II. 8 Units.
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 Unit.
For students who have not successfully completed CMSD 588. Requires remediation or completion of clinical skills necessary for work in the public schools.

CMSD 596. Medical Fieldwork I. 1 Unit.
Initial supervised clinical practice in a medical center, rehabilitation facility, or skilled nursing facility.

CMSD 597. Medical Fieldwork II. 8 Units.
Supervised clinical practice in a medical center, rehabilitation facility, or skilled nursing facility.

CMSD 598. Research Methods and Professional Literature in Communication Sciences and Disorders. 3 Units.
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 Unit.
For students who have not successfully completed CMSD 597. Requires remediation or completion of clinical skills necessary for work in medical settings.

CMSD 679. Seminar: Motor Speech Disorders/Augmentative Communication. 3 Units.
Problem-based learning seminar that focuses on etiology, characteristics, evaluation, and treatment of motor speech disorders, including the dysarthrias and apraxia.

CMSD 682. Seminar: Traumatic Brain Injury. 3 Units.
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 Units.
Problem-based learning seminar that focuses on etiology, characteristics, evaluation, and treatment of acquired adult language disorders.

CMSD 685. Seminar: Stuttering. 3 Units.
Provides practical instruction in assessment and remediation with individuals who stutter and/or clutter.

CMSD 687. Seminar: Open Seminar. 1-3 Units.

CMSD 687A. Seminar: Open Seminar. 1 Unit.
Facilitates students' advanced study of current issues in the diagnosis and treatment of communication disorders.

CMSD 687B. Seminar: Open Seminar. 1 Unit.
Facilitates students' advanced study of current issues in the diagnosis and treatment of communication disorders.

CMSD 688. Seminar: Speech Sound Disorders - Advanced. 3 Units.
Typical development of phoneme acquisition and use. Explores etiology, characteristics, assessment and treatment of articulation and phonological disorders and differences in children.

CMSD 697. Research. 1-4 Units.

CMSD 698. Thesis. 1-6 Units.

CMSD 699. Directed Study. 1-3 Units.
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.

Counseling and Family Science Global (CFSG)

Courses

CFSG 584. Global Practice Experience. 3 Units.
Provides students with global educational and practice experience to increase their capacity for working in other contexts and for learning and sharing best-practice skills with peoples of other nations. Course conducted at approved international sites or selected areas in the United States where students are exposed to experiences related to their field of study. May use telesupervision to support oversight of students and their regular contact with the assigned faculty member from LLU. Host site may also require concurrent enrollment in courses that support understanding of specific practice methods and population milieus. Students? department coordinates enrollment. Availability for participation limited to students in good academic and professional performance standing. Minimum and maximum numbers of students participating may vary and are subject to change, depending on the practice site. Costs and international visa requirements depend on economic and government differences, by country.

Counseling (COUN)

Courses

COUN 501. Research Tools and Methodology: Quantitative. 3 Units.
Current social research methods; practice in the use of techniques. Considers the philosophy of the scientific method, and familiarizes with counseling test instruments.

COUN 502. Research Tools and Methodology: Qualitative. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

COUN 568. Groups: Process and Practice. 3 Units.
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. Educational Psychology. 3 Units.
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.

COUN 575. Counseling Theory and Applications. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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. 3-9 Units.
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.

COUN 681. School Counseling Practicum and Seminar. 1 Unit.
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 Unit.
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. 2 Units.
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 Units.
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. Systemic Approaches to Counseling and Psychotherapy. 2 Units.
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 694. Directed Study: Counseling. 1-4 Units.
Directed study in counseling.

COUN 781. School Counseling Field Experience (PPS). 4 Units.
Requires successful completion and evaluation of 200 hours of counseling activities supervised by a PPS-credentialed school counselor at a public school site. Students may continue an on-going field experience registration over a period of five quarters, with an In Progress (IP) notation until the fifth quarter, which must be graded as Satisfactory (S) or Unsatisfactory (U).

COUN 782. School Counseling Field Experience (PPS). 4 Units.
Requires successful completion and evaluation of 200 hours of counseling activities supervised by a PPS-credentialed school counselor at a public school site. Students may continue an on-going field experience registration over a period of five quarters, with an In Progress (IP) notation until the fifth quarter, which must be graded as Satisfactory (S) or Unsatisfactory (U).

COUN 783. School Counseling Field Experience (PPS). 4 Units.
Requires successful completion and evaluation of 200 hours of counseling activities supervised by a PPS-credentialed school counselor at a public school site. Students may continue an on-going field experience registration over a period of five quarters, with an In Progress (IP) notation until the fifth quarter, which must be graded as Satisfactory (S) or Unsatisfactory (U).

COUN 784. School Counseling Field Experience. 3 Units.
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 Units.
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 Units.
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 (LPCC). 3 Units.
Requires successful completion and evaluation of 150 hours--at least 100 of which must be supervised, face-to-face clinical counseling supported by a minimum of 50 hours involving supervision, reporting, documentation, and other counseling-related activities. Students may continue an on-going field experience registration over a period of five quarters, with an In Progress notation (IP) until the fifth quarter, which must be graded as Satisfactory (S) or Unsatisfactory (U).

COUN 792. Clinical Counseling Field Experience (LPCC). 3 Units.
Requires successful completion and evaluation of 150 hours--at least 100 of which must be supervised, face-to-face clinical counseling supported by a minimum of 50 hours involving supervision, reporting, documentation, and other counseling-related activities. Students may continue an ongoing field experience registration over a period of five quarters, with an In Progress notation (IP) until the fifth quarter, which must be graded as Satisfactory (S) or Unsatisfactory (U).

COUN 793. Clinical Counseling Field Experience (LPCC). 3 Units.
Requires successful completion and evaluation of 150 hours--at least 100 of which must be supervised, face-to-face clinical counseling supported by a minimum of 50 hours involving supervision, reporting, documentation, or other counseling-related activities. Students may continue an on-going field experience registration over a period of five quarters, with an In Progress (IP) notation until the fifth quarter, which must be graded as Satisfactory (S) or Unsatisfactory (U).

Criminal Justice (CRMJ)

Courses

CRMJ 515. Crime and Society. 3 Units.
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 Units.
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 Units.
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. Expert Testimony: Procedure and Practice. 2 Units.
Familiarizes students with judicial procedure, and provides opportunity in a simulated trial setting for them to practice testifying as expert witnesses.

CRMJ 520. Restorative Justice. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Behavioral Health.

CRMJ 757A. Professional Practicum and Seminar. 3 Units.
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 Units.
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 Units.
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 Units.
Experiential learning in advanced criminal justice practice. Students must satisfactorily complete 200 practicum hours and 20 hours of concurrent seminar.

Dental Anesthesiology (ANDN)

Courses

ANDN 314. Dental Anesthesia: Local Anesthesia and Inhalation Sedation. 4 Units.
A philosophy of patient management, including use of local anesthetics and nitrous oxide/oxygen sedation, as well as the physiological and psychological aspects of pain and anxiety. Covers the history of anesthesia, patient evaluation, pharmacology armamentarium and complications regarding use of these agents, and management of office emergencies. Students practice local anesthetic injections and administer nitrous oxide/oxygen to each other.

ANDN 521. Principles of Medicine, Physical Diagnosis, and Hospital Protocol. 1 Unit.
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.

ANDN 547. Anesthesia Grand Rounds. 1 Unit.
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.

ANDN 549. Contemporary Anesthesia. 1 Unit.
Presents current concepts, practice, and controversies in general anesthesia. Reviews textbook chapters on a weekly basis during the Fall and Winter quarters.

ANDN 604. Anesthesia Literature Review. 1 Unit.
Weekly session reviews current anesthesia literature.

ANDN 624. Intravenous Conscious Sedation. 4 Units.
Reviews physiology, pathophysiology, pharmacology, monitoring airway management, and potential emergencies associated with the implementation of intravenous conscious sedation in the dental office.

ANDN 652. Introduction to General Anesthesia. 1 Unit.
Focuses on rapid acquisition of basic knowledge of the important elements of general anesthesia by new anesthesia residents in their first month of training.

ANDN 654. Practice Teaching in Anesthesia. 1 Unit.
Provides opportunity for second-year residents to participate in the teaching of anesthesia-related topics to first-year residents.

ANDN 674. Crisis Management in Anesthesia. 0.5 Units.
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.

ANDN 696. Scholarly Activity in Dental Anesthesiology. 1 Unit.
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.

ANDN 697A. Research. 1 Unit.
Student identifies a research project, prepares a protocol, and obtains approval for the protocol. Multiple registrations may be needed to complete these research activities.

ANDN 697B. Research. 1 Unit.
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.

ANDN 697C. Research. 1 Unit.
Resident completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

ANDN 746. General Anesthesia. 10 Units.
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.

ANDN 751. Dental Anesthesia: Local Anesthesia and Inhalation Sedation. 4 Units.
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.

ANDN 801. Dental Anesthesia: Advanced Topics. 2 Units.
Theory of general anesthesia. Hospital dentistry, patient evaluation, medical consultations. Reviews local anesthesia and introduces additional techniques of pain and anxiety control.

Dental Educational Services (DNES)

Courses

DNES 200. Curricular Practical Training. 0 Units.
Presents opportunities for service learning in different environments. Increases students' awareness of the importance of oral health education and professional practice and, in the process, gives them insight into different cultural and socioeconomic conditions. Students develop an understanding of LLUSD service learning heritage and the role they play in promoting the healing and teaching ministry of Jesus Christ to their community.

DNES 305. Etiology and Management of Dental Caries. 2 Units.
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 400. Interprofessional Laboratory Experience. 0 Units.
An interprofessional laboratory experience that allows dental and dental hygiene students to interact, communicate, and problem solve in a simulated clinical setting with students from other disciplines.

DNES 500. Curricular Practical Training. 0 Units.
Presents opportunities for service learning in different environments. Develops in students an increased awareness of the importance of oral health education and professional practice and, in the process, provides insights into different cultural and socioeconomic conditions. Develops students' understanding of LLUSD service learning heritage and the role they play promoting the healing and teaching ministry of Jesus Christ to their community.

DNES 504. Curricular Practical Training for IDP. 0 Units.
Presents opportunities for service learning in different environments. Develops an increased awareness of the importance of oral health education and professional practice and, in the process, provides insights into different cultural and socioeconomic conditions. Develops students' understanding of LLUSD service learning heritage and the role they play promoting the healing and teaching ministry of Jesus Christ to their community.

DNES 700. Orientation to Tooth Morphology. 2 Units.
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 Units.
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 Units.
Introduces students to individual, professional, and practical issues confronted by the dentist as a member of the health professions. Topics include understanding human behavior, as well as maladaptive behaviors; developing coping skills and a professional perspective; and managing stress.

DNES 708. Introduction to the Dental Profession. 1 Unit.
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 Unit.
Introduces students to the skills required for communication in a health-care environment. Topics include basic communication skills, problem-solving strategies, patient-provider communication, and communication with special needs populations (e.g., pediatric patients).

DNES 789. National Board Part I Review. 2 Units.
Reviews basic and preclinical sciences to prepare students for the National Dental Board Examination Part I. An IP will be assigned at the end of the course if the student has not successfully passed the Part I examination.

DNES 794. Public Health Dentistry. 2 Units.
Introduces community dentistry, oral epidemiology, public health programs, preventive dentistry, health education, and volunteer programs.

DNES 800. Interprofessional Laboratory Experience. 0 Units.
An interprofessional laboratory experience that allows dental and dental hygiene students to interact, communicate, and problem solve in a simulated clinical setting with students from other disciplines.

DNES 804. Applied Statistics. 2 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 Unit.
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 Unit.
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 Units.
Addresses statutes, regulations, and case law that govern the practice of dentistry.

DNES 889. National Board Part II Review. 2 Units.
Reviews basic and clinical sciences and their application in case-based testing format to prepare students for National Dental Board Examination Part II. An IP will be assigned at the end of the course if the student has not successfully passed the Part II examination.

Dental Hygiene (DNHY)

Courses

DNHY 216. Oral Health and Preventive Dentistry. 2 Units.
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 Units.
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 Units.
Fieldwork in local schools and the community.

DNHY 290. Research Design and Biostatistics. 3 Units.
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 Units.
Materials and equipment used in dentistry. Practice in the manipulation and use of common materials. Includes a laboratory component.

DNHY 305. Oral Anatomy Lecture. 2 Units.
Anatomy of the teeth and surrounding tissues.

DNHY 305L. Oral Anatomy Laboratory. 1 Unit.
Laboratory for DNHY 305, Oral Anatomy Lecture.

DNHY 309. Radiology I. 3 Units.
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. 3 Units.
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. Includes laboratory component.

DNHY 321. Preclinical Dental Hygiene I Lecture. 2 Units.
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 Units.
Laboratory course for DNHY 321, Preclinical Dental Hygiene I.

DNHY 322. Preclinical Dental Hygiene II Lecture. 2 Units.
Continues DNHY 321.

DNHY 322L. Preclinical Dental Hygiene II Laboratory. 2 Units.
Laboratory course for DNHY 322, Preclinical Dental Hygiene II Laboratory.

DNHY 323. Preclinical Dental Hygiene III. 2 Units.
Continues DNHY 322.

DNHY 323L. Preclinical Laboratory. 1 Unit.

DNHY 328. Dental Hygiene Portfolio Practicum. 1 Unit.
Student develops a capstone project to show evidence of personal growth and success in the dental hygiene core competencies.

DNHY 375. Dental Hygiene Clinic. 1 Unit.
Clinical application of skills and techniques of dental hygiene. Prophylaxes on pediatric and adult patients.

DNHY 376. Dental Hygiene Clinic. 4 Units.
Continues DNHY 375.

DNHY 380. Medically Compromised Patients. 2 Units.
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 Units.
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. 2 Units.
Continues DNHY 381. Emphasizes application through the use of case studies.

DNHY 390. Introductory Statistics. 2 Units.
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 Units.
An overview of the basic principles and practice of effective public health and education grant writing. Introduces students to the processes, structures, factors, and essential skills required to develop competitive proposals. Familiarizes students with key elements in proposal preparation; differentiates foundation (private) and government (public) grants and grant making; identifies prospective funding sources; and engages students in the grant review process.

DNHY 392. Grant Writing II. 2 Units.
Continues DNHY 391, Introduction to Grant Writing I. Guides students through the development of a private (foundation) grant proposal, including project need and evaluation, design, and budget preparation. Familiarizes students with the key elements of preparing public (federal) grant applications.

DNHY 400. Oral Disease Management. 2 Units.
An overview of the role of the oral health professional in the management of individuals with oral disease. Explores the process of care, with a focus on the evidence-based pathophysiology of common oral disease conditions--such as, dental caries, periodontal diseases, and oral pathology.

DNHY 405. Introduction to Periodontics. 2 Units.
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 Unit.
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 Units.
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.

DNHY 409. Jurisprudence and Practice Management. 2 Units.
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.

DNHY 410. Cultural Competency in Health Care. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Personal finance topics, including credit, taxes, insurance, real estate, budgeting, housing, and inflation.

DNHY 415. Applied Nutrition. 2 Units.
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 Units.
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 Units.
Principles and practices involved in teaching dental public health. Fieldwork in local schools and community. Methods and practice of professional presentation.

DNHY 419. Essentials of Public Health for Dental Hygienists. 3 Units.
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 Units.
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. Inprogress (IP) given until completion of all units for this course.

DNHY 422. Research II. 2 Units.
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. In progress (IP) given until completion of all units for this course.

DNHY 425. Educational Psychology for Health Professionals. 3 Units.
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 Units.
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 Units.
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 Units.
Studies advanced periodontal topics and special problems related to periodontal therapy.

DNHY 436. Ethical and Legal Principles in Education. 2 Units.
Discusses theoretical and practical applications of the ethical and legal principles and issues encountered in an educational setting.

DNHY 437. Ethical and Legal Principles in Public Health for the Dental Hygienist. 2 Units.
Discusses theoretical and practical applications of the ethical and legal principles and issues encountered in public health settings.

DNHY 441. Principles of Education I. 3 Units.
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 Units.
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.

DNHY 444. Teaching Practicum. 3 Units.
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 Units.
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 Units.
Develops the student-teacher¹s 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 Unit.
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 Unit.
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 Unit.
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 Unit.
Topics and issues related to clinical competency. Presentation of advanced patient-care plans.

DNHY 464. Evidence-based Decision Making. 2 Units.
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 Units.
Integrates all components of oral health care into the clinical treatment of patients.

DNHY 476. Dental Hygiene Clinic II. 4 Units.
Integrates all components of oral health care into the clinical treatment of patients.

DNHY 477. Dental Hygiene Clinic III. 4 Units.
Integrates all components of oral health care into the clinical treatment of patients.

DNHY 478. Advanced Clinical Concepts. 2 Units.
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 495. Dental Hygiene National Board Preparation. 1,2 Unit.
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 directly related to concurrent test-taking skill workshops based on standardized testing evidence for success.

DNHY 498. Dental Hygiene Directed Study. 1-10 Units.
Independent research on problems/topics related to dentistry, dental hygiene, and dental education; collaboration with researcher/faculty member. Written report required.

DNHY 499. Research Writing. 2 Units.
Elective course for students wishing to write their research study for submission to professional journals for possible publication.

Dermatology (DERM)

Courses

DERM 891. Dermatology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of dermatology, including research.

Dietetics (DTCS)

Courses

DTCS 300. Contemporary Nutrition. 3 Units.
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 Units.
Fundamentals of normal nutrition. Carbohydrates, proteins, fats, vitamins, minerals; their roles in human metabolism. Introduction to nutrition in the life cycle. Per week: lecture three hours.

DTCS 302. Food Selection and Presentation. 5 Units.
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 three hours, practicum six hours. Laboratory fee.

DTCS 303. The Art of Food Presentation. 3 Units.
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 two hours, practicum three hours. Laboratory fee.

DTCS 304. Community Nutrition. 4 Units.
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 two hours, practicum six hours.

DTCS 305. Professional Issues in Nutrition and Dietetics. 1 Unit.
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 Units.
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 Units.
Nutrition intervention in the prevention and treatment of disease in the clinical setting.

DTCS 321. Nutrition and Human Metabolism. 4 Units.
Nutritional requirements and metabolism of essential nutrients for the human organism at the cellular level. Focuses on macro- and micronutrients metabolism. Per week: lecture four hours.

DTCS 339. Life-Cycle Nutrition. 2 Units.
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 one hour, practicum three hours.

DTCS 341. Introduction to Clinical Nutrition. 5 Units.
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 women¹s health issues, geriatrics, anemia, food allergies, vegetarian diets, nutrition quackery, obesity, eating disorders, and ethnic dietary patterns. Per week: lecture three hours, practicum six hours.

DTCS 342. Medical Nutrition Therapy I. 5 Units.
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 three hours, practicum six hours.

DTCS 343. Medical Nutrition Therapy II. 5 Units.
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 3 hours, practicum 6 hours.

DTCS 371. Quantity Food Purchasing, Production, and Service. 5 Units.
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 two hours, practicum nine hours.

DTCS 372. Food Systems Organization and Management. 4 Units.
Studies food-service systems. Effective utilization of resources within the food system. Computer application in food-systems management. Per week: lecture two hours, practicum six hours.

DTCS 395. Nutrition and Dietetics Practicum. 12 Units.
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 Units.
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 Units.
Supervised professional practice affiliation for community nutrition.

DTCS 405. Senior Seminar. 1 Unit.
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 Units.
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 Units.
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 Units.
Supervised professional practice in public health nutrition. Six units (200 hours) in the summer term. Includes documentation, evaluation, and review.

DTCS 428. Clinical Nutrition Affiliation. 6 Units.
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 Units.
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 two hours, practicum three hours.

DTCS 445. Nutrition Care Management. 4 Units.
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 Units.
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 Units.
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 two hours, practicum three hours.

DTCS 461. Food Science. 4 Units.
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 four hours, laboratory three hours. Laboratory fee.

DTCS 473. Medical Nutrition-Therapy Affiliation. 6,12 Units.
Student applies knowledge and skills in clinical facilities as s/he works with a staff dietitian and confers with supervisor to develop and enhance advanced-level professional competence. Student completes a major project relating to medical nutrition therapy. For 6 units, minimum of five weeks (200 clock hours); for 12 units, minimum of ten weeks (400 clock hours). May take more than once for credit.

DTCS 474. Food Systems-Management Affiliation. 3 Units.
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 three hours, practicum three hours.

DTCS 476. Exercise Physiology in Medical-Nutrition Therapy. 3 Units.
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.

DTCS 479. Food-Systems Management Affiliation. 12 Units.
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 Unit.
Experience in nutrition and dietetics research, including hypothetical-formulation research methods, data collection, and presentation of findings. Per week: practicum three hours.

DTCS 497. Advanced Clinical Experience. 1-12 Units.
Advanced clinical experience in selected areas of professional dietetic practice.

DTCS 499. Nutrition and Dietetics Independent Study. 1-5 Units.
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 504. Metabolism of Nutrients. 5 Units.
The study of normal metabolism of carbohydrates, lipids, and proteins. Includes vitamin and mineral involvement, as well as metabolic changes due to the presence of various hormonal states.

DTCS 505. Graduate Seminar--Portfolio. 2 Units.
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 Unit.
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 510. Public Health Nutrition Issues and Policies. 3 Units.
Nutrition policies and interventions that lead to prevention of and care for diseases prevalent in the community. Genetic and environmental influences related to nutrition health studies.

DTCS 517. Carbohydrates and Lipids. 4 Units.
A comprehensive study of the sources, metabolism, and function of carbohydrates and lipid--including their influence on human health and disease states.

DTCS 518. Proteins, Vitamins and Minerals. 4 Units.
A comprehensive study of the sources, metabolism, and function of proteins, vitamins, and minerals--including their influence on human health and disease states.

DTCS 519. Functional Foods and Phytochemicals. 2 Units.
Study of phytochemicals and their impact on treatment and prevention of diseases and their role in health maintenance.

DTCS 525. Nutrition Care Marketing. 3 Units.
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 Units.
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 534. Pediatric Medical Nutrition Therapy. 3 Units.
Management of the nutrition needs of the pediatric population. Focuses on growth and development in the normal and abnormal child. Addresses the biochemical and physiological conditions that necessitate dietary modifications in the clinical management of the patient. Per week: lecture 2 hours, practicum 3 hours.

DTCS 536. Health Care Financial Management. 3 Units.
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 542. Nutrient Delivery, Education, and Counseling. 2 Units.
Techniques and models used in the nutrition intervention step of the nutrition care process. Investigates food/nutrient provision, education (assessment to evaluation), counseling (theoretical basis/approach and strategies); as well as coordination of nutrition care.

DTCS 544. Medical Nutrition Therapy II. 5 Units.
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. Graduate level project will be required. Per week: lecture 3 hours, practicum 6 hours.

DTCS 545. Nutrition Care Management. 4 Units.
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 Units.
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 564. Topics in Vegetarian Nutrition. 2-3 Units.
A look at the origins and growth of the vegetarian movement, exploring the various types of vegetarian diets and their impact on the health of the human body and the environment. Studies menu planning guidelines for states of health and disease. A major paper on one of the vegetarian topics required for the additional unit.

DTCS 566. Food Chemistry and Experimental Foods. 4 Units.
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 Units.
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 three hours.

DTCS 575. Food Systems Management. 4 Units.
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 Units.
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 Units.
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 584. Emerging Nutrition Topics. 3 Units.
Investigates trends and fad diets in the public arena. Review of current nutrition topics in popular literature with evaluation of health implications using peer-reviewed evidence.

DTCS 585. Operations Management in Food and Nutrition Services. 4 Units.
Develops conceptual skills in operation of a food or nutrition service using quantitative decision making, forecasting, planning tools, development of quality standards and control mechanisms, job design, layout, work measurement, inventory control, and information systems.

DTCS 589. Capstone Course in Nutrition and Dietetics. 3 Units.
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 Units.
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 and Dietetics Independent Study. 1-5 Units.
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 605. Nutrition Seminar. 1 Unit.
Study and discussion of current topics in nutrition. Requires a major paper, including meta-analysis of literature and presentation of a nutrition topic.

DTCS 694. Research. 1-8 Units.
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.

DTCS 696. Nutrition Care-Management Project. 6 Units.
Develops a nutrition care-management project.

DTCS 777. Food Systems Management Affiliation. 6 Units.
Five weeks (200 hours) of supervised experience in food systems management in health care or school food service. May be repeated for additional credit.

DTCS 778. Clinical Nutrition Affiliation. 6,12 Units.
Student applies knowledge and skills in clinical facilities as s/he works with a staff dietitian and confers with supervisor to develop and enhance advanced-level professional competence. Student completes a major project relating to medical nutrition therapy. For 6 units, minimum of five weeks (200 clock hours); for 12 units, minimum of ten weeks (400 clock hours). May be repeated for additional credit.

DTCS 795. Nutrition and Dietetics Graduate Practicum. 12 Units.
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. May be repeated for additional units. Ten weeks (400 clock hours) during the summer term.

Earth System Science (ESSC)

Courses

ESSC 541. Remote Sensing in the Social, Health, and Biosciences. 4 Units.
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.

Emergency Medical Care (EMMC)

Courses

EMMC 217. Community Emergency Response Team I. 1 Unit.
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 308. Pharmacology. 3 Units.
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 Units.
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 Units.
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 Units.
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.

EMMC 317. Community Emergency Response Team Development and Instruction. 2 Units.
Development of sustainable community emergency response team (CERT) programs. Review of core CERT knowledge and competencies, and instructional techniques in disaster preparedness, fire suppression, disaster medical care, search and rescue, crisis psychology, response to terrorism, and team organization and administration. Discussion of adult learning theories and skills instruction. Meets federal/state criteria to become a CERT trainer.

EMMC 325. Current Issues in Emergency Medical Care. 2 Units.
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 Units.
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 Units.
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 Unit.
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. 0.5 Units.
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. Repeated registration required to fulfill the total units.

EMMC 425. Instruction and Curriculum Design in Emergency Services. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. 3 Units.
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. 3 Units.
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 Units.
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 Units.
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.

EMMC 453. Seminars in EMS Management II. 2 Units.
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.

EMMC 464. Ethics and Leadership in Emergency Services. 2 Units.
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 Units.
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 Units.
Continues project developed in EMMC 471.

EMMC 484. Legal Issues in Health Care. 2 Units.
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 Unit.
Discusses issues of professionalism, portfolio development and refinement, short- and long-term goal setting, and development of resume/curriculum vitae.

EMMC 498. Special Topics. 1-4 Units.
Special topics in emergency medical care.

EMMC 499. Special Topics Laboratory/Clinical Practicum. 1-8 Units.
Special topics in emergency medical care laboratory and clinical practicum.

Emergency Medicine (EMDN)

Courses

EMDN 821. Emergency Medicine Clerkship. 1.5-3 Units.
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. 1.5-27 Units.
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.

Endodontics (ENDN)

Courses

ENDN 534. Endodontic Treatment Conference. 1-2 Units.
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 Units.
Comprehensive study of various aspects of endodontics. Repeated registrations required to fulfill the total units.

ENDN 604. Literature Seminar in Endodontics. 2 Units.
Reviews literature pertaining to the principles and practice of endodontics. Repeated registrations required to fulfill total units.

ENDN 654. Practice Teaching in Endodontics. 1 Unit.
Supervised teaching in the endodontic preclinical laboratory and predoctoral clinic. Repeated registrations required to fulfill total units.

ENDN 697A. Research. 1 Unit.
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 Unit.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

ENDN 697C. Research. 1 Unit.
Student completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

ENDN 698. Thesis. 1 Unit.

ENDN 725. Clinical Practice in Endodontics. 1-8 Units.
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 Unit.
Clinical experience in the diagnosis and treatment of patients who may benefit from implant dentistry therapy. Repeated registrations required to complete total units.

ENDN 831. Endodontics I. 1 Unit.
Didactic course provides foundational knowledge to prepare the student to manage patients with diseases of pulpal origin.

ENDN 832. Endodontics II. 2 Units.
Preliminary laboratory course that introduces basic skills necessary to perform endodontic treatment on permanent teeth with uncomplicated root canal systems. IDP students complete 2 units over the D3 Spring and Summer quarters before a final grade is given.

ENDN 834. Endodontics III. 1 Unit.
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 Unit.
Secondary laboratory course that reinforces prior basic skills taught in ENDN 832, and introduces additional skills necessary to perform endodontic treatment on uncomplicated permanent teeth using advances in technology.

ENDN 875. Endodontics Clinic. 1 Unit.
Endodontic clinical experience provides students with the opportunity to manage patients with endodontic disease through diagnosis, treatment of uncomplicated endodontic conditions, referral of complicated problems, and evaluation of treatment outcomes.

English (ENGL)

Courses

ENGL 300. Writing Seminar for Health-Care Professionals. 2 Units.
Teaches students to develop the essay for research-oriented papers. Focuses on paragraph and essay development.

Environmental Health (ENVH)

Courses

ENVH 414. Introduction to Environmental Health. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

ENVH 438. Introduction to Web GIS. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

ENVH 521. Cartography and Map Design. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
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.

ENVH 535. Integration of Geospatial Data in GIS. 2 Units.
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 Units.
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 Units.
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. 3,3 Units.
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 Units.
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.

ENVH 546. Introduction to Spatial Epidemiology. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

ENVH 567. Hazardous Materials and Solid-waste Management. 3 Units.
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.

ENVH 568. Water Quality Assurance. 3 Units.
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.

ENVH 569. Environmental Sampling and Analysis. 4 Units.
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.

ENVH 575. Indoor Air Quality. 3 Units.
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.

ENVH 578. Principles of Occupational Health. 3 Units.
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 Units.
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 Units.

ENVH 585. Institutional Environmental Health. 3 Units.
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 Units.
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 Units.
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.

ENVH 589. Environmental Risk Assessment. 3 Units.
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 Unit.
Areas of current interest. May be repeated for additional credit.

ENVH 694. Research. 1-14 Units.
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.

ENVH 696. Directed Study/Special Project. 1-4 Units.
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.

ENVH 698. Laboratory. 1-6 Units.
Individual and/or group arrangements for selected students to participate in a structured laboratory experience in specified areas of environmental health.

ENVH 699. Applied Research. 2 Units.
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.

ENVH 797. MIP Residency in Environmental Health. 12 Units.
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 Units.
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.

ENVH 798B. Field Practicum. 12 Units.
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.

Environmental Sciences (ENVS)

Courses

ENVS 401. Earth System Science and Global Change. 4 Units.
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 434. The Environmental Context of Community Health. 3 Units.
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 Units.
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 Units.
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. 0.5 Units.
Selected topics dealing with recent developments. May be repeated for additional credit.

ENVS 487. Internship in Environmental Sciences. 4,8 Units.
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.

ENVS 488. Topics in Environmental Sciences. 1-4 Units.
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 Units.
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 Units.
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 Units.
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)

Courses

EPDM 414. Introduction to Epidemiology. 3 Units.
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.

EPDM 505. Principles of Epidemiology MBA. 3 Units.
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.

EPDM 509. Principles of Epidemiology. 3 Units.
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 identify and control confounding; methods to improve validity, information, and selection bias; methods to assess causation, evaluate statistical significance, evaluate screening for latent disease, and interpret results. Laboratory included.

EPDM 510. Epidemiologic Methods I. 3 Units.
First course in a three-course epidemiologic methods sequence. Covers causation, study design, validity, confounding, and interaction. Includes causal inference; basic study designs (descriptive and analytic designs, age-cohort-period effects, ecologic studies); disease frequency measures; exposure-disease associations measures, validity (information bias, selection bias, internal and external validity, duration ratio bias, point prevalence complement ratio bias, bias in screening, publication bias); methods for correcting for bias (selection ratios, correction for measurement error, introduction to calibration studies); methods of assessment of validity and reliability (i.e., correlations, Bland-Altman plot, intraclass correlation, coefficient of variability, percent agreement, kappa, sensitivity analysis); advanced topics on confounding, interaction, stratification, and adjustment. Includes problem sets, analysis of epidemiologic data (SAS & R), and case studies based on reports from epidemiology journals.

EPDM 511. Epidemiologic Methods II. 3 Units.
Second course in the epidemiologic methods sequence. Advanced study designs and multivariable modeling of exposure-disease relationships. Focuses on hybrid designs (nested case control, case cohort, and case crossover) and incomplete designs (proportion, ecologic, spatial studies). Multivariable modeling modules introduce generalized linear models (emphasizing linear, logistic, and Poisson) and maximum likelihood theory. Model-building approach includes causal diagrams, methods of variable selection and specification, testing for confounding and interaction, and trend testing. Multivariable modeling of prospective cohort study data with Cox proportional hazard modeling includes coverage of survival analysis concepts (nonparametric survival analysis, life tables, hazard and survival functions). Models nonproportional hazards in a survival analysis. Includes exercises that focus on writing up and presenting the findings from multivariable modeling for submission to biomedical journals; as well as problem sets, data analysis (SAS & R), case studies based on reports from the epidemiology journals, and written reports.

EPDM 512. Epidemiologic Methods III. 3 Units.
Third course in the epidemiologic methods sequence. Uses case studies of material from the preceding courses to provide experience analyzing epidemiologic data. Covers advanced methods of epidemiologic investigation, including advanced causal inference, spline regression, measurement error correction, multiple imputation, complex survey design and analysis (stratified multistage cluster designs), and meta-analysis. Final module includes power and sample size calculations for the regression models covered during the course sequence. Includes readings (textbook and recent journal articles on epidemiologic methods); data analysis in a computer laboratory setting using SAS, R, and SUDAAN; and case studies based on reports from epidemiology journals.

EPDM 515. Clinical Trials. 3 Units.
Theory and practice of intervention studies, including community and clinical trials. Course includes components of a trial protocol, different types of trial design, analysis methods, and ethical considerations.

EPDM 525. Special Topics in Epidemiology. 1-4 Units.
Lecture and discussion on a current topic in epidemiology. May be repeated for a maximum of 4 units applicable to degree program.

EPDM 528. Applied Epidemiology and Clinical Preventive Services. 3 Units.
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.

EPDM 534. Epidemiology of Maternal-Child Health. 3 Units.
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.

EPDM 544. Epidemiology of Infectious Disease. 3 Units.
Introduces the fundamental epidemiologic concepts, methods, and principles in the study of infectious diseases of public health significance. Emphasizes "old" diseases that remain real or potential problems; diseases with changing ecology due to the development of drug/vector resistance and advances in treatment, immunizations, and other preventive/control measures; and emerging and re-emerging diseases that have increasingly become problems through the evolution of modern society. Discusses the role of surveillance systems in infection control in varied settings. Explores the potential of developing appropriate public health interventions in the context of prevention, control, and possibly eradication programs.

EPDM 555. Epidemiologic Methods in Outcomes Research and Continuous Quality Improvement. 3 Units.
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.

EPDM 556. Epidemiologic Methods in Patient Safety Research. 3 Units.
Utilizes patient safety videos, case-based small- and large-group discussions, interactive exercises, and selected readings to focus on concepts and research related to the importance of patient safety, the human and financial cost of medical error around the world, and basics of the psychology of error. Guides student in the process of conducting patient safety research: selection of most appropriate research method, choice of tools that complement the chosen research method, identification of available resources, and consideration of research protocols. Increases awareness of the scope and magnitude of the problem of patient safety in healthcare, stimulates discussion relative to specific problems, and emphasizes key patient safety concepts. Focuses on the human factor in patient safety and the importance of interprofessional teamwork in developing a culture of safety within health-care organizations. Emphasizes root cause analysis of safety problems--including human factors, malfunctioning equipment, and unsafe practices and protocols. Discusses the importance of disclosing errors and apologizing to parties involved, as appropriate.

EPDM 564. Epidemiology of Chronic Diseases. 3 Units.
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.

EPDM 565. Epidemiology of Cancer. 3 Units.
Critically reviews epidemiology of the major causes of cancer occurrence and 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, 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 between environmental and genetic characteristics in cancer causation.

EPDM 566. Epidemiology of Cardiovascular Disease. 3 Units.
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.

EPDM 567. Epidemiology of Aging. 3 Units.
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.

EPDM 568. International Epidemiology. 2 Units.
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.

EPDM 588. Environmental and Occupational Epidemiology. 3 Units.
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.

EPDM 605. Seminar in Epidemiology. 1 Unit.
Presentations and discussions of topics of current interest in epidemiology and statistics. 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 Autumn, Winter, and Spring quarters. Doctoral students only.

EPDM 625. Special Topics in Epidemiology. 1-3 Units.
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.

EPDM 635A. Epidemiological Studies of Seventh-day Adventists A. 1 Unit.
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.

EPDM 635B. Epidemiological Studies of Seventh-day Adventists B. 1 Unit.
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.

EPDM 682A. Seminar in Preventive Medicine. 1 Unit.
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 Unit.
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 682C. Seminar in Preventive Medicine. 1 Unit.
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 682D. Seminar in Preventive Medicine. 1 Unit.
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 Unit.
Includes advanced concepts in epidemiology for the public health professional. Provides an opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

EPDM 683B. Preventive Medicine in Public Health. 1 Unit.
Includes advanced concepts in epidemiology for the public health professional. Provides an opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

EPDM 683C. Preventive Medicine in Public Health. 1 Unit.
Includes advanced concepts in epidemiology for the public health professional. Provides an opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

EPDM 683D. Preventive Medicine in Public Health. 1 Unit.
Includes advanced concepts in epidemiology for the public health professional. Provides an opportunity for development of leadership and presentation skills. Restricted to preventive medicine residents.

EPDM 685. Preliminary Research Experience. 2 Units.
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 Units.
Individual advice on project design, data collection, analysis, and evaluation. Restricted to School of Public Health students and staff.

EPDM 694. Research. 1-14 Units.
Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required. Doctoral students only.

EPDM 696. Directed Study/Special Project. 1-4 Units.
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.

EPDM 698. Dissertation. 1-14 Units.
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 Unit.
Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

EPDM 699B. Applied Research. 1 Unit.
Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

EPDM 699C. Applied Research. 1 Unit.
Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

EPDM 699D. Applied Research. 1 Unit.
Independent epidemiologic research. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

EPDM 798. Field Practicum. 1-4 Units.
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.

Family Medicine (FMDN)

Courses

FMDN 599. Directed Elective Study. 1.5-18 Units.

FMDN 701. Family Medicine Clerkship. 1.5-6 Units.
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 Units.
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). 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of family medicine, such as outpatient clinics, palliative medicine, sports medicine, research, etc.

Family Studies (FMST)

Courses

FMST 504. Advanced Family Studies. 4 Units.
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 Units.
Analyzes current social research methods. Practice in the use of techniques. Scientific method.

FMST 506. Advanced Social Research Methods. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Discusses theory, techniques, and processes in the teaching of MFT, including an examination of didactic and experiential techniques.

FMST 524. Family Resource Management. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Systematic comparative analysis of the historical development, theoretical perspectives, types of programs, and research in family-life studies.

FMST 577. Family Life Workshop. 2 Units.

FMST 601. Statistics I. 4 Units.
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 nonparametic alternatives.

FMST 602. Statistics II. 4 Units.
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.

FMST 603. Statistics III. 4 Units.
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.

FMST 604. Advanced Qualitative Methods. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Perceptions, needs, challenges, and opportunities during the periods of adult singleness in the life cycle.

FMST 668. Qualitative Research Practicum. 2 Units.
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 Unit.
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 Units.

FMST 695. Internship in Family Studies. 1-4 Units.

FMST 696A. Advanced Topics in Family Studies: Parenting. 3 Units.
Directed study in parenting.

FMST 696B. Advanced Topics in Family Studies: Family Resource Management. 3 Units.
Directed study in family resource management.

FMST 696C. Advanced Topics in Family Studies: Family Life Education. 3 Units.
Directed study in family life education.

FMST 696D. Advanced Topics in Family Studies: Child Development in Family Context. 3 Units.
Directed study in child development in family context.

FMST 696E. Advanced Topics in Family Studies: Divorce and Remarriage. 3 Units.
Directed study in divorce and remarriage.

FMST 696F. Advanced Topics in Family Studies: Marriage and the Family. 3 Units.
Directed study in marriage and the family.

FMST 697. Research. 1-6 Units.
Independent research relating to marital and family therapy, under the direction of a faculty advisor.

FMST 698. Project or Thesis. 3 Units.

FMST 699. Dissertation Research. 1-20 Units.
Completes independent research contributing to the field of family studies.

Geology (GEOL)

Courses

GEOL 126. Introduction to Field Geology. 2-3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Systematics, biology, stratigraphic distribution, and biogeography of fossil vertebrates.

GEOL 431. Geochemistry. 4 Units.
Chemical concepts and their geochemical applications in areas of interest in elementary geology.

GEOL 434. Introduction to GIS for the Natural Sciences (2). 2 Units.
Principles and practice of GIS data acquisition, data editing, map making, and geodatabase management. Recommended for students beginning a research project.

GEOL 435. GIS Spatial Analysis for the Natural Sciences (3). 3 Units.
Advanced analysis of GIS data; statistical analysis, geographic analysis of spatial data, and methods of displaying, editing, and modeling spatial data using ArcGIS and related GIS tools. Recommended for students who have research data in hand to analyze.

GEOL 437. Geophysics. 4 Units.
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.

GEOL 443. Historical Geology. 4 Units.
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 Units.
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 Units.
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 or longer field trip to specific sites in the western United States. Summer only.

GEOL 455. Modern Carbonate Depositional Systems. 3 Units.
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 Units.
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 Units.
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.

GEOL 465. Hydrogeology. 4 Units.
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 Units.
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 Units.
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. 0.5 Units.
Selected topics dealing with recent developments.

GEOL 486. Research and Experimental Design. 2 Units.
Concepts, methods, and tools of research--including experimental design and data analysis.

GEOL 487. Field Geology Studies. 1-6 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Original investigation and/or literature study pursued under the direction of a faculty member. May be repeated for additional credit.

GEOL 512. Invertebrate Paleontology. 4 Units.
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 three hours, plus one three-hour laboratory. Additional work required beyond GEOL 426.

GEOL 513. Vertebrate Paleontology. 4 Units.
Fossil vertebrates, with emphasis on the origins of major groups. Systematics, biology, and biogeography of ancient vertebrates. Per week: class three hours, plus one three-hour laboratory. Additional work required beyond GEOL 427.

GEOL 514. Paleobotany. 4 Units.
Fossil plants, their morphology, paleoecology, taphonomy, classification, and stratigraphic distribution. Analyzes floral trends in the fossil record. Per week: three class hours and one three-hour laboratory or field trip. Additional work required beyond GEOL 444.

GEOL 516. Sedimentology and Stratigraphy. 6 Units.
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. Additional work required beyond GEOL 416.

GEOL 517. Modern Carbonate Depositional Systems. 3 Units.
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 combines with field descriptions, mapping, analysis, and reports. Requires rigorous hiking and snorkeling in shallow water. Additional work required beyond GEOL 455.

GEOL 518. Earth Structure, Process, and History. 4 Units.
Study of geological processes and the resulting geological record. Introduces minerals and rocks, sedimentary and igneous processes, fossils, plate tectonics, geological history, and models of earth history. Student prepares a teaching module on the topic. Open only to students in the M.S. degree program in natural sciences. Per week: class three class hours, one three-hour laboratory or field trip.

GEOL 525. Paleopalynology. 4 Units.
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.

GEOL 526. Introduction to GIS for the Natural Sciences. 2 Units.
Principles and practice of GIS data acquisition, data editing, map making, and geodatabase management. Recommended for students beginning a research project.

GEOL 535. GIS Spatial Analysis for the Natural Sciences. 3 Units.
Advanced analysis of GIS data; statistical analysis, geographic analysis of spatial data, and methods of displaying, editing, and modeling spatial data using ArcGIS and related GIS tools. Recommended for students who have research data in hand to analyze.

GEOL 545. Taphonomy. 4 Units.
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 Units.
Fossilized traces produced by animal activity, such as tracks, burrows, feeding traces, etc. Two class hours per week.

GEOL 548. Field Seminar in Historical Geology. 4 Units.
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 or longer field trip to specific sites in the western United States. Summer only. Additional work required beyond GEOL 448.

GEOL 554. Limnogeology. 4 Units.
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 Units.
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. 3 Units.
Applies paleontologic, sedimentologic, and geochemical data and methods to interpretation of past sedimentary environments, with emphasis on organism-sediment relationships. Investigates as analogs processes, sediments, and organisms in modern depositional environments.

GEOL 557. Paleoenvironments Field Trip. 1 Unit.
Field experience intended as a follow up to GEOL 556 Paleoenvironments. Consists a ten-day field trip to selected locations representing a broad spectrum of sedimentary environments.

GEOL 558. Philosophy of Science. 4 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Geological and hydrogeological principles that apply to subsurface waste and contaminant characterization. Reviews rededication techniques and hazardous waste-disposal alternatives. Three class hours per week. Additional work required beyond GEOL 464.

GEOL 575. Hydrogeology. 4 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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. 0.5 Units.
Selected topics dealing with recent developments.

GEOL 616. Research and Experimental Design. 2 Units.
Concepts, methods, and tools of research--including experimental design and data analysis.

GEOL 617. Proposal Writing and Grantsmanship. 2 Units.
Skills and practice of effective proposal writing, and strategies for locating and obtaining research grants.

GEOL 618. Writing for Publication. 2 Units.
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 658. Advanced Philosophy of Science readings (2). 2 Units.
Reading and discussion of selected references in the philosophy of science, and the application of these concepts in the practice of scientific research and interpretation, including their influence on scientific study of origins. Best taken near the end of a student's graduate program. Two-hour class session per week.

GEOL 695. Special Projects in Geology. 1-4 Units.
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 Units.

GEOL 698. Thesis Research. 1-8 Units.
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 Units.
Credit for research and for writing the doctoral dissertation. Grade received does not indicate whether dissertation is completed and approved.

Gerontology (GERO)

Courses

GERO 515. Diversity and Aging. 3 Units.
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 Units.
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 Units.
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 Units.
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 654A. Therapeutic Interventions with Older Adults I. 3 Units.
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.

GERO 654B. Therapeutic Interventions with Older Adults II. 3 Units.
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.

GERO 687A. Field Practicum and Seminar in Gerontology. 3 Units.
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 Units.
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 Units.
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 Behavioral Health.

GERO 757A. Professional Practicum and Seminar. 3 Units.
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 Units.
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 Units.
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 Units.
Experiential learning in advanced gerontology practice. Students must satisfactorily complete 200 practicum hours and 20 hours of concurrent seminar.

Global Health (GLBH)

Courses

GLBH 205. Essentials of Microbiology. 3 Units.
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 Units.
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 Units.
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 Units.
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, and hospice care.

GLBH 517. Cultural Issues in Health Care. 3 Units.
Critical analysis of broad sociocultural and political forces that impact health and health-care access and delivery both domestically and internationally. Through a seminar-style learning environment, students increase their awareness of how culture informs the understanding and experience of health and illness. Introduces students to assessment of race relations and ethnocentric beliefs and attitudes that contribute to the gap between marginal populations and health-care providers, and that teach strategies of sociocultural change within the context of power and privilege.

GLBH 519. Principles of Disaster Management I. 3 Units.
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 Units.
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 Units.
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 Units.
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, socioeconomics, 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 Units.
Food-production systems and issues in agricultural development. Attitudes and approaches for rural development practitioners.

GLBH 543. Epidemiology of Infectious Disease Projects. 1 Unit.
Appropriate project/study or a comprehensive review of an infectious disease of major public health significance.

GLBH 544. Epidemiology of Infectious Disease. 3 Units.
Introduces the fundamental epidemiologic concepts, methods, and principles in the study of infectious diseases of public health significance. Emphasizes “old” diseases that remain real or potential problems; diseases with changing ecology due to the development of drug/vector resistance and advances in treatment, immunizations, and other preventive/control measures; and emerging and re-emerging diseases that have increasingly become problems through the evolution of modern society. Discusses the role of surveillance systems in infection control in varied settings. Explores the potential of developing appropriate public health interventions in the context of prevention, control, and possibly eradication programs.

GLBH 545. Integrated Community Development. 4 Units.
Analyzes issues, challenges, resources, and strategies in implementing and managing integrated community development and health projects. Focuses on basic development needs of rural and urban communities. Taught from the perspectives of anthropology, sociology, agriculture, economic development, and public health. The final course in the GLBH core curriculum. Restricted to students in the major.

GLBH 547. Refugee and Displaced Population Health. 3 Units.
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 Units.
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 Units.
Global epidemiological profile of women in terms of educational patterns, economic productivity, social status, and mortality and morbidity 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 Units.
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 Units.
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.

GLBH 557. Epidemiology of Disasters. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Utilizing an experiential, evidence-based model of learning and building on the global health competencies as defined by the Association of Schools of Public Health (ASPH), this three-part course series focuses on improving the health, safety, and well-being of all people in local and global settings by promoting wellness; preventing avoidable disease, disabilities, and deaths; and eliminating social and health disparities. Students conduct population-based analyses that include the assessment and examination of health determinants, practices, and solutions to improve the quality of life for all people--especially the vulnerable and disadvantaged. Emphasizes the basic framework within which global health is conducted; analyzes health problems at a macrolevel by conducting comprehensive social, epidemiological, and ecological assessments of basic issues that affect the health of families and individuals; and enhances understanding of current and future global threats to health.

GLBH 565. Interventions in Community Health and Development I. 3 Units.
Utilizing an experiential, evidence-based model of learning, and building on the public health competencies as defined by the Association of Schools of Public Health (ASPH), this three-part course series focuses on selected methodological techniques and skills applicable in the planning, implementation, and evaluation of primary health-care programs that serve to improve the health, safety, and well-being of all people in local and global settings by promoting wellness; preventing avoidable disease, disabilities, and deaths; and eliminating social and health disparities. Introduces the theoretical foundations and practical applications of program planning, implementation, and evaluation of sustainable public health programs. Students have an opportunity to practice these skills both in the classroom and in local community settings as part of their structured service learning projects. By the end of this course, students will demonstrate capacity to develop reciprocal, collaborative relationships with community and academic partners; use a program-planning model and create a program theory to guide in the process of assessing community needs; use social and behavioral theories/models to guide the creation of tools used to collect qualitative and quantitative data in identifying individual and group assets and needs; conduct systematic literature reviews; develop and present a project-specific, detailed implementation proposal both orally and in written format.

GLBH 566. Fundamentals of Community Health and Development II. 2 Units.
Utilizing an experiential, evidence-based model of learning, and building on the global health competencies as defined by the Association of Schools of Public Health (ASPH), this three-part course series focuses on improving the health, safety, and well-being of all people in local and global settings by promoting wellness; preventing avoidable disease, disabilities, and deaths; and eliminating social and health disparities. Students conduct population-based analyses that include assessment and examination of health determinants, practices, and solutions to improve the quality of life for all people--especially the vulnerable and disadvantaged. Emphasizes the role of public health policy and advocacy in addressing global health challenges.

GLBH 567. Interventions in Community Health and Development II. 3 Units.
Utilizing an experiential, evidence-based model of learning, and building on the public health competencies as defined by the Association of Schools of Public Health (ASPH), this three-part course series focuses on selected methodological techniques and skills applicable in the planning, implementation, and evaluation of primary health-care programs that serve to improve the health, safety, and well-being of all people in local and global settings by promoting wellness; preventing avoidable disease, disabilities, and deaths; and eliminating social and health disparities. Focuses on the theoretical foundations and practical applications of program planning, implementation, and evaluation of sustainable public health programs. Students have an opportunity to practice these skills both in the classroom and in local community settings as part of their structured service learning projects. By the end of this course, students demonstrate capacity to create a program theory and logical framework to provide a conceptual and practical foundation for formulating measurable process, impact, and outcome objectives and indicators; designing implementation methods; developing a monitoring and evaluation plan; constructing a timeline, budget, and work plan; and preparing a scope of work/terms of reference document. Students develop an operational understanding by implementing the proposed intervention; collecting relevant implementation; monitoring and evaluating data; and presenting a report both orally and in written format.

GLBH 568. Fundamentals of Community Health and Development III. 2 Units.
Utilizing an experiential, evidence-based model of learning and building on the global health competencies as defined by the Association of Schools of Public Health (ASPH), this three-part course series focuses on improving the health, safety, and well-being of all people in local and global settings by promoting wellness; preventing avoidable disease, disabilities, and deaths; and eliminating social and health disparities. Students conduct population-based analyses that include the assessment and examination of health determinants, practices, and solutions to improve the quality of life for all people--especially the vulnerable and disadvantaged. Focuses on the application of global research methods in response to global health concerns.

GLBH 569. Interventions in Community Health and Development III. 3 Units.
Utilizing an experiential, evidence-based model of learning, and building on the public health competencies as defined by the Association of Schools of Public Health (ASPH), this three-part course series focuses on selected methodological techniques and skills applicable in the planning, implementation, and evaluation of primary health-care programs that serve to improve the health, safety, and well-being of all people in local and global settings by promoting wellness; preventing avoidable disease, disabilities, and deaths; and eliminating social and health disparities. Focuses on the theoretical foundations and practical applications of program planning, implementation, and evaluation of sustainable public health programs. Students have an opportunity to practice these skills both in the classroom and in local community settings as part of their structured service learning projects. Course culminates with a series of workshops that reinforce the skills learned throughout the course series. Students demonstrate capacity to analyze qualitative and quantitative data gathered from the service learning project; report research/evaluation results through peer-reviewed channels; present intervention results orally and in written format; prepare and submit the results of an external evaluation both orally and in written format; synthesize the lessons learned from the service learning project; and discuss how skills acquired during the series could be used to address global health challenges and inequities.

GLBH 584. Special Topics in Global Health. 1-3 Units.
Lectures and discussions on a current topic in global health. May be repeated for a maximum of 3 units applicable to degree program.

GLBH 605. Seminar in Global Health. 1 Unit.
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 Units.
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 607. Principles of Global Maternal and Child Health. 1 Unit.
Discusses and analyzes topics in maternal and child health from a global perspective.

GLBH 685. Preliminary Research Experience. 2 Units.
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 Units.
Individual advice on research design, data collection, data analysis, and reporting of results.

GLBH 694. Research. 1-4 Units.
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 Units.
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.

GLBH 696. Directed Study/Special Project. 1-4 Units.
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 Units.
Student prepares manuscript presenting results of doctoral research study. Limited to doctoral degree candidates.

GLBH 699. Applied Research in Global Health. 2,4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 (forty 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)

Courses

GRDN 514. Introduction to Biomedical Research. 4 Units.
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 Units.
Differential diagnosis of oral disease. Includes epidemiology, etiology, clinical, radiographic, and/or microscopic features. Management of oral diseases.

GRDN 601. Practice Management. 2 Units.
Prepares student for specialty practice. Concepts of employment, records, incorporating, insurance, and practice planning.

GRDN 609. Professional Ethics. 2 Units.
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. 2 Units.
Advanced, course offered every other year (alternating with GRDN 623) during Autumn Quarter. 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 Units.
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 Units.
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.

Gynecology and Obstetrics (GYOB)

Courses

GYOB 599. Gynecology and Obstetrics Directed Study. 1.5-18 Units.

GYOB 701. Gynecology and Obstetrics Clerkship. 1.5-9 Units.
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. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of gynecology and obstetrics, such as benign gynecology, high-risk obstetrics, lactation, oncology, research, etc.

Health Administration (HADM)

Courses

HADM 501. Health Policy and Leadership Seminar. 1 Unit.
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 Units.
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 505. Managerial Statistics and Epidemiology for Healthcare. 4 Units.
Overview of basic statistical and epidemiological concepts and tools, with the objective of showing how they can be used to improve management decisions in the health sector. Includes interpretation and analysis of statistical associations, and distribution and understanding and applying determinants of health events and disease outcomes in human populations.

HADM 506. Principles of Health-Care Finance. 3 Units.
Covers different forms of business organizations and their impact on taxes and cash flows. Focuses particularly on third-party payer system, time value of money, financial risk and return, debt and equity financing, securities valuation, market efficiency, debt refunding, lease financing, and cost of capital.

HADM 507. Principles of Accounting in Health Care. 3 Units.
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 Units.
Introduces concepts of the health policy process and factors that impact health and access to health care, including but not limited to organizing, financing, and delivering health services. Familiarizes students with concepts of the health policy process, emphasizing the leadership and management skills necessary to navigate the necessary changes in the current health system and to demonstrate understanding of the policy development process.

HADM 510. Health Policy Analysis and Synthesis. 3 Units.
Integrates skills and concepts from previous courses taken in managerial problem-solving. May be repeated for additional credit.

HADM 514. Health-Care Economics. 3 Units.
Focuses on the allocation of resources in the health-care industry in terms of how the interaction between consumers, providers, and third-party payers impacts the cost and the level of health care. Looks at the role and impact of the government in this sector, as well as those of the pharmaceutical industry. Examines various health systems around the globe.

HADM 515. Maintenance and Operation of Information Systems. 3 Units.
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 Units.
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 Units.
Exposes students to current and authoritative communication concepts, with emphasis on process and product. Addresses essential concepts in managerial communication largely through report and proposal writing. Includes employment communication (e.g., resumes and cover letters) as part of the curriculum.

HADM 519. Data Analysis and Management. 3 Units.
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 Units.
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 523. Global Health-Care Administration. 1 Unit.
Provides basic knowledge of broad management concepts for the clinical student or professional interested in international service in the health-care sector. Covers concepts of accounting, human resources, change management, cultural awareness, and other topics. Intended for students without business or management degrees or experience.

HADM 525. Special Topics. 1-4 Units.
Lecture and discussion on a current topic in health policy and management or leadership. May be repeated for a maximum of 8 units applicable to degree program.

HADM 526. Data Communication Theory. 3 Units.
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 Units.
Focuses on understanding, predicting, and influencing human behavior in an organization. Students gain experience using practical individual and group case studies and reading/researching organizational behavior books and topics that facilitate thinking through problems/issues and finding solutions as leaders, managers, and employees in organizations.

HADM 529. Health-Care Negotiations and Conflict Resolution. 3 Units.
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 Units.
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 Units.
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. Health-Care Law. 3 Units.
Examines health care as a highly regulated industry, providing students with an understanding of the vast range of legal issues facing health-care practitioners and administrators. Gives particular attention to topics in regulatory compliance, medical malpractice, health-care contracting, and employment law.

HADM 536. Health Policy Communications. 3 Units.
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 Units.
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.

HADM 545. Government Policy and Health Disparities. 3 Units.
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 546. Attaining Philanthropic Support: Fundamentals of Fundraising. 2 Units.
Provides an overview of working in the nonprofit sector postgraduation, and the essentials of how to fund raise--especially from private sources such as individuals, foundations and corporations, and other entities. Addresses the technical, methodological, relational, and ethical principles that undergird fund-raising.

HADM 549. Health-Care Investment and Portfolio Issues. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Covers capital structure decisions, capital budgeting, financial analysis and forecasting, project risk analysis, working capital management, business valuation, mergers and acquisitions, reimbursement methods, and financial risk management.

HADM 574. Managing Human Resources in Health-Care Organizations. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Builds on the work completed in HADM 581. Under the guidance of an assigned advisor, students create either a personal development plan or an academic plan to be submitted as part of the admission requirement for the doctoral leadership degree.

HADM 584. Current Topics in Health Policy and Leadership. 1 Unit.
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 Units.
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 Units.
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. Health Policy and Research. 3 Units.
Provides students with the skills needed to translate research into policy and practice. Examines how research impacts public health and health policies. Students explore the relationship between statistics, research, and public policy and understanding policy development and the politics that informs public health policy. 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 Units.
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 Units.
While working closely with leadership specialists, student observes, demonstrates, evaluates specific leadership styles, and explores alternative approaches. Permission of instructor required. May be repeated for a total of 8 units.

HADM 595. Leadership--Past, Present, and Future. 3 Units.
An in-depth study of the historical and theoretical foundations of leadership, exploring a wide range of sources across time and culture. Emphasizes major theories influencing the current understanding of leadership and its relationship to management.

HADM 601. Health Systems-Operations Management. 3 Units.
Uses quantitative methods to analyze and improve business processes within an organization. Topics include decision-making models, forecasting, linear programming, inventory models, queuing theory, project management, simulation, facility layout, and quality control.

HADM 604. Health Systems Strategic Planning. 3 Units.
Describes the strategic planning process and examines the tools needed to analyze the external factors and internal capabilities as they relate to a particular organization. An overview on how to develop a vision, mission, goals, objectives and a control mechanism will be provided as well as insight on how best to implement developed strategy as it relates to human resource management, marketing and finance. The ability to consider the business, demographic, cultural, political and regulatory implication of decisions that improve long-term success and the viability of an organization will also be examined.

HADM 605. Health-Care Quality Management. 3 Units.
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 Unit.
Integrates skills and concepts from previous courses taken in managerial problem-solving. May be repeated for additional credit.

HADM 614. Qualitative Research Design and Practice I. 3 Units.
Introduces qualitative research methods, including ethnography. Examines literature for information on qualitative processes, and provides field experience for participation observations, interviewing, and the discovery of theory. Includes ethical consideration and the development of a qualitative research proposal.

HADM 615. Qualitative Research Design and Practice II. 3 Units.
Planning and conducting a qualitative research project. Advanced analysis of appropriate research design for qualitative research and development of a publishable research paper for a peer-review journal using qualitative methodology.

HADM 620. Health Policy Theories and Concepts. 4 Units.
Introduces students to a selection of material on key theories, writers, and conceptual frameworks that influence contemporary health policy analysis and development. Discusses American political thought and reviews the evolution of health policy in the U.S., theories of justice, and implications for public health policy. Teaches students to explain the role of ethics and values in developing a framework for health policy.

HADM 625. Health Policy Advocacy and Civic Engagement. 4 Units.
Matches students with health or social service, health policy, and social justice agencies and coalitions to provide in-depth knowledge of agenda setting, power analysis, legislative research, and legislative advocacy in relation to specific health issues. Emphasizes the impact of the political process. Develops skills associated with community organizing and civic engagement for policy advocacy and communicating effectively using traditional and innovative strategies, including but not limited to mass and social media. Focuses on oral and written communication, such as policy briefs and op-eds.

HADM 685. Preliminary Research Experience. 3 Units.
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 Unit.
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 Units.
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 students. Permission of instructor required. May be repeated for a total of 8 units.

HADM 690. Health-Care Management Capstone. 3,4 Units.
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 review--include a comprehensive strategic plan that incorporates all the elements of a business plan designed specifically for a health care organization.

HADM 691. Integrated Management Capstone 1. 2 Units.
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 Units.
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.

HADM 695. Health Administration Field Practicum. 3 Units.
Designed for students to integrate academic competencies with on-the-job training.

HADM 696. Directed Study/Special Project. 1-4 Units.
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 Units.
Student develops the dissertation proposal. Research advisor develops with the student mutually agreed-upon objectives. Evaluation based on the accomplishment of these objectives. Culminates in a dissertation proposal. Doctoral students only.

HADM 698. Dissertation. 1-8 Units.
Participant prepares dissertation manuscript presenting the results of doctoral research study. Doctoral students only.

HADM 699. Applied Research. 1-4 Units.
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.

HADM 710. Management Associate Practicum 1. 12 Units.
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 twenty-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 Units.
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 twenty-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.

HADM 712. Management Associate Practicum 3. 12 Units.
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 twenty-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.

HADM 724A. Health-Care Administration Practicum. 2 Units.
Provides practical training for students in the M.B.A. degree program. Placement coordinator mentors students through a practical experience that develops critical career skills. Student placement based on skill sets, interests, and organizational needs. Requires 100 hours, as well as a final paper and an oral presentation.

HADM 724B. Health-Care Administration Practicum. 4 Units.
Provides practical training for students in the M.B.A. degree program. Placement coordinator mentors students through a practical experience that develops critical career skills. Student placement based on skill sets, interests, and organizational needs. Requires 200 hours, as well as a final paper and an oral presentation.

HADM 724C. Health-Care Administration Practicum. 6 Units.
Provides practical training for students in the M.B.A. degree program. Placement coordinator mentors students through a practical experience that develops critical career skills. Student placement based on skill sets, interests, and organizational needs. Requires 300 hours, as well as a final paper and an oral presentation.

HADM 724D. Health-Care Administration Practicum. 8 Units.
Provides practical training for students in the M.B.A. degree program. Placement coordinator mentors students through a practical experience that develops critical career skills. Student placement based on skill sets, interests, and organizational needs. Requires 400 hours, as well as a final paper and an oral presentation.

HADM 797. Health Policy and Leadership Field Practicum. 3 Units.
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.

HADM 798A. Health Administration Field Practicum. 12 Units.
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.

HADM 798B. Health Administration Field Practicum. 6 Units.
Part-time, ten-week (twenty 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.

HADM 798D. Health Administration Field Practicum. 12 Units.
Full-time, ten-week (forty 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.

Health Care Administration (HCAD)

Courses

HCAD 305. Health-Care Communication. 3 Units.
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. 3 Units.
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 Units.
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. 3 Units.
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 Units.
Surveys major marketing topics, including consumer behavior, product, pricing, placement, and promotions.

HCAD 374. Health-Care Human Resources. 3 Units.
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 Units.
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. 3 Units.
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 Units.
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: 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 414. Sustainability for Health Care Management. 3 Units.
Approaches health care management by focusing on health-care sustainability guidelines that reflect the intrinsic relationship between delivering quality health care and the ecological health of the community. Examines social trends and drivers of sustainable health systems and explores various approaches for health care providers and systems to become better stewards of the environment. Studies the relationship between hospital design, sustainability initiatives, and quality of care.

HCAD 417. GIS for Health-Care Management. 3 Units.
Explores geographic information system (GIS) methods as a means of introducing students to key issues faced by managers responsible for health-care systems in government or private sector organizations. Focuses on the emerging concept of “geodesign”-- that is, the use of geotechnologies to find optimal solutions to geospatially defined issues in health-care management. Introduces the fundamentals of mapping, spatial query, pattern analysis, and spatial statistics; and emphasizes methods for modeling key processes in health care--including suitability, movement, and interaction. In collaboration with a GIS analyst, students examine case studies that emphasize business and community health-care support sectors. Students also participate in projects highlighting effective sustainability practices to assure healthy initiatives that influence the overall health climate of their community.

HCAD 446. Accounting for Health-Care Managers. 3 Units.
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. 3 Units.
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. 3 Units.
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 Units.
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.

Health Geoinformatics (HGIS)

Courses

HGIS 421. Cartography and Map Design. 3 Units.
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.

HGIS 422. Principles of Geographic Information Systems. 4 Units.
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.

HGIS 423. Practical Issues in GIS. 4 Units.
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.

HGIS 424. Desktop GIS Software Applications. 4 Units.
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.

HGIS 434. Advanced GIS Software Applications. 3 Units.
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.

HGIS 435. Sources, Capture, and Integration of GIS Data. 3 Units.
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.

HGIS 436. Spatial Analysis with GIS. 4 Units.
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.

HGIS 437. GIS in Public Health. 2 Units.
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.

HGIS 438. Introduction to Web GIS. 4 Units.
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.

HGIS 498. Health Geographics Senior Project. 2,4 Units.
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.

HGIS 499. Directed Study/Special Project. 1-4 Units.
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.

HGIS 521. Cartography and Map Design. 2 Units.
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.

HGIS 522. Principles of Geographic Information Systems and Science. 3 Units.
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.

HGIS 523. Practical Issues in GIS. 3 Units.
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.

HGIS 524. GIS Software Applications and Methods. 3 Units.
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.

HGIS 526. Seminar in Geographic Information Systems. 1 Unit.
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.

HGIS 527. Geospatial Technologies for Emergency Preparedness and Management. 3 Units.
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.

HGIS 535. Integration of Geospatial Data in GIS. 2 Units.
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.

HGIS 536. Spatial Analytic Techniques and GIS. 3 Units.
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.

HGIS 537. Health Care Geographics. 2 Units.
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.

HGIS 538. Introduction to Web GIS. 3 Units.
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.

HGIS 539. GIS Applications in Environmental Health. 2,3 Units.
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.

HGIS 546. Introduction to Spatial Epidemiology. 2 Units.
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.

HGIS 547. GIS for Public Health Practice. 2 Units.
Community health assessment and planning, chronic disease prevention, public health, health disparities analysis, and immunization.

HGIS 549. Remote Sensing Applications in the Health Services. 3 Units.
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.

HGIS 555. Advanced Remote Sensing Application and Systems Modeling in Health and Earth Science. 3 Units.
Introduces 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.

HGIS 557. Geographical Techniques for Health and Environmental Analysis. 3 Units.
Geographic tools for graphic display and spatial analysis of domestic and international health, epidemiological health services, and environmental health problems and issues. Uses of geographic information systems (GIS), desktop mapping, medical geographical applications, and geocoded, computerized databases in health and environmental planning, decision making, and research.

Health Informatics (HLIF)

Courses

HLIF 510. Health-Care Information Systems. 4 Units.
Development and diffusion of current and futuristic information systems in health-care organizations. Explores an array of systems, from modular applications to enterprise-wide systems. Encompasses the concepts of EHR, PHR, HIE, regulatory movements, system architecture, system theory, and strategic planning for information systems. Course includes weekly laboratory (2-4 hours) focused on demonstrating competency with Microsoft Excel.

HLIF 515. The U.S. Health-Care System. 3 Units.
Overview and analysis of health-care delivery in the United States, including the history of health-care institutions, accrediting bodies, organizations that provide health care, regulations, standards, reimbursement methods used, and the professionals who provide services. Research and analysis of historical health-care models/regulations proposed or utilized in the United States and other countries, current system regulations proposed or being utilized in the United States and other countries, and reflection by the student as to future models that may improve the current system and delivery of health care in the United States.

HLIF 520. Data Management: Modeling and Development. 3 Units.
Explores the concepts of data and the criticality of appropriate data management to successful implementation of health-care information systems. Specific topics include database management, knowledge management, data mining, data integration, data visualization, data architecture, and data warehousing.

HLIF 525. Management of Data and Information. 3 Units.
Investigates and analyzes standardized movement in health informatics. Topics addressed include SDOs, HL-7, federal standardization, ANSI, UML, EDI, SNOMED, and unified process.

HLIF 530. Data Analytics and Decision Support. 3 Units.
Studies various data sources available for data analytics, such as predictive and prescriptive modeling and statistics, parametric and nonparametric statistics, Bayesian models, Link analysis, SAS, SPSS, etc. Examines the principals, design, and implementation of decision-support systems, including biometric simulation, clinical, NLP, statistical algorithms, expert, and artificial intelligence.

HLIF 532. Financial Management in Health Care. 2 Units.
Study of economics and financial management in health-care organizations. Analyses of economic market impacts, various health-care payment mechanisms, ratio analysis, cost-benefit analysis, operational and capital budgeting, and investment strategies.

HLIF 540. Leadership Perspectives and Practice. 3 Units.
Examines organizational culture in today's health care organizations; and the various structures, designs, and models--as well as the role of ethical and values-based leadership. Specific topics include change management, human factor in health informatics, personnel management, governance, ethics, group dynamics, and productivity management.

HLIF 545. System Design, Implementation and Management. 3 Units.
Study of the fundamentals of the system development life cycle (SDLC)--including system analysis assessment, techniques and tools, system design/development strategies, system implementation and operations, and system evaluation.

HLIF 555. Health-care Vendor and Project Management. 2 Units.
Investigates contemporary health-care information systems vendor offerings and effective techniques for establishing effective vendor relationships. Topics include request for information, request for proposals, contract negotiations, and project management.

HLIF 560. Policy Development for Privacy and Security in Health Care Systems. 3 Units.
Study of the regulatory, social, and ethical issues of privacy and security in health care information systems. Topics covered include HIPAA, breech legislation/reporting requirements, security requirements/defenses, business continuity planning, and other regulatory issues related to privacy and security.

HLIF 565. Technical Structures in Health Informatics. 3 Units.
Examines the principles of computer science as related to the development and diffusion of health care information systems. Topics covered include technical infrastructure support of the following: business continuity, daily operations, wireless communication, security, EDI, networking protocols, system integration, programming languages, and system integration issues.

HLIF 570. Professional Portfolio. 2 Units.
Development of a professional e-portfolio that includes a personal video of introduction, the development of personal and professional goals, resume and cover letter writing, major projects completed from each course and from previous work experience, career mapping, reaction papers in response to the University's core values, publications completed, and other items as developed during the program. The first in a sequence of two courses.

HLIF 574. Capstone I: Project and Special Topics in Health Informatics. 1 Unit.
Student works independently on a business plan--either with an assigned facility or a theoretical business opportunity--to select, implement, and optimally utilize information technology on an effective solution. Student subsequently prepares and presents a complete business plan (project charter) that draws from all previous curriculum course work and includes, but is not limited to, the following elements: analysis of business and system need; articulation of project goals, assumptions, dependencies; delineation of project scope and stakeholders; specification of deliverables that measure success; preparation of complete budget; establishment of timeline; and project management strategies.

HLIF 575. Capstone II: Project and Special Topics in Health Informatics. 2 Units.
Student works independently on a business plan, either with an assigned facility or a theoretical business opportunity, to select, implement, and optimally utilize information technology on an effective solution. Student subsequently prepares and presents a complete business plan (project charter) that draws from all previous curriculum course work and includes, but is not limited to, the following elements: analysis of business and system need; articulation of project goals, assumptions, dependencies; delineation of project scope and stakeholders; specification of deliverables that measure success; preparation of complete budget; establishment of timeline; and project management strategies. The second course in two-course sequence.

HLIF 580. Health-Care Policy. 2 Units.
Analysis of current health-care policy development at a local, regional, state, and national levels. Includes review and critical analysis of proposed policy and contemporary forces impacting various policy agendas.

Health Information Administration (HLIN)

Courses

HLIN 301. Introduction to Health Data Management. 5 Units.
Introduces scope, functions, and administration of health information management as a profession, including professional organizations, professional certifications, and the profession's code of ethics. Overview of documentation content and structure of paper, hybrid, and electronic health records. Requirements of accrediting, certifying, and licensing entities that guide the creation of patient health-data collection, with emphasis on acute care settings. Introduces basic health-care statistical applications. Surveys functions within a health information management department.

HLIN 303. Basic Coding Principles and Techniques I. 3 Units.
Principles of disease and operation classification (coding) using ICD-10-CM and ICD-10-PCS. 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 Units.
Continues review of disease and operation coding with ICD-10-CM and ICD-10-PCS. 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.

HLIN 305. Health-Care Statistical Applications. 3 Units.
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 308. Introduction to Data Analytics. 3 Units.
Introduces data management collection, analysis, and uses in health care. Concepts of transferring data into information, data analytic techniques, and data presentation. Uses software tools for the manipulation, analysis, and presentation of data.

HLIN 325. Pharmacology for Health Information Administration. 2 Units.
Provides understanding of pharmacology as required for medical record analysis, audits, and other related studies. Basic definitions, sources of information, and classification of drugs.

HLIN 361. Professional Practice Experience I. 1 Unit.
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 Unit.
Supervised experience in health information departments and other areas of health care facilities. Includes applied laboratory assignments for HIM professional courses.

HLIN 365. Professional Practice Experience III. 1 Unit.
Supervised clinical experience in a health facility or health-related organization, with simulated laboratory experiences and assignments, during the Spring Quarter of the junior year. Written and oral reports of experience.

HLIN 395. Professional Practice Experience I--Junior Affiliation. 3 Units.
Three-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).

HLIN 401. Survey of Health Systems Management. 4 Units.
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 Units.
Clinical terminologies, code sets, classifications systems, and nomenclatures as used in the electronic health record.

HLIN 407. Financial Management for Health Information Management. 2 Units.
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 Units.
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 development and 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.

HLIN 441. Legal Aspects of Health Information Administration I. 2 Units.
Basic principles of law related to the health-care field. Overview of the legal system and the court system in the United States, including alternative dispute resolution. Civil procedure and the elements of evidence. Examines tort law and various types of negligence. Analyzes the elements of improper disclosure. Components of the legal health record; compares confidentiality, privacy, and security. Differentiates between the law and ethics. Examines advance directives. Elements of risk management as it relates to medical documentation and incident reports. Analyzes various types of consents.

HLIN 442. Legal Aspects of Health Information Administration II. 3 Units.
Compares federal and state laws regarding access and disclosure of patient information, including application of the preemption rule. Release of general, mental health, substance abuse, and HIV patient documentation. Release of information in response to subpoenas, court orders, and search warrants. Introduces the contents of the Health Insurance Portability and Accountability Act (HIPAA), with in-depth emphasis on the privacy section. Components of the Health Information Technology for Economic and Clinical Health Act (HITECH Act). Examines security breaches. Overview of medical identity theft. Elements of reporting requirements. Assignment pertaining to the Federal Register.

HLIN 444. Corporate Compliance in Health Care. 3 Units.
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. Includes Clinical Documentation Improvement Theory as it relates to health care.

HLIN 445. Coding Seminar. 3 Units.
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.

HLIN 451. Quality Improvement in Health Care. 3 Units.
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 Unit.
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 Unit.
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 Units.
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 Units.
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.

HLIN 484. Current Topics in Health Information Administration. 3 Units.
Topics of current interest in the field of health information administration, including career planning, management skills, and professional development. Review sessions covering the curriculum and mock certification examination for the registered health information administrator. Content varies.

HLIN 493. Health Information Management I. 4 Units.
Introduces basic management functions, philosophies, principles, 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 Units.
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 entrepreneurism. 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.

HLIN 495. Professional Practice Experience Senior Affiliation. 3 Units.
Directed experience 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.

HLIN 496. Project Management. 1 Unit.
Project management as related to health information systems and data management.

HLIN 499. Health Information Administration Independent Study. 1-4 Units.
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 Professions Education (HPED)

Courses

HPED 504. Pedagogy and Technology. 3 Units.
Teaching and learning theories adapted to technology. Explores learning management systems. Overview of instructional design.

HPED 517. History and Philosophy of Adventist Medical and Health Education. 3 Units.
Explores the essence of Loma Linda University and the Seventh-day Adventist philosophy of medical and health education as found in the writings of Ellen G. White and others. Discusses the core values of LLU and the science and promotion of healthy lifestyles and health-care delivery.

HPED 521. Health Professions Education Professional Portfolio I. 1 Unit.
Health professions education students develop a portfolio that demonstrates through personal and professional growth their competence in both program and University outcomes; as well as their progression toward University and school mission, values, and goals.

HPED 522. Health Professions Education Professional Portfolio II. 1 Unit.
Health professions education students develop a portfolio that demonstrates through personal and professional growth their competence in both program and University outcomes; as well as their progression toward University and school mission, values, and goals.

HPED 523. Health Professions Education Professional Portfolio III. 1 Unit.
Health professions education students develop a portfolio that demonstrates through personal and professional growth their competence in both program and University outcomes; as well as their progression toward University and school mission, values, and goals.

HPED 525. Education Theory for the Health Professional. 3 Units.
Overview of education theories relevant to andragogy and education of health professionals. Also explores theories of online teaching and learning.

HPED 535. Current Issues in Health Professions Education. 3 Units.
Explores education foundations and trends in the different health professions. Reviews historic transitions and issues currently impacting the professions.

HPED 537. Current Issues in Higher Education. 3 Units.
Explores issues confronting higher education in the twenty-first century. Focuses on U.S. and international trends.

HPED 540. Education Theories for the Health Professions. 3 Units.
Introduces educational theory and its translational implication on healthcare education, including: development of education theory, adult education theory, and healthcare education theory.

HPED 545. Graduate Seminar in Accreditation and Assessment. 3 Units.
Explores the process of accreditation and assessment in higher education. References requirements of the student's health profession.

HPED 551. Masters Thesis I. 3 Units.
Selection of research topic, evaluation of current literature on the subject, and contruction of data collection instrument. Students can select this option in lieu of the HPED Capstone Project 1.

HPED 552. Master's Thesis II. 3 Units.
Collection of data using approved instrument, analysis of results, discussion, and documentation of findings according to thesis format.

HPED 555. Higher Education and the Law. 3 Units.
Examines the legal foundations of higher education. Includes differences between secular and faith-based institutions.

HPED 557. Administration in Higher Education II. 3 Units.
Advanced overview of institutional governance structures. Includes administrative structures, relationships between different constituencies, and institutional philosophies and goals.

HPED 561. Leadership in the Health Professions I. 3 Units.
Inventory and assessment of personal leadership skills and strengths in a faith-based context.

HPED 562. Leadership in the Health Professions II. 3 Units.
Overview of theories of leadership as applied to academic and health professions contexts. Study of leadership characteristics of significant individuals.

HPED 567. Graduate Seminar in Academic Administration. 3 Units.
Compares and contrasts the different roles of academic administrators. Evaluates strengths and weaknesses of different administrative structures.

HPED 573. Readings in Academic Leadership. 3 Units.
Dynamics of leadership in an academic environment. Explores and discusses the historical and current natures of academic leadership.

HPED 577. Graduate Seminar in Academic Leadership. 3 Units.
Discusses qualifications to assume academic leadership positions in secular, faith-based, and for-profit institutions. Includes personal leadership inventory.

HPED 581. Capstone Project in Health Professions Education I. 3 Units.
Students address and present a substantial issue related to their professional area of interest, as well as design and implement a scholarly approach towards its resolution. Emphasizes the design, literature review, and needs assessment of the project. A thesis option available for students requiring a directed research study.

HPED 582. Capstone Project in Health Professions Education II. 3 Units.
Continues HPED 581. Students present their findings, emphasizing data collection, implementation, and evaluation of their project. A thesis option available for students who require a directed research study.

HPED 587. Current Issues in Higher Education Leadership. 3 Units.
Examines the leadership roles within the health profession. Includes professional organizations, societies, congresses, and fellowships; and their criteria for assuming leadership positions.

HPED 594. Teaching Practicum in Health Professions Education. 3 Units.
Introduces the practical competencies related to didactic and practice-based learning. Students experience and lead out in diverse teaching and learning environments, including but not limited to OSCE, clinical simulation, clinical rounds, and classroom learning experiences.

HPED 595. Special Projects. 1-6 Units.
Individual arrangements for graduate students to explore relevant areas under the guidance of a faculty mentor. May include readings, literature reviews, research projects, and specialized professional development. Minimum of thirty hours required for each unit of credit.

Health Promotion and Education (HPRO)

Courses

HPRO 417. Biomechanics. 4 Units.
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.

HPRO 418. Introduction to Human Disease. 3 Units.
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 Units.
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 Units.
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 Units.
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.

HPRO 426. Fitness for Special Populations. 4 Units.
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.

HPRO 431. Psychology and Sociology of Sport. 3 Units.
Role, effect, and importance of sport in society. Psychological principles that motivate individuals to initiate and continue sport activities.

HPRO 432. Injury Prevention. 2 Units.
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 Units.
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.

HPRO 436. Programs in Health Promotion. 4 Units.
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 Units.
Agency-based guided practice designed to acquaint the student with existing and developing wellness programs. May be repeated for three quarters.

HPRO 498. Senior Project. 1,3 Unit.
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.

HPRO 499. Directed Study/Special Project. 1-4 Units.
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 500. Stress Management. 2 Units.
Covers aspects of stress as it relates to 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 501. Human Anatomy and Physiology I. 6 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. 4 Units.
Studies the effect of the neurological system on physical health, with a focus on psychoneuro-immunology. Summarizes scientific disciplines that study brain, immune system, and health behavior interactions that provide the healthcare professional with an integrative understanding of lifestyle, whole person care for immune system function and wellness.

HPRO 519. Pharmacology. 3 Units.
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.

HPRO 523. Maternal/Child Health: Policy and Programs. 3 Units.
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 Units.
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 Units.
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 Units.
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.

HPRO 527. Obesity and Disordered Eating. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

HPRO 534A. Research Methods. 2 Units.
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). Doctoral students only.

HPRO 534B. Research Methods. 2 Units.
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). Doctoral students only.

HPRO 535. Health Education Administration and Leadership. 3 Units.
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 Units.
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. 2 Units.
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. 1 Unit.
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 Unit.
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.

HPRO 538. Health Education Program Development and Evaluation. 3 Units.
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 Units.
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 Units.
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.

HPRO 543. Writing for Health Professionals. 3 Units.
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. Preparation of two publishable papers. Limited to doctoral degree students.

HPRO 544. Health Education Evaluation and Measurement. 3 Units.
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 Units.
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 Units.
Global epidemiological profile of women in terms of educational patterns, economic productivity, social status, and mortality and morbidity 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 Units.
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 Units.
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 Units.
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.

HPRO 557. Issues and Programs in Family Planning. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

HPRO 584. Aging and Health. 3 Units.
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 Unit.
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 Units.
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 Units.
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.

HPRO 589. Qualitative Research Methods. 3 Units.
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 Units.
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.

HPRO 608. Advanced Seminar in Health Education. 2 Units.
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.

HPRO 614. Seminar in Maternal and Child Health Practice. 2 Units.
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 Units.
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 Units.
Individual consultation on project design and data collection, analysis, and evaluation.

HPRO 694. Research. 1-14 Units.
Independent research in collaboration with researcher/faculty member towards the development of a dissertation proposal. Research program arranged with faculty member(s) involved and approved by advisor. Minimum of forty hours required for each unit of credit. Written report required. Limited to doctoral degree students.

HPRO 695. Community Practicum. 1-3 Units.
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 Units.
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.

HPRO 698. Dissertation. 1-14 Units.
Student prepares a manuscript presenting results of the doctoral research study. Limited to doctoral degree candidates.

HPRO 700. MIP-Peace Corps Field Practicum. 0 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 (forty hours/week) field internship.

HPRO 797. MIP Residency in Health Education. 12 Units.
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 Units.
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.

HPRO 798B. Field Practicum. 6 Units.
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.

HPRO 798D. Field Practicum. 12 Units.
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 (forty hours per week for ten weeks). Concurrent attendance in seminars on campus required.

Implant Dentistry (IMPD)

Courses

IMPD 505. Patient Presentation Seminar. 1 Unit.
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 Unit.
Gives the postdoctoral student fundamental aspects of radiology imaging as part of the diagnosis and treatment.

IMPD 547. Implant Dentistry Grand Rounds. 1 Unit.
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 Units.
Studies the structures and properties of dental implant materials and implant prosthodontic superstructures.

IMPD 585. Implant Prosthodontics. 2 Units.
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 Units.
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 Units.
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 Units.
Overview of the clinical science of implant dentistry, including etiology, therapy, clinical methods, and record keeping.

IMPD 612. Advanced Implant Dentistry. 2 Units.
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 Unit.
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 Unit.
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 Unit.
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 Units.
Teaching experience in implant prosthodontics and implant surgery.

IMPD 696. Scholarly Activity in Implant Dentistry. 1 Unit.
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 Unit.
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 Unit.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

IMPD 697C. Research. 1 Unit.
Student completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

IMPD 698. Thesis. 1-8 Units.

IMPD 725. Clinical Practice in Implant Dentistry. 4 Units.
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 Units.
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 Units.
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.

Instructional Design and Media Technology (IDMT)

Courses

IDMT 521. Instructional Design I. 3 Units.
Examines adult instructional theories and teaching approaches to increase student learning outcome success. Exposes students to latest instructional resources, techniques, and technology. Emphasizes communication during the design process and use of instructional theories and tools to communicate course content effectively.

IDMT 522. Instructional Design II. 3 Units.
Develops and applies strategies for instructional theory utilizing media, including making rational choices regarding technology and communication.

IDMT 531. Host Systems and Authoring I. 3 Units.
Provides a working knowledge of various online educational systems, as well as the basic approaches to and differences in creating courses within those systems. Not a programming course.

IDMT 541. Digital Media Production I. 3 Units.
Introduces students to the production process basics (editing, graphics, and animation) needed to create effective instructional modules. Students shoot, edit, and deliver a completed DVD and upload to the web a digital file of a completed instructional module. Along with hands-on learning of the entire process, students explore key concepts relating to visual learning and how to create and communicate effectively with visual images.

IDMT 542. Digital Media Production II. 3 Units.
Explores advanced production techniques (editing, graphics, and animation), emphasizing the production of an instructional video. Introduces shooting and editing techniques unique to creating interactive, instructional media. Students produce an online instructional video and an interactive educational module for a tablet.

IDMT 561. Graphics I. 3 Units.
Introduces students to Adobe Photoshop and exposes them to advanced graphic capabilities of editing software packages. Emphasizes exploration of layout techniques that maximize educational effectiveness.

IDMT 564. Motion Graphics I. 3 Units.
An Adobe After Effects introductory course. Students become proficient with the software, research various characteristics of visual learning, and create simple interactive motion graphics that can be included in an interactive educational module.

IDMT 571. Animation I. 3 Units.
Introduces students to 2D and 3D animation software packages. Emphasizes proper animation techniques as specific software packages are learned. Students research existing education-focused animations.

IDMT 581. Instructional Design and Media Technology Internship I. 3 Units.
The first of two required internships that provides opportunity for students to work for a short time in areas that will provide practical experience. Encourages students to seek opportunities that emphasize the creative side of media production.

IDMT 582. Instructional Design and Media Technology Internship II. 3 Units.
The second of two required internships. Encourages students to seek opportunities that specifically provide experience creating digital courses or working with community partners.

Integrated Biomedical Graduate Studies (IBGS)

Courses

IBGS 501. Biomedical Communication and Integrity. 2 Units.
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 Units.
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 Units.
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 Units.
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.

IBGS 512. Cellular Mechanisms and Integrated Systems II. 8 Units.
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.

IBGS 513. Cellular Mechanisms and Integrated Systems III. 8 Units.
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.

IBGS 522. Cellular Mechanisms and Integrated Systems II Journal Club. 2 Units.
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 Units.
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 Unit.
Students attend a series of research descriptions presented by graduate students.

IBGS 605. Integrative Biology Presentation Seminar. 1 Unit.
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 Unit.
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 Unit.
Incorporates the research rotations to be completed before assignment to a dissertation or thesis laboratory.

Interdisciplinary Studies (INTD)

Courses

INTD 515. Curriculum Development, Methods of Teaching and Evaluation. 3 Units.
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 Units.
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 Unit.
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.

International Dentist Program/ Clinics (IDPC)

Courses

IDPC 815. Clinical Orientation I - IDP. 2 Units.
Introduces the electronic patient record, reviews radiology safety, discusses professional liability, and introduces clinical regulatory compliance in dentistry. Introduces partner activities involving data gathering, radiology, periodontic activities, and photography.

IDPC 816. Clinical Orientation II - IDP. 1 Unit.
Builds on IDPC 815. Continues instruction related to the electronic patient record; discusses patient-management techniques, treatment planning, and practice-management issues; discusses clinic policies and infection control. Discusses financial planning for patients, as well as quality assurance and improvement. Continues partner activities, interpretation of data, and case presentation--including periodontal diagnoses.

IDPC 817. Clinical Orientation III - IDP. 1 Unit.
Builds on IDPC 815 and IDPC 816. Continues instruction related to the electronic patient record, bridging the transition from preclinical to clinical experience. Discusses long-term assessment of care outcomes and professional relationships. Continues partner activities.

IDPC 825. General Clinics. 16 Units.
Includes direct patient care through rotations in urgent care, pediatric, service learning, and screening blocks. Requires registrations Autumn and Winter quarters of the IDP3 year to fulfill the total units.

IDPC 835. General Clinics. 24 Units.
Includes direct patient care through rotations in urgent care, pediatric, service learning, and screening blocks.

IDPC 845. General Clinics - Direct Patient Care. 16 Units.
Includes direct patient care.

International Dentist Program/ General (IDPG)

Courses

IDPG 700. Review of General Dentistry. 8-12 Units.
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 Units.
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)

Courses

IDPO 534. Oral Medicine: Orofacial Pain and TMD. 2 Units.
Differential diagnosis of orofacial and temporomandibular joint pain, including basic guidelines for initial therapy. Utilizes TMD patient cases for group and class discussions. Introduces diagnosis and treatment of neuropathic pain and headaches. Case presentations focus on nonodontogenic pain that presents as toothache and/or gingival pain. Offered Winter Quarter of odd-numbered years for IDP3 and IDP4 students.

IDPO 535. Oral Pathology and Diagnosis. 3 Units.
Graduate-level survey of pathology. Studies developmental, infectious, immunologic, neoplastic, and metabolic disorders of the head and neck. Includes epidemiology, etiology, clinical and/or radiographic features, microscopic features, and management of disease. Emphasizes differential diagnosis and management of dental lesions.

IDPO 725. Patient Assessment and Data Management. 2 Units.
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 Units.
Discusses treatment options in treatment planning, with case-based treatment planning exercises. Introduces computer-based treatment plan management.

IDPO 826. Oral and Maxillofacial Surgery. 2 Units.
Reviews oral and maxillofacial surgery--including medical history pharmacology, instrumentation, procedures, dental emergencies, and complications. Includes a laboratory component.

IDPO 827. Oral and Maxillofacial Surgery. 2 Units.
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.

International Dentist Program/ Periodontics and Pediatric Dentistry (IDPP)

Courses

IDPP 754. Clinical Periodontics. 2 Units.
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. Anticipated results of therapy, including options of surgical versus nonsurgical approaches. Includes a laboratory component.

IDPP 755. Pediatric Dentistry Clinic--IDP. 1 Unit.
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 Units.
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 Unit.
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 Units.
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)

Courses

IDPR 701. Operative Dentistry I. 2 Units.
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 Units.
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 704. Introduction to Occlusion. 2 Units.
Studies the temporomandibular joint, muscles of mastication, and the teeth in static and dynamic positions.

IDPR 750. Dental Materials. 2 Units.
Reviews current dental materials, with demonstrations of techniques. Web introduced.

IDPR 761. Removable Prosthodontics I. 2 Units.
Reviews the basic clinical and laboratory removable prosthodontic procedures involved in the fabrication of CD for treating the edentulous patient. Includes a laboratory component.

IDPR 762. Removable Prosthodontics II. 2 Units.
Reviews the laboratory phases of diagnosing, planning treatment for RPD, immediate CD, and relines. Includes a laboratory component.

IDPR 763. Removable Prosthodontics III. 2 Units.
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 Units.
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 Units.
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. Advanced Prosthodontics for IDP. 2 Units.
Introduces CAD/CAM restoration and discusses complex removable and fixed prosthodontic cases. Course includes a laboratory component.

IDPR 801. Fixed Prosthodontics III. 2 Units.
Indications, treatment planning, and design of partial coverage metal castings. Introduces additional techniques for fixed prosthodontics. Lecture and laboratory.

IDPR 803. Operative Dentistry III. 2 Units.
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 Units.
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.

Marital and Family Therapy (MFTH)

Courses

MFTH 501. Fundamentals of Supervision in Marital and Family Therapy. 3 Units.
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. 1 Unit.
Mentoring of supervision of MFT trainees and interns in a clinical setting. Hours earned apply toward certification as an AAMFT-approved supervisor. Must complete 30 hours of supervision and 5 hours of supervision mentoring.

MFTH 504. Advanced Theory in Marital and Family Therapy. 4 Units.
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 Units.
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--Foundations for Systemic Practice. 3 Units.
Explores the philosophical underpinnings of systemic thought and their clinical application to the field of family therapy and the recovery processes in the treatment of mental health issues. Focuses on the role of recursive epistemology as it affects family patterns and provides methods for 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--Social Constructionism and Postmodern Practices in MFT. 3 Units.
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 to present issues in a way that demonstrates 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 in the face of 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--Larger and Multiple Systems in MFT Practice. 3 Units.
Examines a multisystemic framework that includes biological, interpersonal, family, community, school, and organizational systems. Emphasizes the influence of contextual issues--such as gender, race, class, sexual orientation, and ethnicity--on emotion, behavior, and relationship patterns related to mental health and family issues in couples and family therapy practice.

MFTH 509. Clinical Issues. 3 Units.
Special topics related to systems/relational practice in marital and family therapy.

MFTH 514. Child and Family Therapy. 2 Units.
Specific advanced therapeutic techniques to address current relational and mental health problems in children and adolescents.

MFTH 515. Couple and Sex Therapy. 3 Units.
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 Units.
A family systems approach to separation, divorce, remarriage and step-family formation. Reviews research and family intervention strategies.

MFTH 517. Group Therapy. 2 Units.
Examines theory, research, and techniques of group therapy from a family systems perspective.

MFTH 518. Addictions and Eating Disorders. 3 Units.
A family systems approach to the assessment and treatment of eating disorders, alcoholism, and other addictions.

MFTH 519. Teaching in Higher Education. 2 Units.
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 Units.
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.

MFTH 522. E-Learning: Delivery and Management. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Examines and critiques the major theories of family from the fields of family studies and family sociology.

MFTH 538. Introduction to Relational Practice. 2 Units.
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 540. Introduction to Medical Family Therapy. 3 Units.
Provides an overview of medical family therapy and the theoretical models that can be applied to clinical work within medical settings. Addresses contextual issues that impact health, such as ethnicity, age, sexual orientation, religion, and socioeconomic status. Includes legal and ethical aspects of working in medical settings.

MFTH 541. Medical Family Therapy Seminar 1. 1 Unit.
In a workshop format incorporating presentation and discussion with faculty and peers, students develop their expertise in researching specific issues relevant to their practice. Focuses on evidence-based interventions and relevant psychotropic medications.

MFTH 542. Medical Family Therapy Seminar 2. 1 Unit.
In a workshop format that incorporates presentation and discussion with faculty and peers, students develop their understanding of the impact of spiritual practices on health, illness, grief, and loss. Focuses on culturally sensitive interventions.

MFTH 543. Medical Family Therapy Seminar 3. 1 Unit.
In a workshop format that incorporates presentation and discussion with faculty and peers, students enhance their professional development. Students learn to market their services to physicians and those in the health-care field, to network professionally, and to prepare for a job search.

MFTH 544. Health and Illness in Families. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

MFTH 604. Advanced Qualitative Methods. 4 Units.
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 Units.
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. Issues in MFT Research. 4 Units.
Addresses current issues in marriage and family therapy (MFT) research as a basis for ongoing inquiry and program development in the field. Emphasizes research history, trends in the field, and evidence-based approaches to recovery. Focuses on the process of designing, implementing, and disseminating research to support the field of MFT.

MFTH 607. Scholarly Skills. 1 Unit.
Orients counseling and family sciences doctoral degree students to the use of bibliographic search engines and databases for writing critical literature reviews. Provides instruction regarding search terms unique to specific databases, as well as on use of the EndNote software program to begin developing a bibliographic database for class projects, qualifying examinations, research papers, DMFT projects, and dissertations. Addresses the organization of a scholarly review paper using APA format and appropriate and effective professional writing style.

MFTH 608. Analysis and Presentation Issues in Research. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

MFTH 634. Practicum in Marital and Family Therapy. 3 Units.
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.

MFTH 635. Research in Family Systems Health Care. 4 Units.
Applies qualitative and quantitative research methods to the clinical study of family systems health care.

MFTH 636. Family Research. 4 Units.
Examines and critiques research pertaining to marriage and family relationships.

MFTH 637. Special Projects in Health and Illness in Families. 1,3 Unit.
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.

MFTH 668. Qualitative Research Practicum. 2 Units.
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 Unit.
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 Units.
Required research associated with the capstone project for the D.M.F.T. degree.

MFTH 697. Research. 1-6 Units.
Independent research relating to marital and family therapy or family studies under the direction of a faculty advisor.

MFTH 698. Dissertation Research. 1-10 Units.
Completes independent research contributing to the field of marital and family therapy.

MFTH 785. Professional Clinical Training in MFT. 1.5,3 Unit.
Supervised experience in the practice of marital and family therapy. Hours represent face-to-face direct client contact. May be repeated.

MFTH 785A. Begin Clinical Training in Couple, Marital, & Family Therapy. 0 Units.
Enables students to consult with clinical director to set up and begin supervised clinical practice in the field of couple, marital, and family therapy.

MFTH 785B. Clinical Training in Couple, Marital, and Family Therapy. 4 Units.
Documents completion of a minimum of 200 hours of direct client contact in the practice of couple, marital, and family therapy--with 40 hours of AAMFT-approved supervision or equivalent. At least half the client hours must be with more than one family member present. Students receive an IP in MFTH 785B for a maximum of five quarters, or until all hours are completed. Students can repeat MFTH 785B a maximum of five times in order to document the minimum program cognate of 1000 hours of clinical training and 200 hours of AAMFT-approved supervision or equivalent. The number of course repeats of MFTH 785B varies, depending on the verification of clinical advanced standing achieved through MFTH 785A. Students pay a course fee instead of unit tuition.

MFTH 786. Professional Development Proposal. 0 Units.
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 Units.
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.

MFTH 786B. Professional Internship in Marital and Family Therapy--Clinical. 2,4 Units.
Supervised client contact (face-to-face hours only) in the practice of marital and family therapy.

Marriage and Family (MFAM)

Courses

MFAM 416. Theories of Personality. 3 Units.
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 Units.
Introduces the psychology of behavioral disorders, with emphasis on etiology and symptomatology. Provides an overview of treatment modalities.

MFAM 501. Research Tools and Methodology: Quantitative. 3 Units.
Current social research methods, practice in the use of techniques, consideration of the philosophy of the scientific method, and familiarization with MFAM test instruments.

MFAM 502. Research Tools and Methodology: Qualitative. 3 Units.

MFAM 515. Crisis Intervention and Client-Centered Advocacy. 3 Units.
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 Units.
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 Socioeconomic Status in Therapy. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 in Therapy. 3 Units.
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. 3 Units.
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 and client-centered advocacy is a process important to the field. Explores the interface between MFTs, counselors, and other professionals. Students receive an IP until course criteria are met.

MFAM 536. Case Presentation Seminar and Documentation. 3 Units.
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 consumers' 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. Student receives an IP until course criteria are met.

MFAM 537. Case Presentation Seminar. 3 Units.
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. Students learn client-centered advocacy and special needs services. Students receive an IP until course criteria are met.

MFAM 538. Theory and Practice of Conflict Resolution. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Integrates Christian concepts and family therapy in a conceptual and clinical context.

MFAM 551. Family Therapy: Foundational Theories and Practice. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 multiaxial classifications of the DSM-IV as a practical basis for diagnostics.

MFAM 557. Object Relations Family Therapy. 2 Units.
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 Units.

MFAM 559. Cognitive-Behavioral Couples Therapy. 2,3 Units.
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 Units.
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 Units.
Provides advanced knowledge and training in Bowen theory as it applies to couples and family therapy.

MFAM 566. Psychopathology and Diagnostic Procedures: Personality. 2 Units.
Focuses on the etiology of marital dysfunction, specifically from a dual function of individual and systems psychopathology.

MFAM 567. Treating the Severely and Persistently Mentally Ill and The Recovery Process. 3 Units.
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 Units.
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 Units.
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.

MFAM 574. Family Therapy: Theory and Practice. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Students examine the theory of emotionally focused therapy and concentrate on the work and research of Susan Johnson.

MFAM 614. Law and Ethics. 3 Units.
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 confidentially. Current legal patterns and trends in the mental health profession. Exploration between the practitioner's sense of self and.

MFAM 615. Reflective Practice. 2 Units.
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.

MFAM 616. Cognitive Assessment. 4 Units.
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 Units.
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 Units.
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 and Legal Issues. 3 Units.
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. Covers legal and ethical issues for marriage and family therapist. Limited to students enrolled in clinical training. Students receive an IP while case criteria are being met.

MFAM 636. Case Presentation Seminar and Client-Centered Advocacy. 3 Units.
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, client-centered advocacy, recovery model, disability act and services, 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 are met.

MFAM 637. Case Presentation Seminar and Global Practices. 3 Units.
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. Students learn how marriage and family therapists practice worldwide and develop a deeper understanding of global practices Requires trainees to discuss how their relational case supports consumer advocacy, as well as collaboration with other mental health practitioners. Students receive an IP until course criteria are met.

MFAM 638. Family Therapy and Chemical Abuse. 3 Units.
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 Unit.
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 Units.
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 Units.
Presents information about addictions treatment for adults, adolescents, families, groups, and those with multiple diagnoses.

MFAM 651. AAMFT-Approved Supervisor Training. 3 Units.
Postgraduate: The didactic component requirement for AAMFT-approved supervisor designation.

MFAM 658. Reality Theory and Family Therapy. 2 Units.
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 Units.
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 Units.
Examines various experiential family theories. Laboratory experience included.

MFAM 665. Structural and Multidimensional Family Therapy. 2 Units.
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 Units.
Discusses major male and female sexual dysfunctions. Therapeutic processes of treatment.

MFAM 674. Human Sexual Behavior. 3 Units.
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 Unit.
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 Unit.
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 Units.
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 Units.
Directed research in the student's special field of interest in the family.

MFAM 697. Project. 1 Unit.
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.

MFAM 704. Marital and Family Therapy State Board Written Examination Review. 2 Units.
Training for candidates preparing to take the written examination for MFT licensure.

MFAM 705. Marital and Family Therapy State Board Oral Examination Review. 2 Units.
Provides training to candidates preparing to take the oral examination for MFT licensure.

MFAM 731. Clinical Training. 6 Units.
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 Units.
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 Unit.
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 Units.
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 Unit.
Supervised clinical counseling of individuals, couples, families, and children. One hour of individual supervision per week. Postgraduates only. Approved by internship coordinator.

Medical Education Services (MNES)

Courses

MNES 504. Orientation to Medicine. 6 Units.
Provides an interactive, patient-centered contextual learning experience for the purpose of fostering professionalism. A six-week course divided between the first two weeks after matriculation and the last four weeks at the end of the first 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 791. Third-year Elective. 3 Units.
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.

Medicine—Conjoint (MDCJ)

Courses

MDCJ 508. Cell Structure and Function. 8.5 Units.
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 509. Introduction to Medical Practice Management. 4 Units.
A comprehensive introductory course in management of a medical practice, with focus on eight major areas of responsibility (domains) within medical practice management: business operations, financial management, human resources management, information management, organizational governance, patient care systems, quality management, and risk management. Facilitates students' understanding of these eight essential domains, contributing to their ability to manage a more effective and efficient medical practice while providing high-quality patient care with better health outcomes.

MDCJ 510. Capstone Project. 3 Units.
Surveys literature focusing on a clinical problem addressed in the basic science courses of the first-year medical curriculum. Culminates with a term paper on the researched topic.

MDCJ 514. Immunology. 2.5 Units.
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 527. Cell Structure and Function. 8.5 Units.
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 528. Evidence-Based Medicine and Information Sciences. 3.5 Units.
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 529. Physical Diagnosis. 8 Units.
Provides a core foundation of knowledge, skills, values, and attitudes necessary for effective physician-patient communication and physical examination.

MDCJ 530. Pathophysiology and Applied Physical Diagnosis. 11 Units.
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 538. Medical Neuroscience. 3.5 Units.
Fundamentals of neuroanatomy and neurophysiology integrated in a clinical context with principles of the human nervous system.

MDCJ 539. Diseases of Neuroscience. 4 Units.
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. 1-18 Units.
Individual arrangements for students to study under the guidance of a program faculty member. May include reading, literature review, lectures or other special projects. Minimum of thirty hours required for each unit of credit. Does not fulfill requirements towards the M.D. degree.

MDCJ 821. Preventive Medicine and Public Health. 1.5-6 Units.
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. 1.5-30 Units.
Offers fourth-year medical students the opportunity to explore various aspects of whole person care, film and medicine, law and medicine, tropical medicine, and patient safety.

MDCJ 921. SM 4TH YR - ENROLL PERIOD 1. 25 Units.

MDCJ 922. SM 4TH YR - ENROLL PERIOD 2. 25 Units.

MDCJ 932. SM 1ST YR - ENROLL PERIOD 2. 8 Units.

MDCJ 942. SM 2ND YR - ENROLL PERIOD 2. 8 Units.

Medicine (MEDN)

Courses

MEDN 599. Medicine Directed Study. 1.5-18 Units.

MEDN 701. Medicine Clerkship. 1.5-15 Units.
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 Units.
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 Units.
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.

MEDN 891. Medicine Elective. 1.5-27 Units.
Provides an opportunity for students to explore various areas of internal medicine, such as cardiology, nephrology, gastroenterology, etc.

Microbiology (MICR)

Courses

MICR 515. Introduction to Bioinformatics and Genomics. 2 Units.
Introduces computer-aided analysis of macromolecules and the study of genes and their products on the level of whole genomes.

MICR 521. Medical Microbiology. 8 Units.
Systematically studies bacteria, fungi, viruses, and animal parasites of medical importance; pathogenic mechanisms; methods of identification and prevention; and clinical correlation.

MICR 530. Immunology. 4 Units.
Introduces selected topics of modern immunology to graduate students, emphasizing understanding key paradigms.

MICR 533. Biological Membranes. 3 Units.
Comprehensive description of biological membranes, oxidative phosphorylation, active transport, and signal transduction. Identical to membranes, transport, and signal transduction sections of CMBL 503.

MICR 534. Microbial Physiology. 3 Units.
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.

MICR 536. Laboratory in Gene Transfer and Gene Expression. 4 Units.
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 Units.
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.

MICR 539. Molecular Biology of Prokaryotes and Eukaryotes. 8 Units.
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.

MICR 540. Physiology and Molecular Genetics of Microbes. 3 Units.
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 Units.
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 Units.
Emerging concepts of immunology first discussed by the class and then reviewed by guest lecturers on a weekly schedule.

MICR 547. Medical Microbiology. 4.5 Units.
Systematically studies microorganisms of medical importance, pathogenic mechanisms, host-parasite relationships, and methods of identification.

MICR 565. Virology. 3 Units.
Fundamental aspects of virus-cell relationships of selected groups of animal viruses. Lectures and a library research project. Guest lecturers.

MICR 566. Cell Culture. 3 Units.
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 Units.
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 Unit.
Students required to register for this course every quarter throughout their training.

MICR 605. Colloquium. 1 Unit.
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 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.

MICR 698. Thesis. 1-3 Units.

MICR 699. Dissertation. 2-5 Units.

MICR 891. Microbiology Elective. 1.5-12 Units.
Offers fourth-year medical students the opportunity to explore various areas of microbiology, including research.

Natural Sciences (NSCI)

Courses

NSCI 124. Rocky Mountain Field Geology. 2,3 Units.
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. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. 4 Units.
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.

Neurology (NEUR)

Courses

NEUR 599. Directed Elective Study. 1.5-12 Units.

NEUR 701. Neurology Clerkship. 1.5-6 Units.
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. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of neurology, including research.

Neurosurgery (NEUS)

Courses

NEUS 891. Neurosurgery Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of neurosurgery, including research.

Nursing Bridge (NRSB)

Courses

NRSB 101. Critical Thinking and Learning Strategies for Nursing. 2 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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)

Courses

NRSG 214. Fundamentals of Professional Nursing. 8 Units.
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 Units.
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 Units.
Introduces care of the client presenting with psychiatric mental health symptoms. Emphasizes primary, secondary, and tertiary interventions to increase resilience and strengthen lines of defense/resistance for the client. Clinical experiences focus on communication skills, the nurse-patient relationship, and application of the nursing process in the management of the individual client system.

NRSG 224. Nursing Pathophysiology. 4 Units.
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 Units.
Designed for the LVN transfer student. Content includes introduction to baccalaureate nursing, physical assessment, and gerontology.

NRSG 244. Strategies for Academic Success. 1 Unit.
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 Units.
Opportunity for clinical learning in a selected area of nursing.

NRSG 305. Nursing Pharmacology. 3 Units.
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 Units.
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.

NRSG 309. Gerontological Nursing. 4 Units.
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.

NRSG 314. Obstetrical and Neonatal Nursing. 6 Units.
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 Units.
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.

NRSG 316. The Nursing Role in Health Promotion. 4 Units.
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 Units.
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.

NRSG 324. Nursing Informatics and Evidence-Based Practice. 3 Units.
Applies information technology systems to evidence-based practice, education, and communication in health-care settings. Reviews academic and research-based publications and writing formats. Addresses quality of care, patient safety, and ethical issues. An IP notation assigned pending successful completion of LLEAP requirements.

NRSG 337. Strategies for Professional Transition. 4 Units.
Focuses on growth and enhancement of the professional nurse. Includes the following topics: (1) professional nursing in a changing health-care delivery system, (2) exploration of identified nursing role issues, (3) legal and ethical foundations of professional nursing, (4) socialization to professional nursing roles, and (5) theoretical foundations of professional nursing. Emphasizes scholarship for evidence-based practice. Based on learning objectives for career growth, students assess and strengthen the application of skills in communication, research, professional responsibility and values, teaching and learning process, management, nursing process, and individual empowerment for themselves, clients, and communities. Includes orientation to LLU campus/University setting, assessment and development of learning objectives, and portfolio development.

NRSG 399. Nursing Externship. 1 Unit.
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.

NRSG 404. Introduction to Epidemiology for Nursing. 3 Units.
Explores historic and current epidemiological investigation methods, evaluates health-care study designs, and analyzes utilization of evidence-based nursing practices impacting delivery of care on personal, organizational, community, national, and global levels. In-depth exploration of interdisciplinary communication, collaboration, and development of nursing interventions impacting disease identification, control, and management. Comprehensive focus on assessment and measurement of disease occurrence, frequency and prevention of illness, infection control practices, and evaluation of evidence-based research impacting nursing care.

NRSG 407. Complex Nursing Concepts of Health and Disease. 6 Units.
Explores the complex pathophysiological concepts across the lifespan using a systems approach. Applies multifaceted alterations at the cell/system levels and potential resulting functional changes to the nursing practice. Presents comprehensive clinical case studies based on theory to support nursing assessments and interventions. Uses theories relating etiology, pathogenesis, and clinical manifestations to investigate and understand the common disease processes. Builds upon the underlying concepts of previous anatomy and physiology courses. Through online discussion and simulation-based practice, teaches evidence-based advanced health assessment theory and its application across the lifespan.

NRSG 408. Critical Care Nursing. 6 Units.
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.

NRSG 409. Home Health Nursing. 3 Units.
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.

NRSG 414. Management and Leadership for the Working Nurse. 6 Units.
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.

NRSG 415. Community Mental Health Nursing. 4 Units.
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.

NRSG 416. Public Health Nursing. 4 Units.
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.

NRSG 416L. Public Health Nursing Clinical Lab. 4 Units.
Clinical application focusing on the optimal wellness of the community as client. Intervention strategies emphasizing primary, secondary, and tertiary prevention with micro-/macro-client systems.

NRSG 417. Professional Nursing Practicum. 7 Units.
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.

NRSG 418. Capstone Nursing Practicum. 8 Units.
Application of theoretical knowledge and skills in a preceptored clinical experience. Integrates selected management principles into clinical practice.

NRSG 419. Capstone: Management and Leadership in Nursing. 4,5 Units.
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.

NRSG 420. Professional Preparation. 2 Units.
Preparation for the NCLEX-RN examination, with emphasis on career development and licensure issues.

NRSG 424. Professional Practice for the Working RN. 7 Units.
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.

NRSG 429. Nursing Research. 3 Units.
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. 3-12 Units.
An elective course open to students seeking clinical experience in nursing.

NRSG 499. Directed Study. 1-8 Units.
Opportunity for clinical experience in a selected area of nursing.

NRSG 509. Guided Study. 6 Units.
Opportunity for study in a particular area of nursing, under faculty direction.

NRSG 514. Advanced Physiology and Pathophysiology for the Nurse Anesthetist II. 4 Units.
Study of the causes, processes, and clinical manifestations of disease and the associated anesthesia management of patients with specific disorders.

NRSG 515. Health Policy. 3 Units.
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 Units.
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 Units.
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 518. Orientation to Clinical Practice. 1 Unit.
Orientation to the clinical setting through supervised experiences in the management of patients throughout the perianesthetic continuum. Focuses on preparation of the anesthetizing location and successful creation and implementation of an anesthetic plan of care. Emphasizes patient safety and prevention of iatrogenic complications. Requires participation in weekly grand rounds.

NRSG 519. Advanced Role Development for the Nurse Anesthetist. 3 Units.
Examines advanced practice registered nurse roles and core competencies. Focuses on issues relevant to nurse anesthesia practice, including history of nurse anesthesia, role of the nurse anesthetist in California, and an overview of ethical medical-legal issues. Emphasizes collaborative communication and the nurse anesthetist as educator. Per week: theory three hours, practicum zero hours.

NRSG 520. Principles of Nurse Anesthesia Practice I. 4 Units.
Examines basic principles of anesthesia related to the perianesthetic management of patients undergoing surgical, diagnostic, and therapeutic procedures. Per week: theory 3 hours, practicum 1 hour.

NRSG 521. Principles of Nurse Anesthesia Practice II. 4 Units.
Builds upon basic principles of anesthesia, and introduces advanced concepts in the individualized perianesthetic management of patients with a variety of coexisting diseases and disorders who are undergoing diverse procedures. Per week: theory 3 hours, practicum 1 hour.

NRSG 522. Principles of Nurse Anesthesia Practice III. 5 Units.
Applies basic and advanced principles of anesthesia to the individualized perianesthetic management of patients with various coexisting diseases and disorders across the life span. Per week: theory 4 hours, practicum 1 hour.

NRSG 523. Principles of Nurse Anesthesia Practice IV. 3 Units.
Focuses on the perianesthetic management of patients impacted by increasingly complex coexisting diseases and/or procedures. Includes an examination of various regional anesthesia techniques and associated considerations. Per week: theory 2 hours, practicum 1 hour.

NRSG 524. Clinical Practicum and Correlation Conference I. 3 Units.
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.

NRSG 525. Clinical Practicum and Correlation Conference II. 4 Units.
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.

NRSG 526. Clinical Practicum and Correlation Conference III. 4 Units.
Continued supervised experience in the full scope of anesthesia practice, focusing on predicting and preventing anesthetic management issues in cases with increasing complexity. 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.

NRSG 527. Clinical Practicum and Correlation Conference IV. 4 Units.
Continued supervised experience in the full scope of anesthesia practice. Emphasizes exposure to advanced anesthetic and surgical techniques. 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.

NRSG 528. Clinical Practicum and Correlation Conference V. 4 Units.
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 one hour, practicum three hours.

NRSG 529. Clinical Practicum and Correlation Conference VI. 4 Units.
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 one hour, practicum three hours.

NRSG 530. Adult - Gerontology I. 4 Units.
Focuses on theoretical basis of advanced nursing practice for adult and aging clients related to health-care delivery and continuity of chronic illness care in vulnerable populations. Contents applied to selected client populations.

NRSG 531. Adult - Gerontology II. 4 Units.
Focuses on the physiological basis of advanced practice nursing care of adult and aging clients with specific acute and chronic health conditions. Utilizes a systems approach to the management of complex patient problems.

NRSG 532. Adult -Gerontology III. 4 Units.
Focuses on issues relevant to the clinical nurse specialist caring for the adult and aging client. Includes topics and applications relevant to organization leadership, clinical reasoning, quality improvement, collaboration, consultation, finances, and other concepts necessary for CNS role implementation.

NRSG 533. Adult - Gerontology: Clinical Practicum. 2-8 Units.
Experiential learning of the advanced practice role under the guidance of faculty and clinical experts in the area of adult and aging. Emphasizes the clinical competencies outlined by AACN.

NRSG 535. Pediatrics I. 4 Units.
Focuses on theoretical basis of advanced nursing practice for the child and family related to health-care delivery and continuity of chronic illness care in vulnerable populations. Students apply content to selected client populations.

NRSG 536. Pediatrics II. 4 Units.
Focuses on the pathophysiological basis of advanced practice nursing care of the child with specific acute and chronic health conditions. Utilizes a systems approach to the management of complex patient problems.

NRSG 537. Pediatrics III. 4 Units.
Focuses on issues relevant to the clinical nurse specialist caring for the child and family. Includes topics and applications relevant to organization leadership, clinical reasoning, quality improvement, collaboration, consultation, finances, and other concepts necessary for CNS role implementation.

NRSG 538. Pediatrics: Practicum. 2-8 Units.
Experiential learning of the CNS advanced practice role under the guidance of faculty and clinical experts in the area of the child and family. Emphasizes the clinical competencies outlined by AACN.

NRSG 543. Clinical Practicum: Nurse Educator. 3 Units.
Focuses on in-depth clinical expertise in selected area of nursing practice. Considers strategies to use clinical expertise in facilitating future nursing students' learning.

NRSG 544. Teaching and Learning Theory. 3 Units.
Explores the components of the teaching-learning process. Opportunity provided for students to practice specific teaching strategies.

NRSG 545. Teaching Practicum. 3,4 Units.
Assists the student in developing the ability to teach both theory and clinical components in the specialty area of choice. 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 zero hours, practicum nine-to-twelve hours.

NRSG 546. Curriculum Development in Higher Education. 3 Units.
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 Units.
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. 1-10 Units.
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.

NRSG 549. Assessment of Learning Outcomes. 3 Units.
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. Primary Care Pediatric Nurse Practitioner I. 4 Units.
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 three hours, practicum three hours.

NRSG 552. Primary Care Pediatric Nurse Practitioner II. 7 Units.
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, skills laboratory 3 hours, practicum 9 hours.

NRSG 553. Primary Care Pediatric Nurse Practitioner III. 7 Units.
Continues development of the PNP primary care role in assessment and management of chronic or complex illnesses for children birth through adolescence. Per week: theory three hours, practicum twelve hours.

NRSG 554. Primary Care Pediatric Nurse Practitioner IV. 7 Units.
Continues development of the PNP primary care role in assessment and management of chronic or complex illnesses for children birth through adolescence. Per week: theory two hours, practicum fifteen hours.

NRSG 555. Pharmacology in Advanced Practice I. 3 Units.
Principles of pharmacodynamics, pharmacotherapeutics, and pharmacokinetics. Overview of specific major drug classifications, discussion of the therapeutic use of drugs, and application to medical conditions.

NRSG 556. Pharmacology in Advanced Practice II. 2 Units.
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.

NRSG 557. Primary Care Pediatric Nurse Practitioner V. 5 Units.
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 zero hours, practicum fifteen hours.

NRSG 558. Advanced Pharmacology for Nurse Anesthesia I. 6 Units.
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 six hours, practicum zero hours.

NRSG 559. Advanced Pharmacology for Nurse Anesthesia II. 5 Units.
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 five hours, practicum zero hours.

NRSG 560. Neonatal Pharmacology. 2 Units.
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.

NRSG 561. Primary Care Adult-Gerontology Nurse Practitioner I. 4 Units.
Introduces the role, professional responsibilities, and clinical practice of the primary care adult-gerontology nurse practitioner (A-GNP). Focuses on primary health-care concepts related to health maintenance and promotion of optimal wellness and to common illnesses of the adult. Per week: lecture two hours, practicum six hours.

NRSG 562. Primary Care Adult-Gerontology Nurse Practitioner II. 6 Units.
Focuses on the A-GNP role of health promotion and management of common acute and chronic conditions across the adult life span. Per week: lecture three hours, practicum nine hours.

NRSG 563. Primary Care Adult-Gerontology Nurse Practitioner III. 6 Units.
Continues focus on the A-GNP role of health promotion and management of patients with acute and chronic conditions across the adult life span. Per week: lecture three hours, practicum nine hours.

NRSG 564. Primary Care Adult-Gerontology Nurse Practitioner IV. 7 Units.
Focuses on health maintenance and management of patients with complex acute and chronic conditions across the adult life span. Per week: lecture three hours, practicum twelve hours.

NRSG 565. Primary Care Adult-Gerontology Nurse Practitioner V. 6 Units.
Final clinical practicum. Emphasis on integrating prior learning and increasing clinical competence in primary care settings. Includes case study discussions and on-line certification practice testing. Per week: lecture zero hours, practicum eighteen hours.

NRSG 566. Advanced Physical Assessment for the Nurse Anesthetist. 3 Units.
Focuses on health history and physical assessment as it relates to the perioperative patient population. Includes invasive and noninvasive systems assessment and diagnostic methods.

NRSG 567. Scientific Foundations of Nurse Anesthesia Practice. 2 Units.
In-depth study of the principles of mathematics, chemistry, and physics as they relate to nurse anesthesia practice. Culminates with application of principles to the design and function of anesthesia delivery systems.

NRSG 569. Primary Care Adult-Gerontology Nurse Practitioner: Fragile Elders. 4 Units.
Continues development of the A-GNP role of health promotion, maintenance, and management--with focus on fragile elders with acute and chronic conditions. Per week: lecture three hours, practicum three hours.

NRSG 571. Advanced Pharmacology for Nurse Anesthesia I. 6 Units.
First of three 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 six hours, practicum zero hours.

NRSG 572. Advanced Pharmacology for Nurse Anesthesia II. 3 Units.
Second of three distance education technology-based courses focused on development of knowledge and application of pharmacology to nurse anesthesia clinical practice. Includes muscle relaxants, and an introduction to autonomic nervous system pharmacology. Per week: theory three hours, practicum zero hours.

NRSG 573. Advanced Pharmacology for Nurse Anesthesia III. 2 Units.
Third of three distance education technology-based courses focused on development of knowledge and application of pharmacology to nurse anesthesia clinical practice.. Includes autonomic nervous system pharmacology, anti-arrhythmic medications, and medications for pulmonary and cardiovascular disease. Per week: theory two hours, practicum zero hours.

NRSG 575. Strategies for Theory Development in Nursing. 4 Units.
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. 5 Units.
Focuses on mental health promotion and assessment of psychiatric disorders occurring in children, adolescents, adults, and families across the life span.

NRSG 582. Psychiatric Nurse Practitioner II. 4 Units.
Focuses on psychopharmacology principles and treatment in clinical management of psychiatric disorders and symptoms across the life span.

NRSG 583. Psychiatric Nurse Practitioner III. 9 Units.
Focuses on modalities of evidence-based treatment of children, adolescents, and family with common, chronic, and complex psychopathology; and on clinical experience in the assessment and management of these psychiatric disorders.

NRSG 584. Psychiatric Nurse Practitioner IV. 9 Units.
Focuses on modalities of evidence-based treatment of the adult, geriatric, and family with common, chronic, and complex psychopathology; and on clinical experience in the assessment and management of these psychiatric disorders.

NRSG 585. Psychiatric Nurse Practitioner V. 6 Units.
Final clinical practicum with opportunity to develop autonomy while working with preceptors in clinical settings. Focuses on integration of learning from all prior psychiatric nurse practitioner courses and clinical experiences. Per week: theory zero hours, practicum eighteen hours.

NRSG 601. DNP Professional Development. 4 Units.
Introduces professional DNP role development, professional issues, and advanced writing skills. Explores development of and rationale for the DNP degree. Examines roles of the DNP-prepared advanced practice nurse as researcher, scholarly writer, health policy advocate, and nurse leader--along with considerations for obtaining the first DNP position.

NRSG 602. Evidence-based Models of Advanced Practice and Health-Care Outcomes. 3 Units.
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 Units.
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 twenty hours, practice thirty hours.

NRSG 605. Vulnerable Populations. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. Evaluation of Cultural Competence in Nursing Practice. 3 Units.
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 Units.
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 zero hours, practicum six-to-thirty-six hours.

NRSG 618A. Writing for Publication. 1 Unit.
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. 2 Units.
Second of a two-course mentored writing experience that includes information, resources, and guidance that facilitate development of a publishable manuscript.

NRSG 619. Neonatal Nurse Practitioner I: Neonatal Advanced Physical Assessment. 4 Units.
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 1 hour.

NRSG 620. Neonatal Nurse Practitioner II. 5 Units.
Focuses on concepts and principles of genetics, embryology, physiology, pathophysiology, pharmacology, and growth and development related to assessment and management of the high-risk newborn. Includes acquisition of skills through simulation and other modalities, as well as direct patient management. Per week: theory 4 hours, skills laboratory 3 hours, practicum 3 hours.

NRSG 621. Neonatal Nurse Practitioner III. 5 Units.
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 3 hours, practicum 6 hours.

NRSG 622. Neonatal Nurse Practitioner IV. 8 Units.
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 4 hours, practicum 16 hours.

NRSG 623. Neonatal Nurse Practitioner V: Practicum. 13 Units.
Synthesizes concepts, principles, theories, knowledge, and skills from the preceding advanced neonatal critical-care nursing courses to practice. Per week: theory zero hours, practicum thirty-nine hours.

NRSG 625. The Practice Mentor. 3 Units.
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 627. DNP Project Development Seminar. 1 Unit.
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. 1-12 Units.
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 3-36 hours.

NRSG 629. Neonatal Nurse Practitioner V. 8 Units.
Focuses on concepts and principles of pathophysiology and neonatal disease entities and disorders in the management of the sick/critically ill neonate, with emphasis on complex and chronic conditions. Per week: theory 4 hours, practicum 12 hours.

NRSG 630. Neonatal Nurse Practitioner VI: Practicum. 9 Units.
Synthesizes concepts, principles, theories, knowledge, and skills from the preceding advanced neonatal critical-care nursing courses to practice. Preparation for national certification examination. Per week: theory1 hour, practicum 24 hours.

NRSG 634A. DNP Project. 3 Units.
The first of four courses in development of the DNP project. Focuses on identifying and describing in detail the project problem, forming the project guidance committee and project team in the practice setting, and beginning development of the DNP project paper and PowerPoint presentation. An IP assigned at the end of each quarter until all steps are completed.

NRSG 634B. DNP Project. 3 Units.
The second of four courses in the development of the DNP project. Student comprehensively reviews and critiques relevant literature, works through the IRB approval process, pilots the project in the practice setting, and continues developing the DNP project paper and PowerPoint presentation. An IP assigned at the end of each quarter until all steps are completed.

NRSG 634C. DNP Project. 3 Units.
The third of four courses in the development of the DNP project. Student implements the change project using appropriate communication strategies with key personnel, adapts change strategies appropriately, and continues developing the DNP project paper and PowerPoint presentation. An IP assigned at the end of each quarter until all steps are completed.

NRSG 634D. DNP Project. 3 Units.
The last of four courses in the development of the DNP project. Student monitors and analyzes the change project, evaluates key variables, implements adjustments as needed, identifies implications for future work, continues developing the DNP project paper and PowerPoint presentation, and develops results for dissemination through publication and presentation. An IP assigned at the end of each quarter until all steps are completed.

NRSG 636. Methods of Disciplined Inquiry. 2 Units.
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.

NRSG 637. LLU Scholars Seminar. 1 Unit.
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.

NRSG 650. Family Nurse Practitioner: Children and Adolescents. 4 Units.
Focuses on the FNP role of health promotion and management of common conditions in infants, children, and adolescents. Emphasizes normal growth and development and principles of anticipatory guidance. Per week: theory 3 hours, clinical 3 hours.

NRSG 651. Advanced Physical Assessment. 3 Units.
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 two hours, practicum three hours.

NRSG 652. Family Nurse Practitioner I. 4 Units.
Introduces the role, professional responsibilities, and clinical practice of the family nurse practitioner (FNP). Focuses on primary health-care concepts related to health promotion, maintenance, and common illnesses across the life span. Per week: theory two hours, practicum six hours.

NRSG 653. Family Nurse Practitioner II. 6 Units.
Focuses on the FNP role of health promotion and management of common acute and chronic conditions across the life span. Per week: lecture three hours, practicum nine hours.

NRSG 654. Family Nurse Practitioner III. 7 Units.
Continues focus on the FNP role of health promotion and management of patients with acute and chronic conditions across the life span. Per week: lecture three hours, practicum twelve hours.

NRSG 655. Family Nurse Practitioner IV. 7 Units.
Focuses on health promotion, maintenance and management of patients with complex acute and chronic conditions across the life span. Per week: lecture three hours, practicum twelve hours.

NRSG 656. Family Nurse Practitioner V. 7 Units.
Final clinical practicum. Emphasis on integrating prior learning and increasing clinical competence in primary care settings. Includes case study discussions and on-line certification practice testing. Per week: lecture zero hours, practicum twenty-one hours.

NRSG 660. Advanced Qualitative Research Methods. 4 Units.
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.

NRSG 664. Nursing Science Seminar. 1 Unit.
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.

NRSG 665. Philosophical Foundations of Nursing Science. 4 Units.
Explores the development of scientific thought and knowledge. Examines sources of knowledge and the assumptions underlying major approaches to scientific inquiry. Critiques these approaches in relation to knowledge development of nursing science.

NRSG 667. Spiritual Care: Theory, Research and Practice. 3,4 Units.
Examines spirituality and religiosity in the context of health and illness, and provides or coaches others in providing spiritually sensitive health care. Emphasizes empirical, personal, and ethical sources of knowledge about spirituality and religiosity, using knowledge generated in health care, psychology, anthropology, and other fields. Additional project required for fourth unit.

NRSG 680. Intermediate Statistics. 3 Units.
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.

NRSG 684. Research Methods. 4 Units.
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.

NRSG 686. Advanced Quantitative Research Methods. 4 Units.
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.

NRSG 687. Applied Psychometrics for Health Care. 4 Units.
Advanced study of psychological tests and application in the health sciences. Includes review of prerequisite basic statistics (correlation and regression) and an introduction to more advanced analyses important to test development and evaluation (exploratory and confirmatory factor analysis). Focuses on methods of test development; procedures for evaluating psychometric adequacy (reliability, validity, and generalization); and practical issues in the use and interpretation of test scores (scoring, cultural diversity, and test bias).

NRSG 693. Experience Portfolio. 1-16 Units.
Portfolio preparation documents nurse practitioner educational program, including the clinical practice component.

NRSG 696. Mentored Research. 2 Units.
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).

NRSG 697. Research. 1-8 Units.
Development, conduct, analysis, and defense of dissertation research.

NRSG 901. PRE-COURSE ASSIGNMENTS. 0 Units.

Nutrition (NUTR)

Courses

NUTR 490. Topics in Foods and Food Preparation. 1 Unit.
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 Units.
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 509. Public Health Nutrition and Biology. 3 Units.
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 Units.
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 517. Advanced Nutrition I: Carbohydrates and Lipids. 4 Units.
Advanced study of the nutrition, metabolism, and function of carbohydrates and lipids as related to health and disease.

NUTR 518. Advanced Nutrition II: Proteins, Vitamins, and Minerals. 4 Units.
Advanced study of the nutrition, metabolism, and function of proteins, vitamins, and minerals as related to health and disease.

NUTR 519. Phytochemicals. 2 Units.
Discusses the role of phytochemicals in disease prevention and treatment. Reviews current research in this area.

NUTR 525. Nutrition Policy, Programs, and Services. 3 Units.
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 Units.
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 Units.
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 Unit.
The science of nutrition as related to the Seventh-day Adventist philosophy of health.

NUTR 529. Health Aspects of Vegetarian Eating. 2,3 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 537. Nutrition Education Practicum. 1 Unit.
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 Units.
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 Units.
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.

NUTR 543. Concepts in Nutritional Epidemiology. 3 Units.
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 Units.
Medical nutrition therapy and care for a variety of clinical disorders with nutritional implications. Laboratory included.

NUTR 546. Clinical Nutrition II. 3 Units.
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.

NUTR 554. Critical Care Nutrition I. 3 Units.
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.

NUTR 555. Critical Care Nutrition II. 3 Units.
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.

NUTR 556. Nutritional Applications in Lifestyle Intervention. 1 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Discussion of current issues of importance in international nutrition.

NUTR 586. Mediterranean Diet: Nutrition, Cuisine, and Culture. 3,4 Units.
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 Units.
Current topics in nutrition. May be repeated for additional credit.

NUTR 597. Special Topics in Clinical Nutrition. 1-3 Units.
Current topics in clinical nutrition. May be repeated for additional credit.

NUTR 605. Seminar in Nutrition. 1 Unit.
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.

NUTR 608. Doctoral Seminar in Public Health Nutrition. 1-3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Student prepares manuscript presenting results of doctoral research study. Limited to doctoral degree students.

NUTR 699. Applied Research. 2 Units.
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.

NUTR 798B. Field Practicum. 6 Units.
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.

NUTR 798D. Field Practicum. 12 Units.
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 Units.
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 Units.
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)

Courses

OCTH 301. Introduction to Occupational Therapy. 2 Units.
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 four hours, laboratory two hours.

OCTH 305. Terminology for Occupational Therapy Practice. 2 Units.
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 Units.
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 one hour, group process two hours.

OCTH 309. Human Occupation across the Lifespan. 5 Units.
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 Units.
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 two hours.

OCTH 315. Therapeutic Media. 2 Units.
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 Units.
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: three hours.

OCTH 317. Occupational Therapy Practicum I. 2 Units.
Observation and supervised experience in clinical and/or community-based programs. Per quarter: eighty hours.

OCTH 318. Occupational Therapy Practicum II. 2 Units.
Observation and supervised experience in clinical and/or community-based programs. Per quarter: eighty hours.

OCTH 321. Intervention Techniques and Strategies I. 2 Units.
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 one hour, laboratory two hours.

OCTH 331. Functional Kinesiology. 3 Units.
Applies anatomical and mechanical fundamentals of human motion to the analysis of motor skills, including muscle testing and gonismetry. Emphasizes the upper extremities. Per week: lecture two hours, laboratory two hours.

OCTH 341. Functional Neuroscience. 3 Units.
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.

OCTH 411. Introduction to Occupational Therapy Research. 2 Units.
Critically analyzes evidence-based research and qualitative studies. Introduces various approaches to questioning professional practice outcomes.

OCTH 417. Occupational Therapy Practicum III. 2 Units.
Observation and supervised experience in clinical and/or community-based programs. Per quarter: eighty hours.

OCTH 431. Intervention Techniques and Strategies II. 3 Units.
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 two hours, laboratory three hours.

OCTH 435. Upper-Extremity Rehabilitation and Splinting. 3 Units.
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 two hours, laboratory two hours.

OCTH 441. Fundamentals of Case Management. 4 Units.
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 Units.
Introduces application of critical-reasoning process; effective communication skills with clients, patients, families, and team members. Documentation and overall professional skill building.

OCTH 443. Case Analysis, Reasoning, and Management II. 2 Units.
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 two hours.

OCTH 451. Disorders of Human Performance I. 5 Units.
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.

OCTH 452. Disorders of Human Performance II. 5 Units.
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.

OCTH 453. Disorders of Human Performance III. 4 Units.
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.

OCTH 455. Case Analysis, Reasoning, and Management III. 3 Units.
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.

OCTH 456. Community Practice. 4 Units.
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 Units.
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 Units.
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 501. Professional Foundations I. 3 Units.
Foundational understanding of the philosophical and historical underpinnings of the occupational therapy profession, and the unique role and therapeutic use of occupation across multiple settings. Introduces the professional paradigms of frames of reference, professional organizations, and occupation in health and society. Initiates the process of therapeutic use of self as a reflective professional.

OCTH 502. Professional Foundations II: Human Occupation. 3 Units.
Develops an understanding of how occupation, embedded in a diverse social-cultural context, is shaped and changed throughout the human lifespan. Examines the concept of occupation, as defined in occupational therapy and occupational science, in the context of its historical relationship to human adaptation and health. Explores social participation through individual and group occupations.

OCTH 503. Professional Foundations III. 1 Unit.
Explores occupational science as a foundation for understanding the form, function, and meaning of occupation to inform intervention and guide research for health promotion and wellness. Includes basic elements of grant writing, and opportunity to create a mock grant proposal for innovative program development.

OCTH 504. Professional Foundations IV. 2 Units.
Introduces leadership and management with roles and responsibilities specific to occupational therapy practice. Explores standards of practice, supervision, and advocacy options for populations and the profession.

OCTH 505. Occupation-Based Activity Analysis. 3 Units.
Analyzes activities in all areas of occupations based on dynamic interaction of client factors, performance skills, performance patterns, and contexts. Includes in-depth understanding of the kinesiology components of joint mobility, stability, tone, and power. Relates activity demands to their influence on performance in occupations. Applies concepts to grading and adapting activities and occupations.

OCTH 506. Functional Neuroscience. 3 Units.
Provides a foundational understanding of neuroscience--including anatomy and function of the central and peripheral nervous systems, neurological conditions related to anatomical structure and function, and relationship of the nervous system to engagement in occupation.

OCTH 507. Trends in Neuroscience. 2 Units.
Explores current research and practice trends in neuroscience for enhancing understanding of occupational engagement as it relates to health and well-being.

OCTH 508. Splinting. 1 Unit.
Design and fabrication of splints, with reference to various populations across the lifespan. Emphasizes safety precautions and monitoring.

OCTH 509. Design and Technology. 2 Units.
Introduces a broad spectrum of assistive technology to address the gap in occupational performance by examination and assessment of theoretical and societal issues, population and policy trends, scientific advances, environmental constraints, and funding opportunities. Includes case studies and hands-on use of assistive technology to facilitate evaluation, basic design, and resource coordination of technological devices to meet a variety of client and population needs. Explores principles of universal design and public policy that support engagement in the home and community environments.

OCTH 510. Functional Kinesiology. 1 Unit.
Applies anatomical and mechanical fundamentals of human motion to conduct muscle testing and goniometry. Emphasizes upper extremity.

OCTH 511. Conditions in Occupational Therapy: Orthopedic. 4 Units.
Common orthopedic and rheumatological disorders, and the implications for participation in occupations across the lifespan. Introduces safety issues surrounding these disorders as, well as the influence of contexts.

OCTH 512. Conditions in Occupational Therapy: Neurological. 4 Units.
Reviews common neurological disorders and the implications for participation in occupations across the lifespan. Examines guiding theories and evidence-based practice. Introduces safety issues surrounding these disorders, as well as the influence of contexts.

OCTH 514. Conditions in Occupational Therapy: Behavioral Health. 4 Units.
Examines common disorders and guiding theories related to behavioral health and the implications for participation in occupations across the lifespan. Explores roles and how occupations and roles are related, resulting in healthy emotional connections and occupational participation. Discusses safety issues surrounding these disorders, as well as the influence of context.

OCTH 515. Conditions in Occupational Therapy: Infants, Children, Youth. 4 Units.
Reviews common disorders and conditions, along with implications for participation in occupations for infants, children, and youth from individual and family perspectives. Examines guiding theories, evidence-based practice, federal laws, and policies related to these populations. Introduces safety issues surrounding these disorders, as well as the influence of contexts.

OCTH 516. Conditions in Occupational Therapy: General Medicine. 4 Units.
Reviews common general medicine disorders and the implications for participation in occupations across the lifespan in both traditional and nontraditional settings. Examines guiding theories and evidence-based practice. Introduces safety issues and standard protocols surrounding these disorders. as well as the influence of contexts.

OCTH 517. Introduction to Physical Agent Modalities. 1 Unit.
Prepares the student for use of physical agent modalities with differential diagnoses in multiple practice settings. Discusses treatment goals and use of physical agent modalities within practice guidelines, assesses common practice techniques, explores regulations and safety, and reviews the process for obtaining advanced practice certification in physical agent modalities.

OCTH 521. Analysis and Intervention I: Orthopedic. 4 Units.
Assesses common orthopedic conditions, including formal manual muscle testing and goniometry. Includes safe transfer techniques, as well as training in the use of adaptive equipment. Treatment planning emphasizes evaluation findings and safety considerations of the client's condition and contexts.

OCTH 522. Analysis and Intervention: Behavioral Health. 4 Units.
Introduces assessments for common behavioral health diagnoses. Emphasizes designing and coordinating occupation-based and client-centered interventions. Demonstrates ability to facilitate groups, and implements de-escalation strategies. Applies wholistic approach in working with clients to promote health and participation in a variety of contexts.

OCTH 523. Analysis and Intervention: Neurological. 3 Units.
Introduction to assessing clients with common neurological disorders--including cognitive, visual/perceptual, balance, and coordination skills; as well as the condition?s impact on participation in occupations. Demonstrates ability to safely transfer clients, and provides training in the adaptation of tools, techniques, and environment. Emphasizes treatment planning based on the synthesis of evaluation findings and safety considerations of the client?s condition and contexts.

OCTH 524. Analysis and Intervention: Infants, Children, Youth. 3 Units.
Introduction to assessments for common diagnoses and conditions of infants, children, and youth. Emphasizes designing and coordinating evidence-based, client-centered interventions. Design and coordinate groups, and family-centered care. Applies wholistic approach in working with clients to promote health and participation in a variety of contexts.

OCTH 526. Business Topics in Health Care. 2,3 Units.
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 527. Analysis and Intervention: General Medicine. 4 Units.
Student synthesizes evaluation and assessments to develop intervention plans for clients with general medicine conditions, and to promote participation in occupations. Student demonstrates ability to safely transfer clients, as well as to provide patient and family training; as well as adaptation of tools, techniques, and environment.

OCTH 531. Sensorimotor I. 2 Units.
Includes current rehabilitation trends and best practice relevant to adult neurological rehabilitation. Emphasizes sensorimotor approaches to rehabilitation, CIMT, NDT, PNF, Rood, Brunnstrom, and clinical decision making. Integrates neurologic and orthopedic rehabilitation strategies through activities of daily living.

OCTH 532. Sensorimotor II. 2 Units.
Sensorimotor intervention trends and specialty areas, including sensory integration, NDT, Rood, infant massage, and fundamentals of developmental feeding. Promotes roles and participation in areas of occupation--such as activities of daily living, play, sleep, and education.

OCTH 533. Advanced Fieldwork Experience. 1-12 Units.
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 Units.
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.

OCTH 542. Current Trends in Occupational Therapy Practice II. 3 Units.
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 Units.
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 545. Current Trends in Occupational Therapy Practice. 3 Units.
Analysis of current trends in the field of occupational therapy. Includes health-care systems, funding, legislature and law, regulatory issues and agencies, professional responsibilities and ethics, political developments, and intradisciplinary roles.

OCTH 551. Occupation and Wellness. 3 Units.
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 Units.
Provides the student with an opportunity to explore a variety of topics relevant to transitioning into occupational therapy professional practice.

OCTH 560. Entrepreneurship. 2 Units.
Introduces business for occupational therapy practitioners, including financial statements and budgetary processes, marketing, management, and consultation. Emphasizes the use of strategic planning for decision-making processes of program development, productivity, and accountability.

OCTH 561. Program Development/Design I. 3 Units.
Focuses on selection, research, and design of programs pertinent to occupational therapy practice.

OCTH 562. Program Development/Design II. 3 Units.
Implements program planning, culminating with program evaluation and outcome assessment.

OCTH 563. Professional Competency Development I. 1 Unit.
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 Unit.
Student continues development of the special interest topic, identifying resources and observation sources. Progress report and regular meetings with faculty advisor required.

OCTH 565. Professional Competency Development III. 1 Unit.
Student completes the special interest topic and prepares to make an oral presentation.

OCTH 570. Critical Inquiry and Evidence-Based Practice I. 1 Unit.
Defines evidence-based practice (EBP) and its relevance to occupational therapy practice and professional growth. Describes steps to complete EBP and discusses common statistical methods used in occupational therapy research. Includes philosophical approaches to scientific inquiry, range of research designs, roles of variables, and ethics.

OCTH 571. Research I. 3 Units.
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.

OCTH 572. Research II. 2 Units.
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 Units.
Student develops and implements a scholarly research project. Emphasizes analysis of data and presentation of findings in a research colloquium.

OCTH 574. Critical Inquiry & Evidence-Based Practice II. 3 Units.
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 and critical analysis in preparation of literature review, purpose, conceptual framework, proposed methodology, and data analysis for the Institutional Review Board proposal.

OCTH 575. Critical Inquiry & Evidence-based Practice III. 2 Units.
Student finalizes research proposal and implements a scholarly research project by systematically engaging in data collection, data management, and data analysis. Incorporates research ethics.

OCTH 576. Critical Inquiry & Evidence-based Practice IV. 2 Units.
Student implements a scholarly research proposal by systematically analyzing data relevant to occupational therapy practice. Emphasizes synthesis of findings and writing scholarly paper.

OCTH 591. Fieldwork Experience II. 12 Units.
A twelve-week (forty 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 Units.
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 and Health Promotion. 3 Units.
Explores occupational science as an academic discipline and how it supports occupational therapy's role in health promotion. Utilizes theoretical perspectives and research to analyze and understand occupation's relationship to lifestyle, health, well-being, and prevention.

OCTH 601. Spirit of Diverse Abilities I. 3 Units.
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 Units.
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.

OCTH 604. Health, Society, and Participation. 3 Units.
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 for Health Professionals. 3 Units.
Explores the philosophical foundations of knowledge and learning theory. Prepares health professionals for the roles and expectations of education in academic and practice settings. Discusses instructional design, media, student assessment, teaching skills, course development, mentoring, and curriculum design.

OCTH 606. Leadership for Health Professionals. 3 Units.
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 professional practice.

OCTH 611. Capstone: IRB Proposal. 4 Units.
Online interactive course work precedes and follows on-site intensive. Student develops individual research proposal, completes Institutional Review Board (IRB) training, and successfully submits proposal to the IRB. Emphasizes reflective discussions of research interests and experiences, planning, conceptual framework, proposed methodology, and data analysis. Student engages in peer reviews throughout course.

OCTH 614. Capstone II. 3 Units.
Continues the capstone project. Students complete a needs assessment and program development. Data collection, data management techniques, and introduction to various data analysis strategies.

OCTH 621. Capstone Planning. 2 Units.
Students design their capstone project with guidance from the primary course instructor. Emphasizes identification of a focus area, objectives, goals, outcomes, on-site mentor, faculty mentor, and time frame.

OCTH 622. Capstone Proposal. 2 Units.
Student develops and submits a proposal to the doctoral committee for final approval.

OCTH 623. Capstone III. 4 Units.
Implements capstone approved in OCTH 622. Critical discussion of experiences and problem solving with classmates.

OCTH 625. Capstone IV. 4 Units.
Completes implementation aspects of capstone. Initiates preparation of a manuscript and participation in online critical discussions with classmates.

OCTH 627. Professional Publication and Dissemination. 4 Units.
A culmination course in which students reflect on their capstone 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.

OCTH 699. Directed Study. 2,3 Units.
Student pursues an area of special interest under the direction of the faculty advisor. Topic must be approved by the occupational therapy department.

OCTH 701. Service Learning Seminar. 1 Unit.
Includes philosophy of service, learning by experience, reflection, and civic engagement. Provides opportunity for students to apply critical thinking skills, team-based learning, and information learned in didactic course work to collaborate with the community and address client and community needs.

OCTH 702. Service Learning I. 1 Unit.
Service learning experiences that utilize active learning strategies involving students in reflection, sustainability, and civic engagement. Encourages collaboration with community partners in order to address needs of the community. Develops critical thinking and team-based learning skills.

OCTH 703. Service Learning II. 1 Unit.
Service learning experiences that utilize active learning strategies involving students in reflection, sustainability, and civic engagement. Encourages collaboration with community partners in order to address needs of the community. Develops critical thinking and team-based learning skills.

OCTH 704. Service Learning III. 2 Units.
Service learning experiences utilize learning strategies that involve students in experience, reflection, sustainability, and civic engagement. Emphasizes needs assessment. Encourages collaboration with community partners and addresses needs of the community through the development of service learning projects. Develops critical thinking and team-based learning skills.

OCTH 705. Service Learning IV. 2 Units.
Service learning experiences that utilize active learning strategies involving student in reflection, sustainability, and civic engagement. Encourages collaboration with community partners in order to address needs of the community. Develops critical thinking and team-based learning skills.

OCTH 706. Service Learning V. 1 Unit.
Service learning experiences that utilize active learning strategies involving students in reflection, sustainability, and civic engagement. Encourages collaboration with community partners in order to address needs of the community. Develops critical thinking and team-based learning skills.

OCTH 707. Service Learning VI. 1 Unit.
Community-engaged learning experiences that involve students in reflection and sustainability. Encourages collaboration with community partners and addresses needs of the community. Develops critical thinking and team-based learning skills. Includes synthesis of service learning experiences.

OCTH 708. Service Learning VII. 1 Unit.
Community-engaged learning experiences that involve students in reflection and sustainability. Encourages collaboration with community partners and addresses needs of the community. Develops critical thinking and team-based learning skills. Includes synthesis of service learning experiences.

OCTH 711. Level I Fieldwork 1. 2 Units.
Observation and supervised interaction in clinical and/or community-based programs to introduce students to fieldwork experience, apply knowledge to practice, and develop understanding of the needs of clients.

OCTH 712. Level I Fieldwork 2. 2 Units.
Observation and supervised interaction in clinical and/or community-based programs to introduce students to fieldwork experience, apply knowledge to practice, and develop understanding of the needs of clients.

OCTH 713. Level I Fieldwork 3. 2 Units.
Supervised interaction in a school-based setting to allow student to apply knowledge to practice, and to develop understanding of client needs.

OCTH 721. Level II Fieldwork Experience 1. 8 Units.
A twelve-week (forty 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 722. Level II Fieldwork Experience 2. 8 Units.
A twelve-week (forty 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.

Ophthalmology (OPHM)

Courses

OPHM 891. Ophthalmology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of ophthalmology, including research.

Oral and Maxillofacial Surgery (OMFS)

Courses

OMFS 604. Selected Topics in Oral and Maxillofacial Surgery. 1 Unit.
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 Unit.
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 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Unit.
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 Unit.
Introduces the theory and practice of general anesthesia.

OMFS 696. Scholarly Activity in Oral and Maxillofacial Surgery. 1 Unit.
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 Unit.
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 Unit.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

OMFS 697C. Research. 1 Unit.
Resident completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

OMFS 698. Thesis. 1 Unit.

OMFS 805. Oral and Maxillofacial Surgery I. 1 Unit.
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. 2 Units.
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.

OMFS 819. Intravenous Sedation. 1.5 Unit.
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 Unit.
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 Unit.
Clinical application of the principles of oral maxillofacial surgery. Opportunities to gain experience in cases of the type treated by the general dentist.

Oral Diagnosis, Radiology and Pathology (ODRP)

Courses

ODRP 311. General and Oral Pathology DH. 5 Units.
Basic disease processes and selected organ system diseases. Discusses common and important oral mucosal, soft tissue, and jaw lesions. Emphasizes signs for early recognition and differential diagnosis.

ODRP 501. Principles of Microbiology DN. 4 Units.
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 Unit.
Techniques for producing intraoral and extraoral radiographs and digital images, digital image processing, radiation protection and safety, and infection control. Covers viewing of radiographic and digital images, technique, handling, anatomy, and errors.

ODRP 725. Patient Assessment and Data Management. 3 Units.
Introduces students to all portions of the comprehensive oral evaluation--including medical/dental history interview, patient examination, and data management. Introduces and uses the problem-oriented record in diagnosis and treatment planning. Includes supervised clinical experience with fellow students as patients. Student provides a comprehensive oral evaluation of a classmate, which provides the basis for a comprehensive treatment plan.

ODRP 726. Patient Diagnosis and Treatment Planning. 1.5 Unit.
Additional concepts of diagnosis and treatment planning, treatment plan presentation, and patient consent. Indications and processes for limited and periodic evaluations. Virtual patients used for practicing the use of the clinic computer system and for treatment planning. Case-based, small-group treatment-planning exercises.

ODRP 735. Dental Emergency Diagnosis and Treatment. 1 Unit.
Diagnosis and management of dental emergencies, including general emergencies, endodontic, pediatric, and prosthodontic emergencies, hard- and soft-tissue trauma, forensic issues, substance abuse, child abuse and dealing with difficult patients.

ODRP 751. General and Systemic Pathology I. 4 Units.
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 epidemiology, etiology and pathogenesis, morphologic and clinical disease manifestations, and major treatment modalities.

ODRP 752. General and Systemic Pathology II. 4 Units.
Continues study of disease processes of the various organs and systems. Emphasizes epidemiology, etiology and pathogenesis, morphologic and clinical disease manifestations, and major treatment modalities.

ODRP 755. Radiology II: Theory and Interpretation. 2 Units.
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 Units.
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 and pathogenesis, clinical and/or radiographic features, microscopic features, and management of disease, emphasizing differential diagnosis.

ODRP 807. Oral Medicine I: TMJ/Orofacial Pain I. 1 Unit.
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 Units.
Etiology, pathophysiology, clinical presentation, medical management, and dental treatment modifications for patients with medical conditions of the cardiovascular, pulmonary, gastrointestinal, genitourinary, endocrine, immunologic, hematologic, and neurologic systems; as well as psychiatric disorders and infectious and oncologic diseases. Case-based, small-group discussions.

ODRP 811. Oral Medicine III: TMJ/Orofacial Pain II. 1 Unit.
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. Clinical Management of Older Adults. 1 Unit.
Instruction in the multidisciplinary medical and dental assessment and management of older adults. Includes clinical experience in a multidisciplinary team setting.

ODRP 825. Oral Diagnosis, Radiology, and Pathology Clinic. 3 Units.
Clinical practice in patient assessment, diagnosis, and treatment planning of early-to-intermediate dental and oral diseases. Clinical practice in the assessment and management of patients with urgent dental problems. Clinical practice making and interpreting intraoral and panoramic radiographic images.

ODRP 826. Oral Medicine IV: Clinical Oral Pathology and Oncology. 2 Units.
Differential diagnosis 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 modalities. Includes discussion of cancer prevention and posttherapy reconstruction. Reviews tobacco cessation protocols.

ODRP 875. Oral Diagnosis, Radiology, and Pathology Clinic. 4 Units.
Clinical practice in patient assessment, diagnosis, and treatment planning of intermediate-to-advanced dental and oral diseases. Clinical practice in the assessment and management of patients with urgent dental problems. Clinical practice making and interpreting intraoral and panoramic radiographic images.

Oral Pathology (ORPA)

Courses

ORPA 533. Radiology Topics for Graduate Dental Programs. 2 Units.
Applies principles of radiology to the specialty level. Presents new imaging modalities, as well as methods to create a custom image center for the provider's needs. Equips provider to evaluate equipment, state laws, and other factors in setting up a modern practice.

Orthodontics (ORDN)

Courses

ORDN 524. Introduction to Graduate Orthodontics. 12 Units.
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 Units.
Selected laboratory projects to enhance the didactic portion of the course.

ORDN 525. Materials Science and Mechanics. 2 Units.
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 Units.
Fundamentals of anatomy as applied to a special region or application.

ORDN 527. Clinical Photography. 1 Unit.
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 Units.
Studies cephalometrics from a historical perspective to the present time, including most of the major analyses.

ORDN 536. Concepts of Physical Anthropology. 2 Units.
Basic and classic concepts of physical anthropology as they relate to orthodontics.

ORDN 545. Growth and Development. 3 Units.
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 Units.
The development of the human face and dentition. A concept of dynamic functioning occlusion.

ORDN 571. Diagnosis and Treatment Planning I. 2 Units.
Student diagnoses and treats assigned patients.

ORDN 574. Diagnosis and Treatment Planning II. 2 Units.
Continues ORDN 571, with follow-up of clinical cases with progress records.

ORDN 584. Current Orthodontics Literature I. 2 Units.
Presents current papers in various subspecialties of orthodontics.

ORDN 591. Current Orthodontics Literature II. 2 Units.
Presents current papers in various subspecialties of orthodontics.

ORDN 597. Orthognathic Surgery Theory and Literature Review. 2 Units.
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 Unit.
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 Unit.
Second-year seminar. Design of clinical diagnosis and practice management. Repeated registrations to fulfill the total units required.

ORDN 606. Craniofacial Genetics. 2 Units.
Basic genetics. Introduces craniofacial clinic.

ORDN 608. Physiology and Pathology of Speech. 1 Unit.
Studies specific areas of oral myofunctional disorders that influence the occlusion.

ORDN 634. Orthodontics Clinical Conference. 2 Units.
Students prepare and present diagnosis, case analysis, and treatment plan--with primary emphasis on difficult and unusual cases.

ORDN 635. Finishing Mechanics I. 2 Units.
Orthodontic treatment modalities, emphasizing finishing mechanics for the patient.

ORDN 636. Finishing Mechanics II. 1 Unit.
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 Units.
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 Units.
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 Units.
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 Unit.
Student identifies a research project, prepares a proposal, and obtains approval for the protocol.

ORDN 697B. Research. 1-4 Units.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

ORDN 698. Thesis. 3 Units.

ORDN 725. Clinical Practice in Orthodontics. 7 Units.
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 Unit.
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 Units.
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 Unit.
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 Unit.
Clinical application of skills that have been learned in the laboratory to manage minor tooth movement and early treatment cases.

Orthopaedic Surgery (ORTH)

Courses

ORTH 891. Orthopaedic Surgery Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of orthopaedic surgery, including research.

Orthotics and Prosthetics (ORPR)

Courses

ORPR 301. Orthotics & Prosthetics Laboratory and Technical Skills. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Establishes orthotic and 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 hole body considerations for the kinetic effects, including gait, ADL, occupational and recreational functions.

ORPR 325. Medical Terminology. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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. .5 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Computer data analysis and preparation of a research report. Student prepares a poster appropriate for a professional meeting. Graphics, tables, and abstracts.

Otolaryngology (OTOL)

Courses

OTOL 891. Otolaryngology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of otolaryngology, including research.

Pathology (PATH)

Courses

PATH 517. Human Systemic Pathology. 9.5 Units.
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.

PATH 599. Directed Study. 1.5-18 Units.

PATH 891. Pathology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of pathology, including but not limited to hematopathology, molecular embryopathy, and research.

Pediatric Dentistry (PEDN)

Courses

PEDN 503. Pediatric Dental Seminar. 2 Units.
Selected clinical topics in pediatric dentistry. Requires repeated registrations to fulfill total units.

PEDN 508. Pediatric Hospital Dentistry Seminar. 2-4 Units.
Hospital protocol and the care of patients in a hospital environment.

PEDN 512. Oral Sedation Seminar. 2 Units.
Pharmacology, medical considerations, clinical applications, and protocols for oral sedation.

PEDN 521. Principles of Medicine and Physical Diagnosis. 2 Units.
Medical and physical diagnosis for the pediatric dental patient.

PEDN 524. Introduction to Orthodontics. 2 Units.
Diagnosis and treatment planning for clinical orthodontics.

PEDN 524L. Introduction to Orthodontics Laboratory. 1,2 Unit.
Fabrication of various orthodontic appliances.

PEDN 604. Pediatric Dental Literature. 2-12 Units.
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 Units.
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 Units.
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 Unit.
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 Unit.
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 Unit.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

PEDN 697C. Research. 1 Unit.
Resident completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

PEDN 698. Thesis. 1-3 Units.
Required for M.S.-degree track.

PEDN 725. Pediatric Dental Clinic. 8 Units.
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 Units.
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, oral surgery, dental arch-length management, and local anesthesia and sedation for children. Medical aspects of pediatric dentistry.

PEDN 753L. Pediatric Dentistry I Laboratory. 1 Unit.
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 Unit.
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. 3.5 Units.
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. 3 Units.
Missing.

Pediatrics (PEDS)

Courses

PEDS 599. Pediatrics Directed Study. 1.5-18 Units.

PEDS 701. Pediatrics Clerkship. 1.5-12 Units.
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 Units.
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 Units.
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.

PEDS 891. Pediatrics Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of pediatrics, including but not limited to inpatient and outpatient care, endocrinology, rheumatology, neurology, oncology, and research.

Periodontics (PERI)

Courses

PERI 524. The Periodontium. 2 Units.
Reviews literature concerning the anatomy (macro-, micro-, and ultrastructural) and the physiology of the periodontium.

PERI 531. Periodontal Pathology. 2 Units.
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 Units.
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 Units.
Reviews most recent issues of periodontal and implant scientific journals. Repeated registrations required to fulfill the total units.

PERI 605. Implant Literature Review. 2 Units.
Reviews literature providing the basis for implant surgery, as well as concepts for implant restoration. Repeated registrations required to fulfill the total units.

PERI 606. Modern Concepts of Periodontal Wound Healing. 2 Units.
Integrates the latest information in the literature concerning the etiologic factors in the initiation and development of the inflammatory process, the relation to systemic factors, the immunologic aspects of tissue healing, the microbiologic interactions in tissue repair, and how derangements in the inflammatory process can lead to various pathologic conditions.

PERI 608. Dental Specialty Practice Management. 2 Units.
Assists graduate students with transition from school to private practice. Includes practical discussion of and guidance relevant to such considerations as staff, insurance, banking, referral communications, and legal aspects of dentistry. Students required to bring in articles on practice management and to present a business plan for their first few years in practice.

PERI 611. Introduction to Periodontics. 2 Units.
Overview of the clinical science of periodontics, including epidemiology, etiology, therapy, clinical methods, and record keeping.

PERI 614. Implant Treatment Planning. 2 Units.
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 Units.
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 Unit.
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 Unit.
Experience in teaching the predoctoral dentistry student. Repeated registrations required to fulfill the total units.

PERI 696. Scholarly Activity in Periodontics. 1 Unit.
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 Unit.
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 Unit.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

PERI 697C. Research. 1 Unit.
Student completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

PERI 698. Thesis. 1 Unit.

PERI 705. Fundamentals of Periodontics I. 2 Units.
Presents the gross microscopic anatomy of the periodontium. Introduces periodontal diseases and their classification. Discusses the epidemiology of plaque-related periodontal diseases. Reviews the microbial etiology of periodontal diseases and modifying risk factors--including cigarette smoking, hormonal changes, systemic disease, and genetics. Discusses non-plaque-related periodontal diseases and plaque-related gingivitis.

PERI 725. Clinical Practice in Periodontics. 1-6 Units.
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 Units.
Clinical experience in the diagnosis and treatment regarding implant surgery. A minimum of sixty clock hours per quarter (twelve quarters) required to fulfill total units.

PERI 741. Fundamentals of Periodontics II. 2 Units.
Reviews the various periodontitis diseases--including chronic periodontitis, aggressive periodontitis, necrotizing periodontal diseases, and periodontitis as a manifestation of systemic disease. Reviews developmental or acquired deformities and conditions, including mucogingival deformities and occlusal trauma. Reviews the clinical evaluation of the periodontal patient and introduces the diagnostic and treatment-planning process. Discusses the interactions between periodontics and other dental disciplines.

PERI 742. Essential Periodontal Therapy Laboratory. 2 Units.
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.

PERI 765. Essential Periodontal Therapy. 2 Units.
Focuses on nonsurgical periodontal therapy--including self-performed plaque control, scaling, root-planing, periodontal maintenance, local antimicrobial agents, systemic antibiotics, and host reponse modulation. Utilizes interactive teaching, student-directed inquiry; and introduces evidence-based decision making in the management of periodontitis patients.

PERI 805. Periodontal Surgical Therapy. 1 Unit.
Introduces surgical periodontal therapy and periodontal wound-healing concepts. Discusses periodontal flaps and their use in various surgical techniques. Reviews surgical management of multirooted teeth. Reviews preprosthetic periodontal surgery. Presents laboratory exercises in application of surgical principles.

PERI 875. Periodontics Clinic. 7.5 Units.
Clinical practice in evaluation, diagnosis, and treatment planning of early-to-advanced periodontal disease. Practice in dental emergency diagnosis and management.

Pharmaceutical Sciences (RXPS)

Courses

RXPS 511. Pharmaceutics I. 2 Units.
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 Units.
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 Units.
Studies the mathematical, physicochemical, and biological principles concerned with the formulation, preparation, and effectiveness of pharmaceutical dosage forms. Continues RXPS 512.

RXPS 515. Pharmaceutics Laboratory I. 0.5 Units.
Laboratory designed for the student to apply pharmaceutical principles and to develop proficiency when compounding selected formulations and employing aseptic techniques.

RXPS 516. Pharmaceutics Laboratory II. 0.5 Units.
Continues RXPS 515.

RXPS 524. Physiology I. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

RXPS 616. Neuropsychopharmacology. 3 Units.
Introduces the fundamentals of neuropsychopharmacology, including the functional organization of the brain and the physiology and biochemistry of major neurotransmitters. Studies how drugs--including medications for neurologic and psychiatric disorders, as well as drugs of abuse--affect the brain and alter behavior. Discusses some of the most common brain disorders--such as schizophrenia, depression, Parkinson's disease, and drug addiction--with a focus on the mechanisms of action of drugs used for treatment of these disorders.

RXPS 630. Biochemical Aspects of the Obesity and Metabolic Syndrome. 2 Units.
Explores biochemical factors related to the obesity epidemic in the United States. Emphasizes the impact of these biochemical factors on currently available pharmacotherapeutic options, as well as the development of new therapies. Focuses particularly on the role of pharmacist-guided lifestyle interventions on the treatment of obesity and metabolic syndrome. Coordinator-moderated seminar/discussion format in which students present in-depth analysis and interpretation of papers from the current scientific literature.

RXPS 651. Principles of Medicinal Chemistry I. 3 Units.
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 Units.
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.

RXPS 653. Principles of Medicinal Chemistry III. 3 Units.
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.

RXPS 710. Dietary Supplements. 3 Units.
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 Units.
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.

RXPS 718. Clinical Toxicology. 3 Units.
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 Unit.
Provides insight into newly developed anticancer drugs and novel developments in cancer therapeutics.

RXPS 730. Current Topics in Medicinal Chemistry and Drug Design. 1 Unit.
Focuses on discovery and design of new drugs for new therapeutic targets, and on development of new approaches for treatment of diseases.

RXPS 782. Special Topics in Pharmaceutical Sciences. 1-4 Units.
Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

RXPS 783. Special Topics in Pharmaceutical Sciences. 1-4 Units.
Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

RXPS 784. Special Topics in Pharmaceutical Sciences. 1-4 Units.
Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

Pharmacology (PHRM)

Courses

PHRM 501. Pharmacology and Therapeutics SD. 4 Units.
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 Units.
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 515. Medical Pharmacology. 6 Units.
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 humans or animals.

PHRM 534. Topics in Pharmacology for Dentistry. 2 Units.
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 Units.

PHRM 544. Topics in Advanced Pharmacology. 3 Units.
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 Units.
Experimental studies illustrating the didactic material presented in PHRM 544. Offered on demand.

PHRM 554. Neuropharmacology. 4 Units.
Systematically discusses drugs that affect primarily the nervous system, with major emphasis on mechanism of action.

PHRM 555. Laboratory in Neuropharmacology. 1 Unit.
Experimental studies illustrating the didactic material presented in PHRM 554.

PHRM 564. Cardiovascular and Renal Pharmacology. 3 Units.
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 Unit.
Experimental studies illustrating the didactic material presented in PHRM 564. Offered on demand.

PHRM 584. Drug Metabolism and Biochemical Pharmacology. 4 Units.
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 Unit.
Experimental studies illustrating the didactic material presented in PHRM 584.

PHRM 586. Toxicology. 3 Units.
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 Unit.
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 Units.
Assignments in literature reviews and/or laboratory exercises.

PHRM 697. Research. 1-6 Units.

PHRM 698. Thesis. 1-6 Units.

PHRM 699. Dissertation. 1-6 Units.

PHRM 891. Pharmacology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of pharmacology, including research.

Pharmacy Conjoint (RXRX)

Courses

RXRX 501. School of Pharmacy Forum. 0 Units.
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 Unit.
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.

RXRX 507. Professional Development. 0 Units.
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.

RXRX 601. School of Pharmacy Forum. 0 Units.
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.

RXRX 604. Professional Development. 0 Units.
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.

RXRX 701. School of Pharmacy Forum. 0 Units.
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.

RXRX 704. Professional Development. 0 Units.
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.

RXRX 711. Formulary Management, Part I. 1 Unit.
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.

RXRX 712. Formulary Management, Part II. 2 Units.
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.

RXRX 798. Independent Study with Faculty. 1-4 Units.
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.

Pharmacy Practice/Drug Information (RXDI)

Courses

RXDI 664. Drug Information and Literature Evaluation. 3 Units.
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)

Courses

RXEE 562. Pharmacist Guided Self-Care 1. 3 Units.
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.

RXEE 563. Pharmacist Guided Self-Care 2. 3 Units.
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.

RXEE 591. Introduction to Community Pharmacy Practice I. 2 Units.
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 Units.
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 Units.
Exposes students to the various clinical, administrative, and distributive roles and responsibilities of a hospital pharmacist.

RXEE 790. Introduction to Clinical Pharmacy Practice. 2 Units.
Exposes students to a variety of clinical pharmacy services--including ambulatory care, medicine, and a number of specialty practice areas.

RXEE 806. Advanced Clinical Community Practice. 6 Units.
Supervised clinical pharmacy-practice experience that provides advanced pharmaceutical care skills and opportunities in the area of community practice.

RXEE 821. Advanced Pharmacy Practice Experience I. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 822. Advanced Pharmacy Practice Experience II. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 823. Advanced Pharmacy Practice Experience III. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 824. Advanced Pharmacy Practice Experience IV. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 825. Advanced Pharmacy Practice Experience V. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 826. Advanced Pharmacy Practice Experience VI. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 827. Advanced Pharmacy Practice Experience VII. 6 Units.
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

RXEE 857. Hospital Practice. 6 Units.
Supervised pharmacy experience emphasizing the development of pharmaceutical care and medication-distribution skills in an inpatient setting.

RXEE 893. Pharmacy Systems/Technology. 6 Units.
Preceptor-supervised education that provides additional experience in the areas of pharmacy systems and technology.

Pharmacy Practice/ Pharmaceutical Care (RXPC)

Courses

RXPC 561. Pharmaceutical Care I. 4 Units.
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 Units.
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 Units.
Continues RXPC 571.

RXPC 760. Clinical Pharmacokinetics. 2 Units.
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.

RXPC 761. Pharmaceutical Care Laboratory I. 2 Units.
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. 2 Units.
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. 2 Units.
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.

Pharmacy Practice/Therapeutics (RXTH)

Courses

RXTH 570. IPDM I: Principles of Pharmacology. 2 Units.
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 603. Interprofessional Dental Clinic. 2 Units.
Provides opportunity for pharmacy and dentistry students to work and learn together in the setting of an urgent care dental facility. Students interview patients and collect data (chief complaint, medical history, medication history, etc.) pertinent to the patients' dental care. Emphasizes the collaboration of different professions to deliver health care and improve the health of patients. Develops communication skills between health care providers.

RXTH 604. Medical Missions. 3 Units.
Prepares students to participate in an organized, interprofessional, cross-cultural medical mission trip, health-care experience, or international health program. Includes hands-on, experiential learning that enhances competence in physical assessment. Reviews major chronic diseases encountered in select medical mission destinations, including the appropriate role for student pharmacists in diagnosis and treatment.

RXTH 606. Antimicrobial Stewardship. 1 Unit.
Develops an understanding of the role of the pharmacist in antimicrobials stewardship programs (ASP), as well as the process of ASP. Includes hospital practice and administrative duties associated with ASP.

RXTH 609. Advanced Literature Evaluation. 1 Unit.
Provides an opportunity for students to critically evaluate journal articles in a systematic format. Introduces students to the journal club format of presenting literature and learning how to assess the merit of studies with respect to design, statistical methods, and potential applications.

RXTH 610. Introduction to Pharmacy Informatics. 1 Unit.
Provides a foundation for understanding health information technology (HIT) and pharmacy informatics. Presents the HIT and specific informatics language that make up the infrastructure for real-world information management and health information exchange.

RXTH 614. Parenteral and Enteral Nutrition. 1.5 Unit.
Provides a comprehensive review of malnutrition in critically ill patients, and discusses the treatment approach based on patient?s medical and nutritional status and requirements. Introduces students to therapy-related complications and discusses how to prevent and manage them.

RXTH 670. IPDM I: Principles of Pharmacology. 2 Units.
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.

RXTH 671. IPDM II: Fluids and Electrolytes. 3 Units.
As part of a twelve-course integrated pharmacology and disease-state management sequence, covers the pathophysiology and management of conditions related to fluid, electrolyte, anemia, acid-base, and nutritional disorders. Discusses pharmacotherapy, dietary requirements, and sources of electrolytes. Prepares the student to manage these disorders, establish and employ rational treatment, and provide parameters to monitor progress of recommended therapies.

RXTH 674. IPDM VI: Renal and Respiratory Diseases. 3.5 Units.
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 Units.
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 684. IPDM III: Cardiovascular I. 3.5 Units.
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.

RXTH 685. IPDM V: Cardiovascular II. 3.5 Units.
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 701. Pediatrics. 3 Units.
Introduces the core concepts involved in the care of pediatric patients and expands students' therapeutic knowledge regarding common pediatric disease states. Prepares students to identify and address common drug-related problems in pediatric patients.

RXTH 702. Advanced Topics in Neurology and Therapeutics. 2 Units.
Develops the knowledge and skills necessary for scientific inquiry and promotes an enduring attitude of self-learning. Elements include creative and critical thinking, literature analysis, and discussion of findings. Students assigned projects and activities.

RXTH 755. Advanced Cardiology Topics. 2 Units.
An advanced cardiology elective course that develops knowledge of cardiology issues and exposes students to advanced therapeutic topics within cardiovascular pharmacotherapy.

RXTH 756. Internal Medicine Clinical Research. 2 Units.
Exposure to and participation in clinical research in internal medicine clinical pharmacy practice.

RXTH 757. Advanced Cardiovascular Life Support. 3 Units.
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 Units.
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.

RXTH 771. IPDM X: Neurology. 3.5 Units.
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 Units.
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. 3.5 Units.
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.

RXTH 774. IPDM XII: Miscellaneous Conditions and GI Disorders. 2.5 Units.
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.

RXTH 775. IPDM XI: Oncology/Transplant. 3.5 Units.
As part of the twelve-course integrated pharmacology and disease-state management sequence, introduces student pharmacists to the pathophysiology, pharmacology, and therapeutic management of the common hematologic malignancies and solid tumors. Helps students understand the management of adverse side effects due to chemotherapy, as well as transplant. Provides an avenue for student pharmacists to practice critical thinking skills and clinical decision making using interactive, case-based lecturing and recitation cases.

RXTH 782. Special Topics in Pharmacy Practice. 1-4 Units.
Lecture and discussion on a current topic in pharmacy practice. May be repeated for a maximum of 6 units.

RXTH 783. Special Topics in Pharmacy Practice. 1-4 Units.
Lecture and discussion on a current topic in pharmacy practice. May be repeated for a maximum of 6 units.

RXTH 784. Special Topics in Pharmacy Practice. 1-4 Units.
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 Units.
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. 2 Units.
Provides students with skills necessary to work up and present patient cases involving multiple disease states. Familiarizes students with general strategies to assess complicated patient cases, as well as to present them in a logical manner.

RXTH 789. Advances in Community Pharmacy Practice. 3 Units.
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.

Pharmacy/Social and Administrative Sciences (RXSA)

Courses

RXSA 545. Public Health and Lifestyles. 3 Units.
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. 2 Units.
Introduces students to the most relevant federal and state laws and regulations that define legal and ethical pharmacy practice. Provides students with the tools necessary to practice pharmacy consistent with these standards. Includes lectures, discussions, small-group problem solving, assignments, and examinations.

RXSA 600. Philippines Medical Mission Preparation. 1 Unit.
Emphasizes preparation activities designed to orient student team members to the cultural, professional, and clinical experiences that may be encountered in the Philippines. Includes a survey of the geographical, cultural, and epidemiological history of the Batangas people, as well as a review and preparation of medications that will be dispensed during the mission. Prepares student pharmacists to describe the pharmacist's scope of practice in the medical mission, as well as provide competent pharmacy care to the local population. Develops and implements mission responsibilities, tasks, and itineraries.

RXSA 640. Epidemiology and Biostatistics. 3 Units.
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.

RXSA 646. Principles of Management. 3 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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.

Philosophy (PHIL)

Courses

PHIL 616. Seminar in the Philosophy of Science. 2-4 Units.
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.

Physical Education Activity (PEAC)

Courses

PEAC 110. Independent Activities. 0.5,1 Units.
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.

PEAC 128. Recreation Swimming. 1 Unit.
Covers the mechanics of a variety of strokes, training methods, training principles, and safety through swim techniques that maximize fitness outcomes and minimize injuries. Designed to teach and apply the principles of lifetime physical fitness, utilizing the five major components of cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition.

Physical Therapist Assistant (PTAS)

Courses

PTAS 201. Anatomy. 4 Units.
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 Units.
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 Unit.
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 Unit.
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 Unit.
Introduces basic abbreviations, medical terminology, chart reading, and note writing.

PTAS 212. Physical Therapy Procedures. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 234. General Medicine II. 1 Unit.
Introduces students to and familiarizes them with equipment, lines, tubes, life-sustaining equipment, and procedures for the treatment of patients in the acute/inpatient setting. Considers various factors and reactions to medical procedures that may affect the treatment of patients in the acute care setting. Mobilization, functional mobility, exercise, and transfers within the acute care setting. Case scenarios with different situations that the physical therapist assistant may encounter in such acute care facilities as ICU, SNF, hospitals, and CCU. Identifies the roles of multidisciplinary team members managing critical care patients.

PTAS 236. Applied Electrotherapy. 3 Units.
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 Unit.
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 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 Unit.
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 Orthotics and Prosthetics. 2 Units.
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.

PTAS 265. Professional Seminar. 1 Unit.
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, and vestibular rehabilitation. Lecture and laboratory.

PTAS 275. Psychosocial Aspects of Health. 2 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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.

Physical Therapy (PHTH)

Courses

PHTH 501. Neurology I. 2 Units.
Physical therapy management of individuals with balance and vestibular disorders resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcome measurement.

PHTH 502. Neurology II. 3 Units.
Physical therapy management of individuals with neurological disorders (including stroke, traumatic brain injury, multiple sclerosis, Parkinson's disease, Guillain-Barre syndrome, and amyotrophic lateral sclerosis) resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement.

PHTH 503. Neurology III. 3 Units.
Physical therapy management of individuals with spinal cord injury and amputations resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and measurement of outcomes.

PHTH 506. Exercise Physiology. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Presents the basis for the physical therapist's management of patients with functional impairments stemming from orthopaedic pathologies associated with all body regions. Introduces and considers the components of patient/client management--including examination, evaluation, diagnosis, prognosis, intervention, and outcomes. Includes lectures by orthopaedic surgeons emphasizing postoperative rehabilitation to enhance understanding of surgical procedures utilized in the management of the orthopaedic patient.

PHTH 512. Clinical Psychiatry. 2 Units.
Introduces mental and personality disorders. Reviews abnormal behaviors commonly found in a clinical setting.

PHTH 513. Therapeutic Procedures. 3 Units.
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 Units.
Methods of evaluating muscle strength and function using specific and gross manual muscle tests. Integrates manual muscle testing with other aspects of patient care. Live patient demonstrations and discussion regarding each patient. Lecture, demonstration, and laboratory.

PHTH 515. Topics in Rehabilitation. 1-6 Units.
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 Units.
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 Units.
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 Units.
Develops competencies in the identification and evaluation of normal and abnormal gait patterns, progressing to development of treatment programs. Includes physical therapy management of prosthetic and orthotic devices and their assistance with gait.

PHTH 520. Medical Documentation and Billing. 3 Units.
Expands on basic principles of medical documentation and communication. Emphasizes expanded skills needed in the clinical setting, including but not limited to the following: Documentation following Medicare guidelines and the Guide to Physical Therapy Practice, justification of care using measurable objective data, home health episodic payment, billing and reimbursement, workers compensation, interdisciplinary communication, medical dictation, and electronic medical records and documentation as they relate to physical therapy.

PHTH 521A. Orthopaedics 1A. 3 Units.
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 manual techniques for specific upper extremity musculoskeletal conditions. Utilizes lecture, laboratory, and case studies to develop and integrate these concepts.

PHTH 521B. Orthopaedics 1B. 3 Units.
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 Units.
Evidence-based theory of spinal examination, evaluation, and physical therapy intervention. Expanded principles of functional anatomy, tissue and joint biomechanics, pathology, and treatment. Differentiates causes of neck and head pain--including temporomandibular joint disorders, myofascial pain dysfunctions, and cervicogenic headaches.

PHTH 523. Orthopaedics III. 3 Units.
Evidence-based theory of lumbopelvic, lumbar and thoracic spine examination, evaluation, and physical therapy intervention. Expanded principles of functional anatomy, tissue and joint biomechanics, pathology, and treatment. Differentiates etiology of lumbar, lumbopelvic, and thoracic pain.

PHTH 524. Hand Rehabilitation for the Physical Therapist. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Advanced observational analysis of normal and abnormal human locomotion, with comparison of pathological differences.

PHTH 530. Therapeutic Exercise II. 3 Units.
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 exial skeleton. Lecture and laboratory.

PHTH 531. Soft-Tissue Mobilization. 3 Units.
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 Units.
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 Units.
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 Units.
Physical therapy evaluation and treatment-planning strategies for individuals with orthopedic dysfunction primarily related to soft tissue injury resulting in pathology, impairments, functional limitations, and disabilities. Emphasizes laboratory hands-on application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, intervention, and measurement of outcomes.

PHTH 535. Research and Statistics I. 3 Units.
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 Units.
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 Units.
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 IIIA Research Proposal. 3 Units.
Research-topic selection, literature review, proposal writing and approval. Limited to Doctor of Science students in the Physical Therapy Program.

PHTH 537B. Research and Statistics IIIB Data Collection. 3 Units.
Research-data collection after proposal approval. Limited to Doctor of Science students in the Physical Therapy Program.

PHTH 538. Research and Statistics IV. 3,6 Units.
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 539. Research and Statistics V. 3 Units.
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 540. Concepts of Acute Care. 1 Unit.
Comprehensively familiarizes students with the various procedures, equipment, lines and tubes, treatment, and other factors involved in treating adult and pediatric patients in the acute care setting. Includes case studies utilizing various medications and reactions that the physical therapist may encounter during treatments in acute care. Covers such settings as ICU, NICU, and CCU using the most current research on mobilization and improving function. identifies the roles of multidisciplinary team members managing critical care patients.

PHTH 541. Advanced Clinical Practice I. 3 Units.
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 Units.
Physical therapy management of individuals with balance and vestibular disorders resulting in impairments, functional limitations, and disabilities. Emphasizes application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement.

PHTH 543. Advanced Clinical Practice III. 3 Units.
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 Unit.
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 & Diathroidal Joints of the Extremities. 3 Units.
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 Units.
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 Units.
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 Units.
Evidenced-based course that covers physical therapy practice relevant to adult neurological rehabilitation. Emphasizes NDT, motor learning, and clinical decision making. Exposes students to material through problem-based learning, literature review, lecture, discussion, and intensive laboratory sessions focused on mastery of manual therapy application.

PHTH 549. Cervicogenic Dizziness. 3 Units.
Physical therapy management of individuals with cervicogenic dizziness resulting in impairments, functional limitations, and disabilities. Emphasizes application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement.

PHTH 550. Integrative Approach to Early Rehabilitation. 3 Units.
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 Units.
Student demonstrates and practices advanced examination and treatment of the lumbar spine, pelvic girdle, and lower extremities.

PHTH 552. Advanced Orthopaedic Procedures II. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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. Life Span Studies III: Geriatrics. 2 Units.
Overview of the normal and pathological changes seen during the aging process as related to physical therapy. Includes theories and demographics of aging, physiological and psychosocial changes, principles of geriatric rehabilitation, pharmacology, orthopedic considerations, fall risk and fall prevention.

PHTH 560. Neurologic Upper Extremity Management. 3 Units.
Evidenced-based course that covers physical therapy practice relevant to adult neurological rehabilitation. Emphasizes an NDT perspective on spasticity, soft tissue, and joint mobilization; constraint-induced movement therapy; PNF; and clinical decision making. Exposes students to material through problem-based learning, literature review, lecture, discussion, and intensive laboratory sessions focused on mastery of manual therapy application.

PHTH 561. Physical Therapy Administration. 4 Units.
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 Units.
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 Units.
Uses a team-based learning approach to introduce students to research terminology, methodology, and skills needed to participate in evidence-based physical therapy practice. Employs practical readiness assurance tests, team application exercises, and group discussions to provide students an opportunity to immediately apply concepts of research methodology. Includes development of research questions, hypotheses, study designs, sampling techniques, study variables, and measurement; as well as reliability, validity, and statistics in the analysis of research literature and evidence.

PHTH 564. Scientific Inquiry II. 2 Units.
Provides experience in the search, application, and integration of evidence to guide physical therapy practice. Students develop searchable questions, determine and use appropriate databases for searching the best evidence, critically appraise evidence, integrate evidence into practice, and evaluate effectiveness of evidence. Culminates in students' presentations of findings based on the search of evidence.

PHTH 565. Sports Physical Therapy I. 1 Unit.
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 Unit.
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 567. Pain Science. 2 Units.
Integrates conceptual frameworks pertinent to the clinical transitioning from acute to chronic pain. Presents functional connectivity brain patterns related to various "pain signatures" of the brain. Reviews functional MRI pain research as it relates to clinical presentations of acute pain, chronic pain, neuropathic pain, and pain-prone personality disorders. Utilizes a proposed classification system for identifying chronic pain patients and introduces counseling management strategies intended to match the particular chronic pain group. Integrates clinical reasoning throughout the entire course, allowing students to draw upon clinical reasoning skills to help navigate management of the patient with acute and chronic pain.

PHTH 571. Physical Therapy Practicum I. 1 Unit.
A two-week, forty clock hours per week supervised clinical experience that introduces students to a variety of practice settings and allows them to begin utilizing physical therapy clinical and professional skills learned during the first year of the PT curriculum.

PHTH 572. Physical Therapy Practicum II. 2 Units.
A four-week, forty clock hours per week, clinical assignment completed in an affiliated clinic--with exposure to any of a variety of settings: acute care, outpatient care, neurorehabilitation, orthopaedics, geriatrics, pediatrics, sports medicine, and preventive care/wellness, etc. Supervised by a licensed physical therapist. May include student participation in direct patient care, team conferences, demonstrations, special assignments, and/or observation.

PHTH 573. Physical Therapy Practicum III. 1.5 Unit.
A three-week, full-time (forty 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 574. Clinical Translation of Pain Science. 3 Units.
Provides a clinically translational understanding of pain science, as well as insight into unraveling the mysteries of the silent epidemic of chronic pain. Introduces the neurobiology of pain and the variety of pain mechanisms that affect an average of 77 million patients each year. Explores the psychology and cognitive aspects of pain and how to measure and assess important aspects that contribute to the chronic pain problem. Incorporates a special topic on neuropathic pain and its contribution to the silent pain epidemic as a vehicle to help understand the "centralized pain" component and cognitive behavioral therapies. Discusses pharmacology and its role in the treatment of pain. Introduces basic concepts that help "retrain the brain" in a variety of patients suffering acute pain while preventing the progression to chronic pain.

PHTH 575. Orthopaedics IV. 1 Unit.
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 577. Introduction to Psychoneuroimmunology: The Science of Whole-Person Care. 3,4 Units.
Investigates the intercommunication between the brain and immune system via neural and endocrine pathways, as well as reactions of the brain and immune system to other internal signals and external stimuli--with their resultant impacts on health, wellness, and therapeutic modalities. Covers endocrinology, genetics, immunology/ inflammation, medicine, neuroscience, psychology, and sociology while highlighting the complexity and viability of interactions between/among systems. Provides a foundation for understanding the interconnections/ communications and thus the consequences/modulations among brain, behavior, body, emotions, and the neuroendocrine and immune systems. Provides insight regarding individual predispositions to or protection from chronic medical conditions, as well as enhancements of therapeutic outcome and wellness. Summarizes the state of knowledge in psychoneuroimmunology and draws important implications for integrative health science research and the reality of whole person health care. Additional assignment for an additional 1 unit.

PHTH 578. Writing for the Physical Therapy Professional and Educator. 3 Units.
Enables the student to develop writing processes and techniques that are clear, precise, and audience appropriate. Students practice and reflect on writing in professional and academic genres--such as literature reviews, case studies, and protocols relevant for physical therapists, other health professionals, and educators. Includes discussion regarding various aspects of writing mechanics and structure. Links practical applications to common writing situations found in the health professions and education, ranging from intradisciplinary written communication to preparing an abstract and manuscript for submission.

PHTH 579. Political Advocacy and Health Policy for Physical Therapists. 3 Units.
Focuses on health-care advocacy at the national, state, grassroots, and local levels as it promotes the interests of patients, professionals, and organizations involved in health-care delivery. Emphasizes physical therapy advocacy that encompasses not only health-care care delivery, but also protection and defense of physical therapy practice acts; as well as political advocacy, which is a complex amalgamation of recognizing the need for change, developing the content for change, identifying the barriers to change, convincing decision makers to adopt change, and then implementing the change--while responding to changes in public policy, that is laws, scope of practice, and regulations. Highlights ways that physical therapists can increase their professional visibility in various environments while supporting the causes of their client?s and persons with disabilities. Students examine and discuss policy issues and strategies relevant to physical therapists and other health professionals and educators; and learn a systematic, comprehensive approach to political advocacy and policy activism.

PHTH 580. Grant Writing for Health Professionals. 3 Units.
Helps students develop effective grant-writing skills essential for acquiring competitive funding from government agencies and private foundations--including content knowledge, writing proficiency, research skills, originality, creativity, and a compelling proposal. Provides students with the background necessary to develop a competitive funding application that demonstrates a systematic, organized approach that is aligned with what is desired by the granting agency. Following the indicated guidelines for submission, students prepare a competitive grant proposal to be submitted to a public or private agency.

PHTH 581. Research Applications I. 2 Units.
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 Units.
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 Unit.
Students pilot test research proposal in a practice setting and test procedures and data forms.

PHTH 596. Applied Research II. 2 Units.
Students implement research proposal in a practice setting, analyze computer data, and prepare a preliminary research report.

PHTH 597. Applied Research III. 1 Unit.
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 Units.
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 Units.
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.

PHTH 626. Pain Science: Interactions of the Brain and Body. 3 Units.
Provides an organized framework to enhance understanding of the underpinnings behind the transition from acute to chronic pain states. Presents a comprehensive understanding of the differences between peripheral neurogenic, central, and somatic pain mechanisms. Provides a foundation to help with the clinical decision-making process in the management of patients with acute or chronic pain. Draws on research related to functional MRI and neurocognitive function to understand the relationships between the brain, personality disorders, and acute and chronic pain. Introduces concepts related to the management of peripheral neurogenic, central, and somatic pain disorders.

PHTH 627. Clinical Reasoning and Critical Thinking in Physical Therapy. 3 Units.
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 Units.
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 Units.
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 Units.
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.

PHTH 634. Cervical Spine. 3 Units.
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 635. Lumbar Spine. 3 Units.
Expands and applies the framework for examination and intervention to patients with musculoskeletal conditions of the lumbar 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 lumbar 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 636. Assessment and Management of the Knee. 3 Units.
Expands and applies the framework for examination and intervention to patients with musculoskeletal conditions of the knee. 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 knee, including tibiofemoral and patellofemoral joints. 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 Units.
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.

PHTH 701A. Physical Therapy Affiliation IA. 4 Units.
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, program integrative 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 and documented feedback utilizing a standardized assessment tool. Student receives a grade for Affiliation IA upon completion of Affiliation IB (PHTH 701B).

PHTH 701B. Physical Therapy Affiliation IB. 1 Unit.
Three-week clinical assignment to be completed during the third year in affiliated clinical settings. Completes PT Affiliation IA without interruption in the clinical schedule. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, program integrative special assignments, in-services, lectures, demonstrations, and conferences. Student's overall performance is facilitated and assessed by the academic coordinators of clinical education, with input and feedback by the clinical instructors who provide direct instruction and documented feedback utilizing a standardized assessment tool. Student receives grade for Affiliation IA and IB upon completion of Affiliation IB.

PHTH 702. Physical Therapy Affiliation II. 5 Units.
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, program integrative 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 and provide feedback utilizing a standardized assessment tool. Expectation for clinical performance higher than expected for PHTH 701A and B. Students must satisfactorily complete PHTH 701 A and B before proceeding to PHTH 702.

PHTH 703. Physical Therapy Affiliation III. 5 Units.
Nine-to-ten-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, program integrative special assignments, in-services, lectures, demonstrations, and conferences. Student's overall performance is facilitated and assessed by the academic coordinators of clinical education, with input and feedback received from clinical coordinators who provide direct instruction and provide documented feedback utilizing a standardized assessment tool. Expectation for clinical performance is higher than expected for PHTH 703. Students must satisfactorily complete PHTH 702 before proceeding to PHTH 703.

PHTH 731. Advanced Orthopaedic Studies. 3 Units.
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. 3 Units.
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. 3 Units.
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.

Physicians Assistant (PAST)

Courses

PAST 504. Primary Care Pediatrics. 2 Units.
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 Units.
Common problems encountered in caring for women; management of these problems. Etiology, pathophysiology, clinical presentation, and diagnostic work-up.

PAST 516. Physician Assistant Professional Issues. 2 Units.
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 for Physician Assistants I. 3 Units.
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 for Physician Assistants II. 3 Units.
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. Continues PAST 518.

PAST 534. Psychiatry/Behavioral Medicine. 4 Units.
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 541. Clinical Medicine for Physician Assistants I. 5 Units.
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 Units.
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.

PAST 543. Clinical Medicine for Physician Assistants III. 3 Units.
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.

PAST 544. Pharmacology for Physician Assistants I. 3 Units.
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 Units.
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.

PAST 547. Basic Medical Science. 3 Units.
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 Units.
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 551. Pathophysiology for Physician Assistants I. 3 Units.
Provides a foundation for clinical medicine through the evaluation of normal human physiology, followed by the pathology of diseases important to each major organ system. Addresses fundamental mechanisms of health and disease.

PAST 552. Pathophysiology for Physician Assistants II. 3 Units.
Provides a foundation for clinical medicine through the evaluation of normal human physiology, followed by the pathology of diseases important to each major organ system. Addresses fundamental mechanisms of health and disease. Continues PAST 551.

PAST 554. Clinical Skills for Physician Assistants. 5 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

PAST 563. Physical Diagnosis III. 3 Units.
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.

PAST 571. Multicultural Competencies for Physician Assistants. 3 Units.
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. 3 Units.
Emphasizes health and medicine as PA students obtain a cross-cultural experience while interacting with non-English-speaking patients and gaining a greater understanding of their patients' culture. Requires completion of a community-based service project and immersion within the local community. Begins in Winter Quarter with culmination in the Summer Quarter.

PAST 580. Clinical Correlation for Physician Assistants. 1 Unit.
Teaches students to apply knowledge gained throughout the didactic curriculum via an interactive learning experience. Emphasizes the critical thought process needed for diagnosis and management of clinical problems. Taught from the Fall Quarter through Summer Quarter of the didactic year.

PAST 581. Physical Diagnosis for Physician Assistants I. 2 Units.
Part one of a four-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination.

PAST 582. Physical Diagnosis for Physician Assistants II. 3 Units.
Part two of a four-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination.

PAST 583. Physical Diagnosis for Physician Assistants III. 2 Units.
Part three of a four-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination.

PAST 584. Physical Diagnosis for Physician Assistants IV. 2 Units.
Part four of a four-part sequence of lecture, demonstration, and practice in the art and science of obtaining a complete medical history and performing the physical examination. Requires satisfactory completion of the comprehensive physical examination and the didactic year objective structured clinical examination (OSCE).

PAST 601. Evidence-Based Medicine for Physician Assistants I. 2 Units.
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 Units.
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. Begins in Winter Quarter with completion in the Summer Quarter. Prepares student for the capstone project.

PAST 603. Capstone. 2 Units.
Course 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; as well as completion of a personal portfolio reflective of the values of Loma Linda University. Requires satisfactory completion of the clinical year objective structured clinical examination (OSCE).

PAST 701. Rotation I. 6 Units.

PAST 702. Rotation II. 6 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

Physiology (PHSL)

Courses

PHSL 501. Neurophysiology DN. 3 Units.
Presents basic principles in neurophysiology to enhance understanding of normal and pathophysiologic function.

PHSL 502. Basic Neurophysiology. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Part II of physiology and pathophysiology (cell, neuro, cardiovascular, pulmonary, GI, renal, endocrine, and reproductive systems).

PHSL 519. Medical Physiology. 7.5 Units.
Physiological basis of normal and selected pathological conditions, modern concepts of homeostasis, and negative feedback control systems. Restricted to Biomedical Science Program (certificate).

PHSL 525. Current Concepts of Cellular and Molecular Neural-Endocrine Interactions. 3 Units.
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.

PHSL 526. Medical Physiology. 7.5 Units.
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 533. Advanced Physiology and Pathophysiology. 4 Units.
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 Units.
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 Units.
Integrated approach to the fundamentals of neuroanatomy and neurophysiology, with applications to clinical neurology.

PHSL 538. Neuroscience. 4 Units.
Integrated approach to the fundamentals of neuroanatomy and neurophysiology, with applications to clinical neurology.

PHSL 541. Cell and Molecular Biology. 4 Units.
Life processes fundamental to animal, plant, and microorganisms; a graduate-level introduction. Lecture 3 units, laboratory 1 unit each term. Offered alternate years.

PHSL 542. Signal Transduction. 3 Units.
Part of PHSL 503. Comprehensively describes signal transduction pathways and other cellular regulatory mechanisms that form the basis of receptor-response phenomena.

PHSL 543. Cell-Cell Interaction. 3 Units.
Discusses the role of cell-cell interactions and the mechanism for cellular specialization, emphasizing the immune system.

PHSL 544. Cell and Molecular Neurobiology. 3 Units.
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 Units.
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.

PHSL 553. Introduction to Electronics and Computing as Applied to Biomedical Research. 4 Units.
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.

PHSL 554. Computer Simulation of Biomedical Systems. 3 Units.
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 Units.
Interdisciplinary approach to study of the causation, characterization, and prevention of cancer. Offered alternate years.

PHSL 556. Biology of Cancer Laboratory. 2 Units.
Introduces techniques essential to research investigations in cancer. Offered alternate years.

PHSL 558. Physiology of Exercise and Inactivity. 3 Units.
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 Units.
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 Units.
Studies the structure and function of vascular smooth muscle and the mechanism(s) controlling its function.

PHSL 577. Cardiac Physiology. 3 Units.
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.

PHSL 578. Vascular Physiology. 3 Units.
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.

PHSL 584. Readings in Neurophysiology. 2 Units.
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.

PHSL 587. Physiology of Reproduction. 2 Units.
Studies the development of the male and female reproductive systems, neural and hormonal control of reproductive function, fetal development, and parturition. Offered alternate years.

PHSL 588. Pathophysiology. 4 Units.
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 Units.
Assigned reading and conferences on special problems in physiology.

PHSL 604. Current Topics in Perinatal Physiology. 1 Unit.
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 Unit.
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 Units.

PHSL 697. Research. 1-8 Units.

PHSL 698. Thesis. 1 Unit.

PHSL 699. Dissertation. 2-4 Units.

PHSL 741. Physiology of Bone. 1 Unit.
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. 1.5-24 Units.
Offers fourth-year medical students the opportunity to explore various areas of physiology, including research.

Play Therapy (PLTH)

Courses

PLTH 513. Introduction to Play Therapy. 3 Units.
Provides content on the history and various theoretical underpinnings of play therapy while emphasizing the importance of professional ethics and legal guidelines when conducting play therapy. Gives attention to the explanatory nature of theories as informing methods and techniques used in assessment and healing processes. Introduces three of the most widely used theories of play therapy--Child Centered Play Therapy, Cognitive-Behavioral Play Therapy, and Gestalt Play Therapy. Designed for students who have already taken the theory courses required in their respective degree areas. Requires permission of instructor.

PLTH 514. Play Therapy II: Introduction to General Theories and Practice. 3 Units.
Foundational play therapy course that provides content on the theoretical underpinnings of play therapy. Gives attention to the explanatory nature of theories as informing methods and techniques used in assessment and healing processes. Introduces three of the most widely used theories of play therapy--Child Centered Play Therapy, Cognitive-Behavioral Play Therapy, and Gestalt Play Therapy. Designed for students who have already taken the theory courses required in their respective degree areas. Requires permission of instructor.

PLTH 515. Play Therapy III: Assessment and Diagnosis. 2 Units.
Foundational play therapy course that provides content on structured and informal assessment processes and techniques. Social and symbolic play provides balance of content and process of differential diagnosis from a neurocognitive basis of development, including variations in the developmental sequence caused by developmental disorders.

PLTH 516. Child-Centered Play Therapy. 3 Units.
A foundation play therapy course that provides a systematic treatment approach to child-generated play. Combines didactic presentations and experiential activities that detail the four major elements of CCPT technique: structuring, reflective listening, fantasy play, and limit setting. Gives attention to history and theory of CCPT, the benefits of the model, assessment, and combining CCPT with other models of child therapy.

PLTH 517. Sandplay: A Therapeutic Process. 3 Units.
Foundational play therapy course providing didactics on the theoretical basis, content, and process of sandplay. Active learning experiences provide students with opportunities to observe and engage in sandplay with children.

PLTH 546. Child-Parent Relationship Therapy-CPRT (Filial Therapy). 3 Units.
Provides students with an understanding of evidence-based play therapy interventions that support filial (parent-child) communication and relationships as children experiencing social, emotional, and behavioral difficulties are treated. Builds upon a previous foundation of play therapy course work.

PLTH 547. Play Therapy Approaches for Treating Developmental and Behavioral Disorders. 2 Units.
Advanced play therapy course that provides content on the theory, methods, and techniques used in Developmental Play Therapy. Content emphasizes methodologies that provide children with developmental experiences essential to physical and social-emotional growth, as well as a secure attachment in the child-parent relationship in situations where a diagnosis may affect the quality of the child-parent relationship. Emphasizes techniques used to promote sensory integration and self-regulation, as well as adaptations of play techniques for use with children diagnosed with learning challenges, autism, and other developmental delays. Explores adjunctive resources and concrete methods for working with parents and school personnel in a manner that assists in the generalization of skills learned through play therapy. Completion of foundational play therapy courses required prior to taking this course.

PLTH 548. Child Psychosocial Play Therapy. 2 Units.
Advanced play therapy course that provides content on strategies and methods used to help children and families address environmental and life/stress adjustment issues. Includes support that enhances child and family wellness by helping children and families understand and develop self-regulation toward improved functioning. Presents a wide range of structured play therapy techniques and their theoretical underpinnings. Completion of foundational play therapy courses required prior to taking this course.

PLTH 549. Therapeutic Play for Children Affected by Illness and Injury. 3 Units.
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.

PLTH 550. Trauma Focused Play Therapy. 3 Units.
This course covers play therapy techniques used to help children prevent or resolve psychosocial challenges following trauma and achieve optimal growth and development. The course utilizes current trauma research and will consist of basic principles of intervention as well as ethical/legal guidelines for the assessment and treatment of traumatized children. Expressive play therapies such as drawings, games, and other symbolic techniques which enable children to externalize and process trauma related experiences in a nonthreatening way will be covered along with aspects of the trauma resiliency model. A emphasis on techniques that can be use within a global context will also be provided.

PLTH 650. Play Therapy with Adolescents and Adults. 3 Units.
Advanced play therapy course that emphasizes play therapy with adolescents and adults. Topics include play therapy techniques to engage adolescents/adults, including: transitional objects using a nondirective stance; games of rapport, courtesy, and good habits; metaphorical thinking; grounded play therapy; poetry and drama; cognitive-behavioral interventions for anger, bullies, victims, and bystanders; and filial therapy with adolescents. Foundational play therapy courses required prior to taking this course.

PLTH 700. Practicum in Play Therapy. 2 Units.
Provides 45 contact hours of practice in play therapy assessment, diagnosis, and intervention techniques with children and their parents enrolled in services at the Behavioral Health Institute. Students, practicing under the direct supervision of a qualified instructor, receive 5 contact hours of supervision by a registered play therapist. An In Progress (IP) notation recorded during the five quarters usually needed to compete this practicum experience. Foundational play therapy courses required prior to taking this course.

Polysomnography (RSPS)

Courses

RSPS 210. Foundation of Polysomnography and Sleep Medicine. 3 Units.
Covers the history of sleep medicine (polysomnography) from its inception and development to current practice. Enhances understanding of the role and differences of the polysomnographer. Teaches the documentation process in sleep laboratory facilities and understanding of the data required for monitoring patient and charting results during the study. Lectures include physiological factors that identify normal sleep pattern in adult and pediatric populations.

RSPS 227. Neuroanatomy and Physiology of Sleep. 3 Units.
Covers the basic neuroanatomy of the brain and nervous system that is involved in the various normal and abnormal sleep patterns. Additional topics include: sleep pharmacology and medications; pharmacokinetics, drug mechanism of action; review of basic cardiac physiology and waveforms; respiratory anatomy and physiology and its relation to the central nervous system.

RSPS 230. Polysomnography Science Methodology. 3 Units.
Covers the procedures of patient preparation before the sleep study, such as: proper electrode placement; principles of the conduction system, signal derivation, and amplification; signal processing, filter, and sensitivity; calibration; and AC/DC instrumentation. Includes the principle of electroneurodiagnostic equipment and correct patient connection and the biophysics and mechanical principles behind equipment used in polysomnography laboratory. Provides thorough basic laboratory training on various types of equipment used in the sleep center.

RSPS 234. Polysomnography Patient Education and Safety. 2 Units.
Covers the management of patient safety in the sleep laboratory. Topics include: patient education about sleep, common chief complaints relative to sleep disorders, infection control, cultural differences and interactions, ethics, and professionalism in the sleep laboratory.

RSPS 256. Polysomnography Monitoring and Scoring. 3 Units.
Teaches student to manage and identify device monitoring, such as: vital signs; EEG, ECG, EOG, and EMG waveforms; visual, arousal, cardiac, movement, and respiratory scoring criteria and applicable protocols for observation and documentation. Assessing, monitoring, and recording patient-movement disorders, parasomnias, psychiatric sleep disturbances, and sleep. Data interpretation and recognition and their relation to sleep disorders.

RSPS 274. Polysomnography Diseases. 3 Units.
Teaches students to recognize and distinguish between sleep disorders and their pathophysiologies, such as obstructive sleep apnea in adults and pediatrics; hypopneas; respiratory effort-related arousals; central apneas; complex sleep apnea; and other normal and abnormal respiratory breathing patterns, such as Cheyne-Stokes. Introduces the treatment of sleep disorders, including CPAP and titration methods, bilevel ventilation, oxygen therapy, and surgical intervention. Additional topics include understanding and recognizing nonrespiratory sleep disorders, such as narcolepsy, hypersomnia, insomnia, seizure, and epilepsy.

RSPS 286. Polysomnography Case Study. 3 Units.
Student presents patient-case studies based on patient-information gathering that includes history and physical, review of systems, rationale for diagnostics and treatment, vital signs, PMH, questionnaire, scores, waveform, treatments, and study data.

RSPS 295. Polysomnography Practicum I. 4 Units.
Introduces students to sleep center facilities, working hours, documentation, and facility personnel. Students perform patient assessment and obtain patient history; as well as correctly perform complete set up, data acquisition, and reporting processes. Covers waveform interpretation (ECG, EEG, EOG, and EMG) skills. Patient monitoring, vital signs: heart rate and rhythm, blood pressure, respiratory rate, oxygen saturation, and carbon dioxide monitoring. Students apply interventional modalities, such as CPAP or bi-level therapy, with appropriate titration to relieve relative sleep disorders. Students practice scoring sleep studies.

RSPS 296. Polysomnography Practicum II. 4 Units.
Gives students opportunities to perform advanced clinical procedures in the sleep center and perform complete polysomnogram independently under supervision of the sleep center staff.

Preventive Medicine (PRVM)

Courses

PRVM 517. Clinical Preventive Medicine. 4 Units.
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. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various aspects of preventive medicine and public health, including nutrition, mission opportunities, functional medicine, lifestyle medicine, and research.

Prosthodontics (PROS)

Courses

PROS 500. Prosthodontic Literature Review. 2 Units.
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 Units.
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 Units.
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 Unit.
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 Unit.
Teaching experience in the areas of fixed and removable prosthodontics. Repeated registration required to fulfill the total units.

PROS 525. Dental Materials Science. 2 Units.
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 Units.
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 Units.
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 Units.
Continues PROS 546--emphasizing occlusal equilibration, jaw movements, determinants of occlusion, and articulators commonly used.

PROS 555. Removable Partial Prosthodontics. 2 Units.
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 Unit.
Provides students with information about the function and dysfunction of the temporomandibular joint and associated structures. Prepares students to obtain history, perform clinical examination, recognize disorders, and prescribe treatment. Introduces students to diagnosis and treatment of sleep apnea, as well as neuropathic and neurovascular pain. Students complete a term paper on a related topic.

PROS 557. Advanced Removable Partial Prosthodontics. 2 Units.
Advanced clinical and laboratory procedures, emphasizing intracoronal attachments, rotational path, and alternate removable partial-denture design.

PROS 565. Complete Denture Prosthodontics. 2 Units.
Clinical and laboratory procedures for the fabrication of complete dentures, including setting and balancing denture teeth.

PROS 566. Advanced Complete Denture Prosthodontics. 2 Units.
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 Units.
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 Units.
Clinical and laboratory procedures, emphasizing advanced metal-ceramic restorations.

PROS 595. Maxillofacial Prosthetics. 2 Units.
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 Units.
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 Units.
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 Unit.
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 Unit.
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 Unit.
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 Unit.
Conducting the actual research project, including the data collection. Multiple registrations may be needed to complete these research activities.

PROS 697C. Research. 1 Unit.
Student completes research project, holds a public presentation of research, and submits a publishable paper to his/her research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

PROS 698. Thesis. 2 Units.

PROS 710. Clinical Practice of Prosthodontics. 6 Units.
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.

Psychiatry (PSYT)

Courses

PSYT 525. Fundamentals of Behavioral Science. 3 Units.
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 526. Psychopathology. 4.5 Units.
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 599. Psychiatry Directed Study. 1.5-18 Units.

PSYT 701. Psychiatry Clerkship. 1.5-9 Units.
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. 1.5-27 Units.
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.

Psychology (PSYC)

Courses

PSYC 226. Lifespan Development. 4 Units.
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 Units.

PSYC 305. Psychological Foundations of Education. 4 Units.
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.

PSYC 404. Psychological Tests and Measurements. 3 Units.
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 Units.
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 Units.
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 Units.
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 501. Advanced Statistics I. 4 Units.
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 Units.
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.

PSYC 503. Advanced Multivariate Statistics. 4 Units.
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.

PSYC 504. Research Methods for Clinical Psychologists. 4 Units.
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 Units.
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 Units.
Advanced orientation to psychological instruments; their theoretical derivation, construction, and use. Emphasizes reliability, validity, and factor structures.

PSYC 512. Cognitive/Intellectual Assessment. 2 Units.
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. Considers the empirical reliability and validity data for each instrument.

PSYC 512L. Cognitive/Intellectual Practice Laboratory. 1 Unit.
Supervised experiences in administering, scoring, interpreting, and report writing relevant to various adult and child intelligence and achievement instruments.

PSYC 513. Objective Personality Assessment. 2 Units.
Instruction in administering, scoring, interpreting, and report writing relevant to various adult and child objective personality instruments, such as MMPI-2, MMPI-A, MACI, PIC, 16PF, CDI, BDI, and BAI. Considers the empirical reliability and validity data for each instrument.

PSYC 513L. Objective Personality Practice Laboratory. 1 Unit.
Supervised experiences in administering, scoring, interpreting, and reporting relevant to various adult and child objective personality instruments.

PSYC 516. Neuropsychological Assessment. 2 Units.
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 Practice Laboratory. 1 Unit.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Focuses on an aspect of integration of psychology and religion.

PSYC 537. Applied Behavioral Medicine. 2 Units.
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; consult-liaison 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 Units.
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 Units.
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 Units.
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 Psychology and Practice in Medical Settings. 2 Units.
Provides an understanding of how the behavioral and biological sciences interact to influence health care. Provides an overview of the application and practice of clinical psychology in hospital settings, with special attention to the primary care setting from an integrated sciences model for uniting the contributions of the biomedical and the behavioral sciences in teaching and practice.

PSYC 547. Health Psychology Assessment. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Advanced coverage of neurotransmitter systems, with particular emphasis on the mechanism of action of various psychoactive substances.

PSYC 556. Biofeedback. 4 Units.
Intensive learning experience in biofeedback concepts, terms, and techniques--including biofeedback applications for treating and diagnosing a wide range of psychophysiologic 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.

PSYC 558. Psychological and Forensic Assessment and Evaluation of Competencies. 3 Units.
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 Units.
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. Cultural Psychology. 4 Units.
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 Units.
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 Units.
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 Units.
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.

PSYC 575. Foundations of Human Development. 4 Units.
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. Evidence-Based Psychological Practice I. 2 Units.
Theory, evidence-based practice, and empirically supported treatment protocols of the cognitive and behavioral aspects of the integrated biopsychosocial-spiritual therapy model.

PSYC 581L. Evidence-Based Psychological Practice I. 1 Unit.
Supervised experience observing and/or engaging in laboratory assignments.

PSYC 582. Evidence-Based Psychological Practice II. 2 Units.
Theory, evidence-based practice, and empirically supported treatment protocols of the psychodynamic and group aspects of the integrated biopsychosocial-spiritual therapy model.

PSYC 582L. Evidence-Based Psychological Practice II. 1 Unit.
Supervised experience observing and/or engaging in laboratory assignments.

PSYC 583. Evidence-Based Psychological Practice III. 2 Units.
Theory, evidence-based practice, and empirically supported treatment protocols of the phenomological and couple aspects of the integrated biopsychosocial-spiritual model.

PSYC 583L. Evidence-Based Psychological Practice III. 1 Unit.
Supervised experience observing and/or engaging in laboratory assignments.

PSYC 584. Evidence-Based Psychological Practice IV. 2 Units.
Theory, evidence-based practice, and empirically supported treatment protocols of the child and family aspects of the integrated biopsychosocial-spiritual therapy model.

PSYC 584L. Evidence-Based Psychological Practice IV. 1 Unit.
Supervised experience observing and/or engaging in laboratory assignments.

PSYC 591. Colloquia. 1 Unit.
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 Units.

PSYC 595. Directed Research. 1-13 Units.
Academic credit for research leading to the second-year project. Requires a total of 13 units.

PSYC 596. Directed Study. 1-4 Units.
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 Unit.
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 Units.
Advanced topics in statistical analysis and research methods in psychology.

PSYC 646. The Nature of Emotion. 3 Units.
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.

PSYC 654. Behavioral Neurology. 2 Units.
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 Units.
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 Units.
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.

PSYC 657. Seminar in Cortical Functions: Posterior Cortex. 2 Units.
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.

PSYC 658. Seminar in Subcortical Function. 2 Units.
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.

PSYC 674. Infant and Toddler Development. 2 Units.
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 Unit.
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 Unit.
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 Units.
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 Unit.
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 Unit.
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.

PSYC 683. Management and Professional Practice. 1 Unit.
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 Unit.
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 Units.
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 Units.
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 Units.

PSYC 695. Issues in Clinical Psychology. 1-4 Units.
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 Units.
Course covers both the Psy.D. research proposal through to the final Psy.D. project defense and completion.

PSYC 697. Doctoral Research. 1-4 Units.
Academic credit for dissertation research. A total of 43 units required.

PSYC 721. Practicum Preparation I. 3 Units.
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 Units.
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 Units.
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 Units.

PSYC 784. External Practicum III. 4 Units.

PSYC 785. External Practicum IV. 4 Units.

PSYC 786. External Practicum V. 4 Units.

PSYC 795. Directed Clinical Experience. 1-3 Units.
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 Units.
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 Units.
Must be repeated to a total of 4 units.

PSYC 799A. Internship. 5 Units.
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 Units.
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.

Public Administration (PUAD)

Courses

PUAD 665. Information Technology and Decision Science. 4 Units.

PUAD 668. Philosophy and Theory of Public Interest. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

PUAD 678. Public Administration Management. 3 Units.
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 Units.
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 Units.
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.

Public Health—Conjoint (PHCJ)

Courses

PHCJ 250. Fundamentals of Human Anatomy and Physiology. 4 Units.
Integrated, fundamental study of anatomy and physiology of the human body from a systems perspective. Includes laboratory.

PHCJ 401. Essentials of Public Health. 4 Units.
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 Unit.
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 Units.
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 517. History and Philosophy of Adventist/Health Education. 3 Units.
Explores the essence of Loma Linda University and the Seventh-day Adventest philosophy of medical and health education as found in the writings of Ellen G. White and others. Discusses the core values of LLU and the science and promotion of healthy lifestyles and health-care delivery.

PHCJ 524. SPECIAL TOPICS IN PUBLIC HEALTH PRACTICE. 1-4 Units.
Current topics in public health. Specific content varies from quarter to quarter. May be repeated for additional credit.

PHCJ 525A. Special Topics in Public Health. 1-4 Units.
Cross-disciplinary integration of current public health core content. Specific content varies from quarter to quarter. May be repeated for additional credit.

PHCJ 525B. Special Topics in Public Health. 1-4 Units.
Cross-disciplinary integration of current public health core content. Specific content varies from quarter to quarter. May be repeated for additional credit.

PHCJ 525C. Special Topics in Public Health. 1-4 Units.
Cross-disciplinary integration of current public health core content. Specific content varies from quarter to quarter. May be repeated for additional credit.

PHCJ 525D. Special Topics in Public Health. 1-4 Units.
Cross-disciplinary integration of current public health core content. Specific content varies from quarter to quarter. May be repeated for additional credit.

PHCJ 526. SPECIAL TOPICS IN PUBLIC HEALTH. 1-4 Units.
Lecture, discussion, and practice of the theory and application of a current public health topic. Specific content varies from quarter to quarter. May be repeated for additional credit. Graded S/U.

PHCJ 604. Research Seminar. 2 Units.
Student develops and critiques research and dissertation proposals, with peer review of research protocols. Limited to doctoral degree students.

PHCJ 605. Overview of Public Health. 1 Unit.
Selected topics addressing issues, concepts, and recent developments in public health.

PHCJ 610. Introduction to American Graduate Medical Education. 1 Unit.
Introduces varying topics and issues unique to the graduate medical education system in the United States. Designed for international medical graduates.

PHCJ 675. Integrated Public Health Capstone. 2 Units.
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. Student applies and integrates knowledge and expertise through case studies taken from current public health issues in local, national, and global environments.

PHCJ 695. Community Practicum. 1-4 Units.
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.

PHCJ 798A. Public Health Practicum. 2 Units.
Provides students with the opportunity to integrate and apply classroom learning in a public health work environment through an approved, planned, and supervised practicum--as specified by the program. Course components include: placement in an agency or organization with a plan that develops and applies learned public health skills; a minimum of 100 practicum work hours; an approved learning contract; faculty and agency oversight; a midpoint review; a written abstract; a presentation and/or written report; and evaluations. Practicum course graded as satisfactory or unsatisfactory.

PHCJ 798B. Public Health Practicum. 4 Units.
Provides students with the opportunity to integrate and apply classroom learning in a public health work environment through an approved, planned, and supervised practicum--as specified by the program. Course components include: placement in an agency or organization with a plan that develops and applies learned public health skills; a minimum of 200 practicum work hours; an approved learning contract; faculty and agency oversight; a midpoint review; a written abstract; a presentation and/or written report; and evaluations. Practicum course graded as satisfactory or unsatisfactory.

PHCJ 798C. Public Health Practicum. 6 Units.
Provides students with the opportunity to integrate and apply classroom learning in a public health work environment through an approved, planned, and supervised practicum--as specified by the program. Course components include: placement in an agency or organization with a plan that develops and applies learned public health skills; a minimum of 300 practicum work hours; an approved learning contract; faculty and agency oversight; a midpoint review; a written abstract; a presentation and/or written report; and evaluations. Practicum course graded as satisfactory or unsatisfactory.

PHCJ 798D. Public Health Practicum. 8 Units.
Provides students with the opportunity to integrate and apply classroom learning in a public health work environment through an approved, planned, and supervised practicum--as specified by the program. Course components include: placement in an agency or organization with a plan that develops and applies learned public health skills; a minimum of 400 practicum work hours; an approved learning contract; faculty and agency oversight; a midpoint review; a written abstract; a presentation and/or written report; and evaluations. Practicum course graded as satisfactory or unsatisfactory.

Radiation Medicine (RDMN)

Courses

RDMN 891. Radiation Medicine Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of radiation medicine.

Radiation Technology Advanced Medical Imaging (RTAM)

Courses

RTAM 401. Advanced Clinical. 5 Units.
Advanced clinical experience in selected areas of professional practice, such as orthopedic radiography, fluoroscopy, trauma, C-arm operation, and pediatrics.

RTAM 402. Advanced Clinical. 10 Units.
Advanced clinical experience in selected areas of professional practice, such as orthopedic radiography, fluoroscopy, trauma, C-arm operation, and pediatrics.

RTAM 403. Advanced Clinical. 10 Units.
Advanced clinical experience in selected areas of professional practice, such as orthopedic radiography, fluoroscopy, trauma, C-arm operation, and pediatrics.

RTAM 404. Advanced Clinical. 10 Units.
Advanced clinical experience in selected areas of professional practice, such as orthopedic radiography, fluoroscopy, trauma, C-arm operation, and pediatrics.

RTAM 405. Advanced Clinical. 2 Units.
Advanced clinical experience in selected areas of professional practice, such as orthopedic radiography, fluoroscopy, trauma, C-arm operation, and pediatrics.

RTAM 454. Advanced Patient Care. 3 Units.
Addresses patient care topics, such as trauma and medical emergencies, patient assessment, and pharmacology.

RTAM 458. Advanced Imaging Procedures. 3 Units.
Introduces students to various imaging procedures and modalities including: anatomy, patient positioning, geometric factors, and radiation protection beyond the level of a basic medical radiographer.

RTAM 464. Pathology. 3 Units.
Reviews pathologic processes most commonly found in imaging modalities.

RTAM 468. Advanced Imaging Principles. 3 Units.
Provides advanced instruction in the use of digital imaging technology in radiology modalities, including new and emerging technologies and other radiology-related applications.

RTAM 474. Patient Education and Evidence-Based Medicine. 3 Units.
Introduces clinical pathways, multidisciplinary clinical practice, and a focus on quality and coordination of care. Includes relationship-centered patient care, effective communication, and patient education.

RTAM 478. Introduction to Computed Tomography. 3 Units.
Introduces basic concepts related to computed tomography (CT), including: patient care, communication, principles, and procedures.

Radiation Technology Education (RTED)

Courses

RTED 411. Student-Teaching Practicum I. 3 Units.
Classroom teaching experience. Student prepares lecture outlines, objectives, and tests; and presents lectures and laboratory sessions. Practical application of teaching techniques.

RTED 412. Student-Teaching Practicum II. 3 Units.
Classroom teaching experience. Student prepares lecture outlines, objectives, and tests; and presents lectures and laboratory sessions. Practical application of teaching techniques.

RTED 474. Instructional Techniques. 3 Units.
Develops units of instruction, instructional objectives, and evaluation procedures. Developed units show alignment of objectives, learning experiences, assignments, and assessment.

RTED 475. Curriculum Development in Health Sciences. 3 Units.
Applies curriculum-development theories and approaches to the health science arena through the design of a curriculum project.

RTED 476. Adult Learning Theory. 3 Units.
Examines adult learning theories and teaching approaches to increase student learning outcome success.

RTED 477. Learning Activities and Assessment. 3 Units.
Investigates active learning approaches, their integration into the classroom, and how to assess them.

RTED 478. Online Instructional Design. 3 Units.
Explores the design of online or hybrid courses to incorporate active learning approaches and create community in the online environment.

RTED 485. Technology in Education. 3 Units.
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.

Radiation Technology/Imaging Informatics (RTII)

Courses

RTII 354. Introduction to Informatics. 3 Units.
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 Units.
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 Units.
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 Units.
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.

RTII 364. Administrative Issues in Informatics. 3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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)

Courses

RTMD 301. Treatment Planning I. 2 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
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 Unit.
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 Units.
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 Units.
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 Units.
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. 8 Units.
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: twenty-eight hours.

RTMD 962. Practicum. 10 Units.
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: thirty-four hours.

RTMD 963. Practicum. 9 Units.
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: thirty-one hours.

RTMD 964. Practicum. 11 Units.
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: thirty-six hours.

RTMD 965. Practicum. 11 Units.
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: thirty-six hours.

RTMD 971. Practicum. 10 Units.
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: thirty-three hours.

RTMD 972. Practicum. 9 Units.
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: thirty hours.

RTMD 973. Practicum. 10 Units.
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: thirty-four hours.

RTMD 974. Practicum. 11 Units.
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: thirty-six hours.

RTMD 975. Practicum. 11 Units.
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: thirty-six hours.

Radiation Technology/Medical Radiography (RTMR)

Courses

RTMR 202. Clinical Orientation. 3 Units.
Clinical orientation to the functions of radiologic technologists. Clinical environment orientation conducted at affiliated clinical sites.

RTMR 221. Radiologic Patient Care. 2 Units.
Addresses patent 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 Unit.
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 Communication. 2 Units.
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 247. Languages for Radiographers. 1 Unit.
Introduces radiography students to the words, phrases, and medical terminology most often used in radiographic patient care situations for the common languages of patients.

RTMR 253. Medical Radiography Procedures I. 2 Units.
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 Unit.
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 Units.
Introduces students to various radiographic procedures, which include anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding. Continues RTMR 253.

RTMR 254L. Medical Radiography Procedures Laboratory II. 1 Unit.
Applies principles of patient positioning in a laboratory setting. Students practice optimum positioning practices on classmates and volunteers. Anatomy covered includes: abdomen, spine, skull, and pelvis.

RTMR 255. Medical Radiography Procedures III. 2 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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. 3 Units.
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. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Introduces basic principles, physics, imaging parameters, radiological effects, management, and patient protocol of computed tomography (CT).

RTMR 321. Radiographic Image Evaluation. 2 Units.
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 Units.
Recognition of basic anatomical landmarks as visualized in axially created digital images.

RTMR 342. Professional Development. 1 Unit.
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 Units.
Reviews the pathologic processes most commonly viewed by radiographers using radiologic imaging methods.

RTMR 363. Comprehensive Review I. 1 Unit.
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. 2 Units.
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 Units.
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 Units.
Continues RTMR 371.

RTMR 373. Medical Radiography Affiliation III. 12 Units.
Continues RTMR 371 and 372.

RTMR 374. Medical Radiography Affiliation IV. 10 Units.
Continues RTMR 371, 372, and 373.

RTMR 375. Medical Radiography Affiliation V. 10 Units.
Continues RTMR 371, 372, 373, and 374.

RTMR 376. Mammography Board Exam Prep. 2 Units.
The basics of mammography, including 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. Prepares students for ARRT or California board examination in mammography.

RTMR 377. Mammography Affiliation. 1 Unit.
Clinical experience required prior to sitting for the ARRT (M) examination. Students work with an affiliate to complete competencies specific to mammography.

RTMR 379. Special Project. 1-3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Continues RTMR 371, 372, 373, 374, and 375.

RTMR 401. Advanced Clinical Procedures I. 1-3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
In-depth look at continuous quality management of all aspects in a radiology department, from equipment to personnel.

Radiation Technology/Medical Sonography (RTMS)

Courses

RTMS 339. Echocardiography I. 4 Units.
Focuses on normal anatomy, scan techniques, cardiac measurement, and new dynamics. Case study presentations.

RTMS 344. Introduction to Medical Sonography. 5 Units.
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 Units.
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 Units.
Covers vascular technology, Doppler, abdomen, and small parts. Continues case studies and case presentations.

RTMS 347. Echocardiography II. 4 Units.
Echocardiography, adult and pediatric. Further focuses on anatomy, pathology, hemodynamics, and Doppler. Includes case studies and presentations.

RTMS 348. Abdomen/Neurosonography. 5 Units.
Sonography of the abdomen and neonatal neurosonography specialties 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 379. Ultrasound Physics and Instrumentation I. 2 Units.
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 Unit.
Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

RTMS 382. Topics in Medical Sonography II. 1 Unit.
Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

RTMS 383. Topics in Medical Sonography III. 1 Unit.
Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

RTMS 384. Topics in Medical Sonography IV. 1 Unit.
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 Units.
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 Units.
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. 2 Units.
Study and review of the basic physical principles and instrumentation of ultrasound, with additional emphasis on Doppler and artifacts.

RTMS 401. Advanced Clinical Procedures I. 1-3 Units.
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 Units.
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 Units.
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 Units.
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 Unit.
Clinical experience in vascular ultrasound (416 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 962. Vascular Ultrasound Clinical Affiliation. 10 Units.
Clinical experience in vascular ultrasound (416 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 963. Vascular Ultrasound Clinical Affiliation. 10 Units.
Clinical experience in vascular ultrasound (416 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 964. Vascular Ultrasound Clinical Affiliation. 10 Units.
Clinical experience in vascular ultrasound (300 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 965. Cardiac Ultrasound Clinical Affiliation. 12 Units.
Clinical experience in cardiac ultrasound (384 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 966. Cardiac Ultrasound Clinical Affiliation. 11 Units.
Clinical experience in cardiac ultrasound (352 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 967. Cardiac Ultrasound Clinical Affiliation. 11 Units.
Clinical experience in cardiac ultrasound (352 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 968. Cardiac Ultrasound Clinical Affiliation. 12 Units.
Clinical experience in cardiac ultrasound (440 clock hours per quarter) covering a wide variety of technical procedures.

RTMS 971. Medical Sonography Clinical Affiliation. 11 Units.
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 Units.
Clinical experience in medical sonography (384 clock hours) covering a wide variety of technical procedures.

RTMS 973. Medical Sonography Clinical Affiliation. 11 Units.
Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.

RTMS 974. Medical Sonography Clinical Affiliation. 11 Units.
Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.

RTMS 975. Medical Sonography Clinical Affiliation. 12 Units.
Clinical experience in medical sonography (384 clock hours) covering a wide variety of technical procedures.

RTMS 976. Medical Sonography Clinical Affiliation. 11 Units.
Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.

RTMS 977. Medical Sonography Clinical Affiliation. 11 Units.
Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.

RTMS 978. Medical Sonography Clinical Affiliation. 11 Units.
Clinical experience in medical sonography (352 clock hours) covering a wide variety of technical procedures.

Radiation Technology/Nuclear Medicine (RTNM)

Courses

RTNM 351. Principles of Nuclear Medicine I. 4 Units.
Covers the historical developments that led to the field of nuclear medicine. Describes the structure of the atom and the factors that make an atom radioactive. Reviews the laws of physics; periodic chart of the elements; and the trilinear chart of the nuclides, radioactive decay, radionuclide production, and quality control of radiopharmaceuticals.

RTNM 351L. Principles of Nuclear Medicine I Laboratory. 1 Unit.
A laboratory course that emphasizes the material presented in RTNM 351. Structure of the atom, radioactive decay, radionuclide production.

RTNM 352. Principles of Nuclear Medicine II. 4 Units.
Includes the model of the atom, as well as electromagnetic and particle radiation. Lists the types of radioactive decay, along with the radiation interactions with matter. Defines terms that are specific to radioactive decay and performs calculations used in nuclear medicine for pre- and postcalibration of radionuclides.

RTNM 352L. Principles of Nuclear Medicine II Laboratory. 1 Unit.
A laboratory course that emphasizes the material presented in RTNM 352. Electromagnetic and particle radiations, radioactive decay interactions, and calculations.

RTNM 353. Nuclear Medicine Procedures I. 2 Units.
Covers the nuclear medicine procedures used to image, diagnose, and treat disease with radiopharmaceuticals. Teaches students which radionuclides are used to image the various organs in the body--such as the endocrine system, cardiovascular system, respiratory system, and skeletal system. As part of utilizing radiation in patient care, teaches the technologist how to prepare the patient for the scan, the route of administration of the radiopharmaceutical, and the method of localization for organ imaging. Provides a basic understanding of radiopharmacy and quality control of radiopharmaceuticals.

RTNM 353L. Nuclear Medicine Procedures Laboratory. 1 Unit.
A laboratory course that emphasizes the material presented in RTNM 353.

RTNM 354. Nuclear Medicine Procedures II. 2 Units.
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 354L. Nuclear Medicine Procedures II Lab. 1 Unit.
A laboratory course that emphasizes the material presented in RTNM 354.

RTNM 355. PET/CT. 2 Units.
Covers the radionuclides, radiopharmaceuticals, and contrast agents used for PET/CT imaging. Topics include: localization, indications, method of administration, standard dose range, quality control, contraindications, patient history, patient preparation, equipment, technical considerations.

RTNM 356. Positron Emission Tomography. 2 Units.
Student learns the fundamental physics, instrumentation, and radionuclide requirements of positron emission tomography (PET).

RTNM 357. Instrumentation I. 4 Units.
Covers the auger/gamma scintillation camera, collimators and crystals used in nuclear medicine. Topics include: photomultiplier tubes, pulse height analyzer, resolution, count rate, field uniformity, Geiger-Mueller counter, ionization chambers, sodium iodide well counter, dose calibrator, image acquisition, matrix size, and filters.

RTNM 357L. Instrumentation I Laboratory. 1 Unit.
A laboratory course that emphasizes material presented in RTNM 357. Gamma camera components, dose calibrator, ionization chambers, and sodium iodide well counter.

RTNM 358. Instrumentation II. 4 Units.
Covers quality control of gamma cameras and dose calibrators. Topics include: data acquisition of single-photon emission computed tomography, image filtering, field uniformity assessment and correlation, X and Y gain calibration, and positron emission tomography.

RTNM 358L. Instrumentation II Laboratory. 1 Unit.
A laboratory course that emphasizes material presented in RTNM 358. Gamma camera quality control protocols, SPECT and CT images, and data acquisition.

RTNM 361. Radiopharmacy I. 2 Units.
Covers nuclear stability and decay, radionuclide production, radioactive decay, radionuclide generator systems, radionuclides, quality control, and legal requirements.

RTNM 362. Radiopharmacy II. 3 Units.
Covers the standard dose ranges, radioactive isotopes, decay tables, distribution, preparing kits, adverse reactions, and new radiopharmaceuticals.

RTNM 363. Nuclear Cardiology. 3 Units.
Covers the principles and clinical application of cardiac imaging. Topics include: patient preparation, radiopharmaceutical, localization of radiopharmaceutical, standard dose range, pharmaceutical stress protocol, exercise stress protocol, clinical applications of myocardial perfusion imaging, and image interpretation.

RTNM 364. Nuclear Medicine Statistics. 3 Units.
Covers the percent error or percent difference, counting rate determination, effects of background on counts, counting rates, standard deviation, and propagation of error.

RTNM 381. Topics in Nuclear Medicine I. 3 Units.
Reviews physics, instrumentation, procedures, imaging, and radiopharmaceutical theories in preparation for national registries.

RTNM 382. Topics in Nuclear Medicine II. 1-3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Credit for full-time, postcertification clinical practice in a nuclear medicine service. Periodic evaluations by the clinical supervisor.

RTNM 431. Clinical Affiliation I. 2 Units.
This course is the first in a series of four consecutive courses covering the fall thru summer quarters. The series is RTNM 431-436. The purpose of RTNM 431 and successive quarters is to provide the student with actual clinical experience as a student technologist. The student will work alongside of staff technologists and physicians performing all of the functions expected of a nuclear medicine technologist. The student will be given the opportunity to perform all types of nuclear medicine procedures involved in patient care. Student will be assigned to a clinical for two(2) days per week and eight (8) hours per day. Specific days vary every quarter.

RTNM 432. Clinical Affiliation II. 3 Units.
Student works eight hours per day, four days per week--specific days vary with the quarter.

RTNM 433. Clinical Affiliation III. 3 Units.
Student works eight hours per day, four days per week--specific days varying with the quarter.

RTNM 434. Clinical Affiliation IV. 3 Units.
Student works eight hours per day, four days per week--specific days varying with the quarter.

RTNM 435. Clinical Affiliation V. 3 Units.
Student works eight hours per day, four days per week--specific days varying with the quarter.

RTNM 436. Clinical Affiliation VI. 3 Units.
Student works eight hours per day, four days per week--specific days varying with the quarter.

RTNM 971. Nuclear Medicine Affiliation I. 11 Units.
Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

RTNM 972. Nuclear Medicine Affiliation II. 11 Units.
Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

RTNM 973. Nuclear Medicine Affiliation III. 11 Units.
Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

RTNM 974. Nuclear Medicine Affiliation IV. 11 Units.
Clinical experience of twelve months (352 clock hours per term) covering a wide variety of technical procedures.

Radiation Technology/Radiation Sciences (RTRS)

Courses

RTRS 584. Management of Imaging Informatics. 3 Units.
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 Units.
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 Unit.
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 Units.
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 Units.
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 Units.
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/Radiation Therapy (RTTH)

Courses

RTTH 332. Radiation Biology. 1 Unit.
The effects of radiation on living systems.

RTTH 342. Patient-Care Practices in Radiation Therapy. 2 Units.
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 Units.
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 Unit.
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 Unit.
Comprehensively reviews radiation physics, protection, and dosimetry. Applies radioactive materials. Radiobiology. Technical aspects of radiation oncology.

RTTH 353. Psycho-Oncology. 2 Units.
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 Units.
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 Units.
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.

RTTH 357. Applied Dosimetry. 2 Units.
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 Units.
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.

RTTH 364. Radiation Oncology I. 2 Units.
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 Units.
A three-term course covering pathology, etiology, epidemiology, histopathology, metastasis staging, and treatment of major types of malignant neoplasms.

RTTH 366. Radiation Oncology III. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Credit for full-time, postcertification clinical practice in a radiation therapy service. Periodic evaluations by the clinical supervisor.

RTTH 971. Radiation Therapy Affiliation I. 9 Units.
The first of a three-course sequence totaling twelve months of clinical experience covering a wide variety of technical procedures. Clock hours: 290.

RTTH 972. Radiation Therapy Affiliation II. 10 Units.
Continues RTTH 971. Clock hours: 340.

RTTH 973. Radiation Therapy Affiliation III. 10 Units.
Continues RTTH 971, 972. Clock hours: 330.

RTTH 974. Radiation Therapy Affiliation IV. 12 Units.
Continues RTTH 971-973. Clock hours: 400.

RTTH 975. Radiation Therapy Affiliation V. 11 Units.
Continues RTTH 971-974. Clock hours: 390.

Radiation Technology/Radiologist Assistant (RTRA)

Courses

RTRA 371. Clinical Internship. 2 Units.
A twelve-week, one day/week rotation totaling ninety-six 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 Units.
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 Units.
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 474. Clinical Internship. 7 Units.
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 510. Cross-Sectional Anatomy I. 1 Unit.
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 511. Cross-sectional Anatomy II. 1 Unit.
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 518. Radiobiology and Health Physics. 2 Units.
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 519. Medical-Legal Issues in Radiology. 1 Unit.
Introduction to the legal system as it pertains to radiation sciences. Concepts such as malpractice, litigation, informed consent, assault, and battery.

RTRA 521. Radiology Procedures and Image Evaluation I. 3 Units.
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 Units.
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 Units.
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 Units.
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 525. Fluoroscopy and Radiation Protection. 1 Unit.
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 526. Radiology Reporting. 1 Unit.
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 531. Pharmacology for RAs I. 2 Units.
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 532. Pharmacology for RAs II. 2 Units.
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 534. Pathophysiology. 2 Units.
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 541. Patient Assessment I. 2 Units.
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 542. Patient Assessment II. 2 Units.
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 543. Clinical Management and Education. 2 Units.
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 546. Topics for the Radiologist Assistant. 2 Units.
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 588. Comprehensive Review I. 1 Unit.
Review of the major content areas covered in the radiologist assistant program. Student evaluation and performance analysis.

RTRA 589. Comprehensive Review II. 1 Unit.
Reviews major content areas covered in the radiologist assistant program. Includes student evaluation and performance analysis.

RTRA 591. Radiologist Assistant Research Project I. 1 Unit.
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 Units.
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 Units.
Student completes a faculty-facilitated research project related to radiation sciences. Radiation sciences faculty must approve all projects.

RTRA 614. Professional Portfolio. 1 Unit.
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.

RTRA 771. Clinical Internship I. 2 Units.
A twelve-week, one day/week rotation for a total of ninety-six 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 772. Clinical Internship II. 5 Units.
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 773. Clinical Internship III. 6 Units.
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 774. Clinical Internship IV. 6 Units.
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 775. Clinical Internship V. 6 Units.
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 776. Clinical Internship VI. 6 Units.
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 777. Clinical Internship VII. 6 Units.
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.

Radiation Technology (RTCH)

Courses

RTCH 283. Basic Imaging. 2 Units.
Covers basic imaging positioning used in radiology. Topics include: radiology positioning techniques and introduction to technical characteristics of common nuclear medicine studies.

RTCH 283L. Radiation Clinical Basics Laboratory. 1 Unit.
Hands-on laboratory experience that includes basic positioning, physics, and principles in radiology.

RTCH 285. The Principles and Physics of Rad. 4 Units.
Covers equipment used to generate X-rays for production of radiographic images. Includes the physics of X-ray production, and interactions of X-rays with patient tissues to produce radiographic images. Stresses proper radiation safety for the patient and hospital personnel.

RTCH 318. Imaging Modalities. 2 Units.
Covers the correlation and relevance of nuclear medicine to the other imaging modalities. Topics include: cardiovascular, respiratory, gastrointestinal, genitourinary, and skeletal systems.

RTCH 325. Applications for Managers. 2 Units.
Introduces prospective radiology managers and administrators to the basic common applications found in health care.

RTCH 385. Radiologic Trends in Health Care. 2 Units.
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 387. Writing for Health-Care Professionals. 3 Units.
Expands academic writing experience by building upon student's prior study of health-care administration. Develops a variety of skills, including research and resume writing. Introduces elements of professional communications, such as memo writing, e-mail etiquette, and other types of formal writing for use in a professional work environment. Emphasizes student's public speaking skills through preparation of an oral presentation.

RTCH 413. Management Practicum I. 3 Units.
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. 3 Units.
Observation of and discussion with selected administrative personnel in a radiology service. Emphasizes practical application of management theory. Projects assigned.

RTCH 415. Radiation Emergency Procedures. 3 Units.
Covers radiation emergency procedures and guidelines. Topics include: minor spills, major spills, airborne contamination, ingestion and inhalation contamination, firefighting techniques, X-ray injuries, and lessons learned from radiation disasters.

RTCH 418. Health Information Management and Radiology Coding for Radiology Managers. 3 Units.
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 Units.
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 Units.
Techniques of organization, planning, and management, with specific applications to a hospital radiology service.

RTCH 471. Applied Research Methods I. 2 Units.
Applies research methods to radiation sciences. Directed experience with a research project. Laboratory.

RTCH 472. Applied Research Methods II. 2 Units.
Applies research methods to radiation sciences. Directed experience with a research project. Continues RTCH 471.

RTCH 485. Digital Management in Radiology. 3 Units.
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. 1-12 Units.
Advanced clinical experience in selected areas of professional practice.

RTCH 499. Radiation Technology Independent Study. 0.5-2 Units.
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 Units.
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/Special Imaging (RTSI)

Courses

RTSI 307. Introduction to Computed Tomography Completion Course. 2 Units.
Provides an overview of patient care in CT imaging, general aspects of patient care, pharamacology 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.

RTSI 344. Interventional Pharmacology. 4 Units.
Studies the various pharmacological agents currently used in diagnosis and treatment during interventional studies of the cardiovascular system. Emphasizes laboratory values relevant to interventional studies.

RTSI 351. Angio/Interventional Procedures I. 3 Units.
Analyzes the principles of vascular radiology, including proper patient care, the fundamentals of properly setting up a sterile table, and evaluation of the equipment most commonly used in the interventional suite. Examines the functions of a pressure injector and explores the procedures performed in vascular intervention.

RTSI 356. Vascular Anatomy and Physiology. 3 Units.
Explores normal and pathological vascular anatomy and physiology. Emphasizes intracranial, extracranial, spinal, aorta, pulmonary, abdominal, pelvic, and extremity vascular structures; as well as abnormalities of the vascular system.

RTSI 358. CVI Review Course. 2 Units.
A comprehensive review course for the ARRT examinations in cardiac interventional radiography (CI) and vascular interventional radiography (VI).

RTSI 361. MRI Physics I. 2 Units.
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 Units.
Basic principles, physics, imaging parameters, biological effects, management, and patient protocol of magnetic resonance imaging (MRI).

RTSI 364. CT Patient Care and Procedures. 2 Units.
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 Units.
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 Units.
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 Units.
Basic principles, physics, imaging parameters, radiological effects, management, and patient protocol of computed tomography (CT).

RTSI 381. Topics in Special Imaging I. 1-3 Units.
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 Units.
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 Units.
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 Unit.
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 Units.
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 (forty hours/week), clinical-learning experience.

RTSI 401. Advanced Clinical Procedures I. 3 Units.
Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

RTSI 402. Advanced Clinical Procedures II. 3 Units.
Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

RTSI 403. Advanced Clinical Procedures III. 3 Units.
Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

RTSI 404. Advanced Clinical Procedures IV. 3 Units.
Credit for full-time, postcertification clinical practice in a radiology service. Periodic evaluations by the clinical supervisor.

RTSI 971. Special Imaging (CT/MRI) Affiliation. 10 Units.
A four days/week clinical rotation totaling 320 hours of clinical experience in CT (computerized tomography) and/or MRI (magnetic resonance imaging) covering a wide variety of technical procedures.

RTSI 972. Special Imaging (CT/MRI) Affiliation II. 10 Units.
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 Units.
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 Units.
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 (forty hours/week), clinical-learning experience.

RTSI 993. CVI Internship III. 12 Units.
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 (forty hours/week), clinical-learning experience.

Radiologic Technology Advanced Placement (RTAP)

Courses

RTAP 221. Patient Care and Education. 1 Unit.
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 Units.
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 Unit.
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 Unit.
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 Units.
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 Units.
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 Units.
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 973. Clinical Affiliation. 2 Units.
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.

Radiology (RADS)

Courses

RADS 891. Radiology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of radiology, including but not limited to angio/interventional radiology, pediatric radiology, body CT, neuroradiology, and research.

Rahabilitation Technician Training Program (RTTP)

Courses

RTTP 101. Orthopaedic Interventions I: Physical Therapy. 4 Units.
Part one of a two-part course that introduces orthopaedic conditions, patient assessment, and treatment--including passive range of motion, therapeutic exercise, stretching, and the use of impairment reduction to restore function. Lecture and laboratory.

RTTP 102. Orthopaedic Interventions II: Occupational Therapy. 2 Units.
Part two of a two-part course that expands on diagnoses introduced in RTTP 101. Includes interventions for the orthopaedic population that promote engagement in daily activities either through promotion of skill or through adaptation of activities or the environment.

RTTP 104. Introduction to Rehabilitation Services. 1.5 Unit.
Introduces students to the basic concepts behind rehabilitation services, specifically what is provided by occupational and physical therapists. Increases understanding of the scope of practice of each profession, as well as key medical professionals involved in health care. Introduces students to different approaches to rehabilitation and promotion of health and wellness--including restoration, adaptation, maintaining, creating, and preventing.

RTTP 108. Introduction to Orthotics and Prosthetics Services for Clinicians. 2.5 Units.
Familiarizes students with the profession of orthotics and prosthetics. Emphasizes professional practice and the role of the technician. Includes lecture, laboratory, practical examinations, and projects designed to provide a comprehensive overview of the profession.

RTTP 109. Psychosocial Aspects in Health Care. 3 Units.
Introduces common mental health disorders, as well as the role of the rehab professional; intervention approaches that can be utilized when addressing the mental health needs of clients; and the therapeutic use of self, including personal experiences and judgments, as part of the therapeutic process.

RTTP 110. Current Issues in Health Care: Haiti. 3 Units.
Examines the current political, social, and environmental issues influencing health care in Haiti. Students critically evaluate the impact and interplay of these issues in order to better understand their effects on personal, community, group, and global levels. Introduces education and advocacy as they relate to national physical, biological, and psychosocial welfare.

RTTP 120. Therapeutic Modalities. 2 Units.
Basic therapy modalities, including: heat and cold applications, hydrotherapy, massage, control of edema, stump wrapping, and standard precautions necessary for these modalities. Lecture and laboratory.

RTTP 121. Neurological Interventions I : Physical Therapy. 1.5 Unit.
Part one of a two-part course that introduces neurological conditions, including pathology and management of medical problems of cerebral vascular accident (CVA), Parkinson's disease (PD), traumatic brain injuries (TBI), balance impairments, spinal cord/nerve injuries, and amputee management. Incorporates manual techniques to facilitate neurodevelopmental treatment (NDT) and enhance proprioceptive neuromuscular facilitation (PNF). Provides instruction in appropriate use of ambulation aids and assistive devices for optimum patient management and care.

RTTP 122. Neurological Interventions II: Occupational Therapy. 1.5 Unit.
Part two of a two-part course that expands on the common neurological disorders introduced in RTTP 121. Includes occupational therapy interventions for the neurological population that help restore or promote the development of skills needed for independence, or that adapt methods of activity to allow for return to a higher level of independence in the community. .

RTTP 124. Acute Care and Early Rehabilitation. 1.5 Unit.
Laboratory-dominant format that focuses on principles and application of acute and subacute rehabilitation, with emphasis on a team approach. Includes patient safety and precautions, patient hygiene, and management of bedside hospital equipment.

RTTP 125. Cardiopulmonary Care. 2 Units.
Basic pathology, etiology, and clinical manifestations of cardiopulmonary disorders commonly encountered in the rehabilitation/physical therapy setting. Introduces basic equipment, lines, and tubes used in the acute care setting by rehabilitation technicians. Focuses on identifying patients who would benefit from early rehabilitation/mobilization, and providing the support needed to assist the physical therapist. Includes technician management and support for cardiopulmonary conditions. General principles of formal cardiac and pulmonary rehabilitation programs. Identifies basic ECG rhythms and ventilator settings. Lecture and laboratory.

RTTP 126. Mobility, Transfers, and Accessibility. 1 Unit.
Introduces concepts and skills associated with transfer training, crutch training, wheel chair transfer, wheel chair fitting, and bed positioning. Emphasizes basic physical examination protocols, including goniometric measurement, blood pressure measurement, reflex testing, and basic strength testing. Lecture and laboratory.

RTTP 127. Wound Care. 1.5 Unit.
Introductory study of normal skin structure and function, and of integumentary pathologies. Explores problem conditions associated with diabetes, burns, and wounds. Lecture and laboratory. Laboratory includes wound identification, measurement, dressing, treatments, and simple debridement techniques.

RTTP 128. Community-Based Rehabilitation. 1.5 Unit.
Students explore and integrate the relationships among disability, development, leadership, management, and policy as they pertain to community-based rehabilitation (CBR). Provides rehabilitation technicians with a knowledge base that allows them to identify and prioritize the needs for CBR, develop a CBR strategic plan, and implement CBR principles into their professional practice. Prepares students to be part of an interprofessional team providing CBR, and provides them with the skills to lead and facilitate CBR programs focused on rehabilitation and restoration of persons with disabilities as active healthy participants of their community.

RTTP 129. Service Learning. 1 Unit.
Community-engaged learning experience that involves reflection, civic engagement, and collaboration with community partners to meet client needs.

RTTP 130. Hand and Upper Extremity Rehabilitation. 1 Unit.
Introduces hand, elbow, and shoulder rehabilitation. Presents approaches to common injuries and diseases, as well as common orthotics and prosthetics used. Lecture and laboratory.

RTTP 131. Pediatric Interventions I : Physical Therapy. 1.5 Unit.
Part one of a two-part course that provides an overview of childhood diseases and developmental processes, as well as how to identify children at risk for disease or abuse. Includes physical therapy interventions to reduce common impairments in the pediatric population.

RTTP 132. Pediatric Interventions II : Occupational Therapy. 1.5 Unit.
Part two of a two-part course that expands on childhood diseases and developmental processes. Includes occupational therapy interventions for the pediatric population. Introduces students to intervention techniques focused on facilitation of proper development, adaptation to allow for engagement in childhood activities, and the role of the parents and community in promoting development and independence of the child in society.

RTTP 134. Intervention Techniques for Independence in Self-Care. 1.5 Unit.
Emphasizes the physical and mental health implications of independence in completing self-care tasks. Focuses on student proficiency in adaptive dressing, grooming, and bathing strategies; as well as techniques for safe transfers, joint protection, and energy conservation techniques that allow clients to become and stay independent in daily activities.

RTTP 135. Adaptation and Implementation of Devices. 1.5 Unit.
Introduces adaptive equipment and devices that allow for greater independence and mobility in persons with disabilities. Prepares student to adjust prosthetic limbs and adaptive devices in response to growth and changes in the patient's limb(s), and to recognize physical/medical changes that may require re-assessment by the medical team.

RTTP 141. Field Work I. 4 Units.
Three-week, supervised clinical practical emphasizing patient care; as well as the development of successful working relationships with associated medical providers (inpatient, outpatient, pediatric, or community-based rehabilitation setting). Per week: 40 clock hours (or 120 clock hours total).

RTTP 142. Field Work II. 4 Units.
Three-week, supervised clinical practical emphasizing patient care; as well as the development of successful working relationships with associated medical providers (inpatient, outpatient, pediatric, or community-based rehabilitation setting). Per week: 40 clock hours (or 120 clock hours total).

RTTP 143. Field Work III. 4 Units.
Three-week, supervised clinical practical emphasizing patient care; as well as the development of successful working relationships with associated medical providers (inpatient, outpatient, pediatric, or community-based rehabilitation setting). Per week: 40 clock hours (or 120 clock hours total).

RTTP 144. Field Work IV. 4 Units.
Three-week, supervised clinical practical emphasizing patient care; as well as the development of successful working relationships with associated medical providers (inpatient, outpatient, pediatric, or community-based rehabilitation setting). Per week: 40 clock hours (or 120 total clock hours total).

RTTP 151. Rehabilitation Technician Affiliation I. 12 Units.
Eleven-week clinical assignment to be completed in a variety of affiliated clinical settings: acute care, neurological rehabilitation, orthopaedics, geriatrics, pediatrics, and community-based programs. Emphasizes patient and staff working relationships, assessment, planning, treatment, and problem solving. Forty clock hours per week of supervised clinical experience, special assignments, in-services, and demonstrations following the didactic portion of the curriculum.

RTTP 152. Rehabilitation Technician Affiliation II. 12 Units.
Eleven-week clinical assignment to be completed in a variety of affiliated clinical settings: acute care, neurological rehabilitation, orthopaedics, geriatrics, pediatrics, and community-based programs. Emphasizes patient and staff working relationships, assessment, planning, treatment, and problem solving. Forty clock hours per week of supervised clinical experience, special assignments, in-services, and demonstrations following the didactic portion of the curriculum.

RTTP 160. Documentation and Medical Terminology. 4 Units.
Medical terminology, abbreviations, chart reading, note writing, and interprofessional communication.

RTTP 161. Essentials of Human Anatomy and Physiology. 10 Units.
Eleven-week course that studies the integrated structure and function of the human body. Includes concepts of anatomical orientation, homeostasis, chemistry, and cell and tissue structure and function. Topics selected serve as a foundation for presentation of the following body systems: integumental, skeletal, muscular, nervous, endocrine control, cardiovascular, lymphatic, respiratory, digestive, and genitourinary.

RTTP 162. Infectious Disease and the Health-Care Provider. 4 Units.
Current issues related to infectious disease, with special emphasis on principles of epidemiology and etiology of HIV/AIDS. Discusses disease pathology and modes of transmission compared with hepatitis, tuberculosis, and influenza. Develops ethical responses 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.

RTTP 166. First Aid for the Rehabilitation Technician. 1 Unit.
Includes basic first aid training and adult and pediatric cardiopulmonary resuscitation (CPR) to help the learner develop basic first aid and resuscitation knowledge, skills, and the confidence to respond. Prepares the learner to apply these skills in both the clinical and community settings. Provides information that will help the student understand what bloodborne pathogens are and how risks of exposure can be reduced for themselves and others.

RTTP 199. Clinical Competency Examination. 0 Units.
A four-hour, hands-on, clinical competency examination that tests the student's basic clinical skills and ability to safely apply the techniques learned in the program. Examination score of at least 80 percent required for successful completion of the competency standards.

RTTP 901. Rehabilitation Technician Affiliation I. 12 Units.
Eleven-week clinical assignment to be completed in a variety of affiliated clinical settings: acute care, neurological rehabilitation, orthopaedics, geriatrics, pediatrics, and community-based programs. Emphasizes patient and staff working relationships, assessment, planning, treatment, and problem solving. Forty clock hours per week of supervised clinical experience, special assignments, in-services, and demonstrations following the didactic portion of the curriculum.

RTTP 902. Rehabilitation Technician Affiliation II. 12 Units.
Eleven-week clinical assignment to be completed in a variety of affiliated clinical settings: acute care, neurological rehabilitation, orthopaedics, geriatrics, pediatrics, and community-based programs. Emphasizes patient and staff working relationships, assessment, planning, treatment, and problem solving. Forty clock hours per week of supervised clinical experience, special assignments, in-services, and demonstrations following the didactic portion of the curriculum.

RTTP 903. Rehabilitation Technician Affiliation III. 12 Units.
Eleven-week clinical assignment to be completed in a variety of affiliated clinical settings: acute care, neurological rehabilitation, orthopaedics, geriatrics, pediatrics, and community-based programs. Emphasizes patient and staff working relationships, assessment, planning, treatment, and problem solving. Forty clock hours per week of supervised clinical experience, special assignments, in-services, and demonstrations following the didactic portion of the curriculum.

Rehabilitation Science (RESC)

Courses

RESC 515. Political and Professional Advocacy in Rehabilitation. 3 Units.
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 Units.
Political and professional forums related to grassroots advocacy.

RESC 517. Profession Advocacy in Allied Health Professions. 4 Units.
Examines legislative and regulatory bodies that define and regulate health-care practice in California. Identifies techniques to advance the profession's advocacy. Field training experience includes district and state capitol meetings with legislators and policymakers.

RESC 519. Rehabilitation Theories and Applications in Health Care. 3 Units.
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 Units.
Must be repeated to complete the required total of 24 units.

Religion/Ethical Studies (RELE)

Courses

RELE 155. Introduction to Christian Bioethics. 3 Units.
Introduces students to ethical issues in health care from the perspective of Christian tradition.

RELE 257. Health Care Ethics. 2,2 Units.
Introduces practical ethics for health-care professionals. Draws on the Bible and other religious and philosophical writings. Additional project required for third unit.

RELE 400. Current Issues in Religion and Society. 1-4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 thirty hours required for each unit of credit.

RELE 500. Current Issues in Religion and Society. 3-4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Explores the ethical issues relevant to the diverse professions involved in advancing the public's health. Topics of inquiry include: community-based research, professional practices and responsibilities, cultural and socioeconomic issues, distributive justice, vulnerable populations, local and international mission, development, and research projects. Additional project required for fourth unit.

RELE 535. Ethical Issues in Health-Care Management. 3,4 Units.
Considers business ethics within health-care institutions. Seeks to find ways that business professionals and health-care professionals can work well together for the benefit of the patients. Topics of inquiry include: corporate culture and self-interest, health-care culture and altruism, unique setting of American health care as industry, and how Christian virtues can encourage moral leadership. Additional project required for fourth unit.

RELE 536. Ethics, Leadership, and Advanced Nursing. 3 Units.
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 542. Bioethics Integration I. 1 Unit.
Aids dual degree bioethics students to 1) conceptualize required paper that demonstrates their integrated perspective on a specific professional course and bioethics, and 2) articulate integrative ideas in a coherent manner.

RELE 543. Bioethics Integration II. 1 Unit.
Aids dual degree bioethics students to 1) conceptualize required paper that demonstrates their integrated perspective on a specific professional course and bioethics, and 2) articulate integrative ideas in a coherent manner.

RELE 544. Bioethics Integration III. 1 Unit.
Aids dual degree bioethics students to 1) conceptualize required paper that demonstrates integrated perspective on a specific professional course and bioethics, and 2) articulate integrative ideas in a coherent manner.

RELE 545. Bioethics Case Conference. 1 Unit.
Engages students in discussion of real-life cases in bioethics.

RELE 547. Christian Business Ethics. 3,4 Units.
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 Units.
Relationships between Christian beliefs and social theory and practice. Additional project required for fourth unit.

RELE 554. Clinical Ethics Practicum I. 4 Units.
Theories and applications of ethics in the clinical setting.

RELE 555. Clinical Ethics Practicum II. 4 Units.
Theories and applications of ethics in the clinical setting.

RELE 564. Ethics and Health Disparities. 3,4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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.

RELE 624. Seminar in Christian Ethics. 3,4 Units.
Advanced study of selected topics in Christian ethics. Additional project required for fourth unit.

RELE 699. Directed Study. 1-6 Units.
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 forty hours required for each unit of credit. Additional projects required for second through sixth units.

RELE 704. Medicine and Ethics. 2 Units.
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 Units.
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 Units.
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 Units.
Advanced study of issues and cases in contemporary medical ethics.

RELE 734. Christian Ethics for Dentists. 2 Units.
Ethical issues in contemporary dentistry. Christian resources for ethical decision making.

Religion/General Studies (RELG)

Courses

RELG 265. Special Topics in Religion. 1-4 Units.
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 in Religious Studies. 3,4 Units.
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 505. Qualitative Research in Religious Studies. 3,4 Units.
Considers the various qualitative methods used in examining the relationships between religion and the health of individuals and populations. Provides an overview of methods while focusing primarily on grounded theory methods. Students required to conduct their own research and/or be involved in a research project as a component of this course. Additional project required for fourth unit.

RELG 596. Dissertation Proposal. 1 Unit.
Development of the dissertation proposal. Research advisor works with students in developing the proposal in accord with the School of Religion and Faculty of Graduate Studies guidelines. Students must successfully defend the proposal relating to religion and health.

RELG 674. Reading Tutorial. 3,4 Units.
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 Units.
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.

RELG 697. Independent Research. 1-8 Units.
Individual arrangements for students to do research under the guidance of faculty member(s). Written report required. Minimum of forty hours required for each unit of credit.

RELG 698. Thesis. 1-4 Units.
Student prepares report of individual guided research in religion-related topic under direct faculty supervision. Minimum of forty hours required for each unit of credit. Limited to graduate students whose thesis projects have been approved by their research committee.

RELG 699. Dissertation Research. 1-6 Units.
Independent research contributing to the field of religion and health. Repeat registrations as needed until unit requirement has been met and/or dissertation has been defended, whichever is later.

RELG 795. Clinical Internship. 12 Units.
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.

RELG 796. Religion and Health Practicum. 8 Units.
Theories and applications of religion and health in the clinical and/or research setting.

Religion/Relational Studies (RELR)

Courses

RELR 404. Christian Service. 1,2 Unit.
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 Units.
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 Units.
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 Units.
Examines concepts and practices in popular culture from a Christian perspective. Additional project required for third unit.

RELR 427. Crisis Counseling. 2,3 Units.
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 Units.
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 447. Cross-cultural Ministry. 2,3 Units.
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.

RELR 448. Church and Community Leadership. 2,3 Units.
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 Units.
The integration of psychosocial and spiritual care in the clinical setting. Additional project required for third unit.

RELR 499. Directed Study. 1-3 Units.
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 500. Religion and Global Health. 3,4 Units.
Focuses on an international perspective of the interconnections between religion and health, with special attention to how faith (theological ideas) of a community play a role in how people seek treatment and relate to health and disease. Additional project required for fourth unit.

RELR 508. Religion, Health-Care Policy, and Advocacy. 3,4 Units.
Explores how religious and ethical visions shape definitions of health, concepts of just health-care policies, and attitudes toward the urgency of taking action to improve the health of communities. Encourages students to be participant-observers in programs of effective health-care advocacy. Additional project required for fourth unit.

RELR 520. Clinical Training in Spiritual Care. 2 Units.
Combines theoretical and clinical aspects of spiritual care in the exploration of a theological understanding of health and illness. Students examine cases and learn the theoretical foundations and practical skills needed to provide spiritual care. Designed for students pursuing a career in chaplaincy, mental health, and/or any discipline that benefits from clinical experience related to healthcare as understood through a theological lens. May be repeated once for additional credit.

RELR 524. Clinical Pastoral Education. 6-12 Units.
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 Units.
Christian principles of leadership in the community and in the practice of health care. Additional project required for fourth unit.

RELR 526. Pastoral and Professional Formation. 3,4 Units.
Introduces students to the professional requirements of working as a chaplain in a healthcare setting. Teaches students to function pastorally within boundaries with pastoral authority. Connects theology of spiritual care to pastoral practice. Teaches students to integrate pastoral care into the institution while taking into account the culture, systems, and relationships that need to be navigated. Teaches appropriate ethical decision making in relationship to other departments, and focuses on development of pastoral care as it relates to group dynamics and organizational behavior. Provides students opportunity to evaluate their strengths and weaknesses in terms of pastoral and professional conduct and formation. Additional project required for fourth unit.

RELR 527. Crisis Care and Counseling. 3,4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Explores issues in the practice of pastoral counseling, such as pastoral assessment, theological reflections, and spirituality.

RELR 538. Methods in Pastoral Counseling. 2 Units.
Explores pastoral counseling methods; the uniqueness, and contributions to the field of religion and mental health.

RELR 540. Wholeness Portfolio. 3,4 Units.
Aids student in formulation of a portfolio that incorporates a variety of activites 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. Additional project required for fourth unit.

RELR 541. History of Seventh-day Adventist Chaplaincy and Healthcare Policy Making. 4 Units.
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 Units.
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 Units.
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 Units.
Studies the biblical, theological, and historical foundations for the practice of ministry. Additional project required for fourth unit.

RELR 567. Pastoral Counseling. 3,4 Units.
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 Units.
Studies the biblical, theological, cultural, religious, relational, and psychological aspects of dying and death. Additional project required for fourth unit.

RELR 574. Liturgy, Homiletics, and Healing. 3,4 Units.
Examines the biblical and theological foundations for liturgy and preaching, with special attention given to the healing context. Considers liturgical ministry in diverse settings and with diverse faith perspectives. Focuses on the process of study, construction, and delivery of sermons. Additional project required for fourth unit.

RELR 575. Art of Integrative Care. 3,4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 590. Quantitative Research in Religious Studies. 3,4 Units.
Introduces students to quantitative methods and data used to study the topic of religion and health, and discusses how quantitative methods are used to answer research questions related to the discipline. Students discuss published quantitative studies and explore how to use software programs (Excel, SPSS) to analyze quantitative data. Students analyze quantitative data as a component of the course. Additional project required for fourth unit.

RELR 591. Qualitative Research in Religious Studies. 3,4 Units.
Provides an overview of a variety of qualitative methods that can be utilized to examine relationships between religion and the health of individuals and populations. Focuses primarily on grounded theory methods. Students required to conduct their own research and/or to be involved in a research project. Additional project required for fourth unit.

RELR 592. Doctoral Portfolio in Religion and Health. 2 Units.
Lays the groundwork for the doctoral program by exploring the connections between faith and health and the genres specific to each. Acquaints students with the principal theoretical and practical skills necessary for discussing the two fields of religion and health. To be completed in the first quarter of doctoral work.

RELR 595. Independent Study in Chaplaincy. 1 Unit.
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 692. Seminar in Religion and Health Care Leadership: Current Trends. 3,4 Units.
Explores current trends in faith and health-care leadership, such as working with faith communities, developing a values-based health-care system, and understanding current research and hiring mission; as well as other topics. Course taught in seminar fashion, exposing students to various health-care leaders and allowing students to focus on their area(s) of interest. Additional project required for fourth unit.

RELR 694. Seminar in Clinical Ministry. 3,4 Units.
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 Units.
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 forty hours required for each unit of credit.

RELR 701. Orientation to Religion and Medicine. 2 Units.
Examines the relationship between Scripture and the practice of medicine.

RELR 709. Christian Perspectives on Death and Dying. 2 Units.
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 Units.
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 Units.
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 Units.
Knowledge, values, attitudes, and skills contributing to the physician's goal of personal wholeness.

RELR 749. Personal and Family Wholeness. 2 Units.
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 Units.
The integration of psychosocial and spiritual care in the clinical setting.

Religion/Theological Studies (RELT)

Courses

RELT 404. New Testament Writings. 2,3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Analyzes prominent topics in religion discussed in contemporary journals. Additional project required for third unit.

RELT 426. Jesus. 2,3 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 thirty hours required for each unit of credit.

RELT 500. Biblical Hermeneutics. 3 Units.
Explores the principles of interpreting the Bible in relationship to real-life situations.

RELT 501. Religion and Society. 3,4 Units.
The impact of religion on society. Definitions, theories, and typologies of "religion." The role of religion in biblical times. Christianity's relationship with other religions throughout the centuries. Controversial cases. Additional project required for fourth unit.

RELT 502. Religion and Society. 3,4 Units.
The impact of society on religion. Definitions, theories, and typologies of "society." Social constructions of meaning. The significance of societies in shaping Christianity. Premodern, modern, and postmodern worldviews. Globalization and religion.

RELT 503. Religion and Society. 3,4 Units.
The interactions of religion and society. Theories and typologies of the interactions of religion and society. Personal devotion and social change. Influential leaders and transforming movements. Controversial cases. Additional project required for fourth unit.

RELT 504. Daniel and the Prophetic Tradition. 3 Units.
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 Units.
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. 3,4 Units.
Studies the fundamental tenets of Seventh-day Adventist faith and the lifestyle that such faith engenders. Additional project required for fourth unit.

RELT 507. The Saga of Adventists and Healthcare: Cornflakes, Baby Fae, and the Healing of the Nations. 3 Units.
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 508. Introduction to Contemporary Christian Theology. 3,4 Units.
Acquaints students with the principal issues, figures, and movements that have helped shape the development of Christian thought during the past century. Includes the relationships between history and biblical interpretation, between theology and philosophy, and between religion and science. Major figures include Karl Barth, Paul Tillich, Hans Kung, Wolfhart Pannenberg, and Jurgen Moltmann. Considers the growing prominence of Evangelical, Eastern orthodox, and postmodern theologies; as well as the emergence of various "contextual" theologies, such as Black theology, Latin American liberation theology, and feminist theology. Illuminates the characteristic ways in which the central elements of Christian faith--Christ's life, death, and resurrection--provide lasting continuity and continually stimulate reflection within the Christian world. Additional project required for fourth unit.

RELT 509. Theological and Biblical Perspectives in Religion and Health. 3,4 Units.
Explores issues related to health, illness, and suffering from theological and biblical perspectives. Additional project required for fourth unit.

RELT 520. Church History. 3,4 Units.
Traces Christianity's inception with the birth, ministry, death, and resurrection of Jesus Christ; through the first critical 300 years of Christianity; evolving into the pre-Reformation and Reformation; and culminating in the Christian Church of the twenty-first century. Additional project required for fourth unit.

RELT 524. Religion and Society. 3,4 Units.
The impact of society on religion. Definitions, theories, and typologies of ?society.? Social constructions of meaning. The significance of societies in shaping Christianity. Premodern, modern, and postmodern worldviews. Globalization and religion. No required prerequisites. Additional project required for fourth unit.

RELT 526. Creation and Cosmology. 3,4 Units.
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 Units.
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 Units.
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.

RELT 539. Christian Understanding of God and Humanity. 3,4 Units.
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 Units.
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 Units.
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 Units.
Clarifies the unique role Seventh-day Adventist theology plays in fostering spirituality.

RELT 557. Theology of Human Suffering. 3,4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Fundamental tenets of Seventh-day Adventist faith, and the lifestyle that such faith engenders.

RELT 707. Medicine, Humanity, and God. 2 Units.
Role of the practitioner of medicine as a co-worker with God in the healing of humankind.

RELT 713. Christian Spirituality. 2 Units.
Study of Scripture and Christian thought on how a person's spiritual life is formed and matured.

RELT 714. Comparative Religious Experiences. 2 Units.
Examines the religious experiences held by adherents of various Christian confessions.

RELT 716. God and Human Suffering. 2 Units.
Suffering and evil in relation to the creative and redemptive purposes of God for this world.

RELT 717. Christian Beliefs and Life. 2 Units.
Introduces basic Christian beliefs and life.

RELT 718. Adventist Heritage and Health. 2 Units.
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 Units.
Studies Jesus as healer and teacher, prophet and reformer, Son of God and Savior.

RELT 727. Love and Sex in the Bible. 2 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
A study of the legacy of "the second most influential" person in human history.

RELT 775. Spirituality and the Christian Health Professional. 2 Units.
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.

Respiratory Therapy (RSTH)

Courses

RSTH 301. Advanced Respiratory Therapy Science I. 3 Units.
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 Units.
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.).

RSTH 303. Advanced Respiratory Therapy Science III. 2 Units.
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.).

RSTH 304. Cardiopulmonary Anatomy and Physiology. 4 Units.
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 or respiration, cardiac cell-membrane action potentials, and excitation-contraction coupling.

RSTH 311. Advanced Neonatal Respiratory Care. 3 Units.
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 Units.
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 Units.
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 Units.
Surveys pharamacologic 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 Units.
Surveys pharamacologic 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 Units.
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 Units.
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 Units.
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.

RSTH 343. Respiratory Therapy Science III. 4 Units.
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.

RSTH 354. Case Studies in Adult Respiratory Care. 2 Units.
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.

RSTH 366. Diagnostic Techniques. 3 Units.
Continues the clinical use of diagnostic tests and procedures. Emphasizes evaluation of chest radiographs, electrocardiography, and monitoring hemodynamics. Lecture and laboratory.

RSTH 381. Cardiopulmonary Diseases I. 2 Units.
Comprehensively studies cardiopulmonary diseases and their adverse effects. Course content includes disease etiology, pathology, pathophysiology, clinical features, prognosis, treatment, and prevention.

RSTH 382. Cardiopulmonary Diseases II. 2 Units.
Comprehensively studies cardiopulmonary diseases and their adverse effects. Course content includes disease etiology, pathology, pathophysiology, clinical features, prognosis, treatment, and prevention.

RSTH 391. Respiratory Care Practicum I. 2 Units.
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.

RSTH 392. Respiratory Care Practicum II. 2 Units.
Applies specific therapeutic techniques, including oxygen and humidity therapy, aerosol therapy, airway management, lung-inflation techniques, and chest physiotherapy.

RSTH 393. Respiratory Care Practicum III. 4 Units.
Applies therapeutic techniques in continuous mechanical ventilation; special procedures, operation and postanesthesia room, and arterial blood-gas laboratory.

RSTH 401. Cardiopulmonary Intensive Care. 2-4 Units.
Management of the patient with cardiopulmonary failure. Theory and capabilities of various life support and monitoring systems.

RSTH 404. Critical Care. 4 Units.
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 Units.
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 according to current American Heart Association criteria.

RSTH 421. Perinatal and Pediatric Respiratory Care. 2 Units.
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.

RSTH 422. Advanced Perinatal and Pediatric Respiratory Care. 2 Units.
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.

RSTH 424. Exercise Physiology and Pulmonary Rehabilitation. 3 Units.
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 Units.
Introduces the process of proposal development for a respiratory care project. Weekly assignments apply the steps in developing the selected topic. Cardiopulmonary project development incorporates the concepts of evidence-based medicine.

RSTH 432. Senior Project II. 2 Units.
Introduces the process of proposal development for a respiratory care project. Weekly application of the steps in project development. Cardiopulmonary project incorporates project design concepts and needs assessment.

RSTH 433. Senior Project III. 2 Units.
The process of developing a proposal for a respiratory care project. Weekly application of the steps in topic development. Cardiopulmonary project design incorporates the concepts of design implementation and outcome assessment.

RSTH 434. Advanced Patient Assessment. 2 Units.
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.

RSTH 441. Respiratory Therapy Science IV. 3 Units.
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.).

RSTH 444. Case Studies in Neonatal/Pediatric Respiratory Care. 2 Units.
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.

RSTH 451. Respiratory Care Affiliation I. 2 Units.
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.

RSTH 452. Respiratory Care Affiliation II. 4 Units.
Specialty clinical assignments selected from adult critical care, cardiopulmonary specialties, trauma, neurology, surgery, postsurgery, research laboratory.

RSTH 453. Respiratory Care Affiliation III. 4 Units.
Specialty clinical assignments selected from the following areas: cardiopulmonary specialties, pediatrics and neonates, research, and special procedures.

RSTH 454. Respiratory Care Affiliation IV. 5 Units.
Specialty elective clinical assignments selected from the following areas: adult critical care, cardiopulmonary specialties, pediatrics and neonates, polysomnography, rehabilitation and patient education, research, and special procedures.

RSTH 455. Respiratory Care Affiliation V. 2 Units.
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.

RSTH 457. Physical Diagnosis I. 2 Units.
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 Unit.
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. 3 Units.
Experience in the 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. 3 Units.
Experience in the management of respiratory or emergency medical care management. Clinical application of the theoretical management skills developed during the didactic portions of the training. Includes assisting clinical managers in supervision and management of RCP staff and students.

RSTH 464. Case Management in Respiratory Care. 2 Units.
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.

RSTH 466. Advanced Diagnostic Techniques. 2 Units.
Advanced diagnostic theory and practice in the following areas: Holter monitoring, echocardiography, bronchoscopy, sleep studies, and other relevant respiratory care diagnostics.

RSTH 471. Instructional Techniques I. 2 Units.
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 Units.
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.

RSTH 473. Instructional Techniques III. 2 Units.
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 474. Cardiopulmonary Health Promotion and Disease Prevention. 2 Units.
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.

RSTH 485. Evidenced-Based Medicine in Respiratory Care. 4 Units.
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 Units.
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 Units.
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. 3 Units.
Provides experience in clinical education, evaluation, and scheduling. Familiarizes student with hospital affiliation agreements and accreditation issues. Primary experience in the general and adult critical care areas.

RSTH 492. Education Practicum II. 3 Units.
Provides experience in clinical education, evaluation, and scheduling. Familiarizes student with hospital affiliation agreements and accreditation issues. Primary experience in the neonatal and pediatric intensive care units.

RSTH 493. Education Practicum III. 3 Units.
Provides experience in clinical education, evaluation, and scheduling. Familiarizes student with hospital affiliation agreements and accreditation issues. Primary experience in specialty procedures and rehabilitation.

RSTH 494. Respiratory Care Practicum IV. 2 Units.
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.

RSTH 495. Respiratory Care Practicum V. 2 Units.
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.

RSTH 496. Respiratory Care Practicum VI. 3 Units.
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.

RSTH 499. Respiratory Therapy Independent Study. 0.5-4 Units.
Under the direction of the program director, student submits a project or paper on a topic of current interest in an area of respiratory care. Regular meetings provide student with guidance and evaluation in the development of the project or paper. Elected on the basis of need or interest.

RSTH 501. Advanced Cardiopulmonary Anatomy and Physiology I. 3 Units.
Clinical approach and application of cardiopulmonary anatomy and physiology to the respiratory care and medical patient. Includes study of respiratory physiology and cardiac and circulatory function, with relevant clinical application. Provides in-depth study of cardiac and pulmonary anatomy and physiology beyond undergraduate gross anatomy and physiology course work, particularly at the molecular mechanistic level.

RSTH 502. Advanced Cardiopulmonary Anatomy and Physiology I. 3 Units.
Continues RSTH 501. Clinical approach and application of cardiopulmonary anatomy and physiology to the respiratory care and medical patient. Studies respiratory physiology, cardiac, and circulatory function--with relevant clinical application. Provides an in-depth study of cardiac and pulmonary anatomy and physiology beyond undergraduate gross anatomy and physiology course work, particularly at the molecular mechanistic level.

RSTH 541. Advanced Concepts in Critical Care I. 3 Units.
Explores advanced studies of general medicine, cardiopulmonary, and critical care topics as they relate to cardiopulmonary science. Discusses concepts of physical principles and molecular mechanisms associated with phenotypic changes in compliance, resistance, etc., upon implementation of positive pressure ventilation (PPV); as well as benefits and limitations of techniques offered by advanced, novel modes of ventilation in regard to reduced physiological insult upon PPV. Expands on current understanding of the typical respiratory care practitioner to encourage research questions, data interpretation, and revision of current protocols and modalities.

RSTH 542. Advanced Concepts Critical Care II. 3 Units.
Continues RSTH 541 to include advanced understanding of the systemic effects of the critical care patient, their impact on the cardiopulmonary system, and the role of the cardiopulmonary system in maintaining homeostasis. Includes discussion of case study assessment, interpretation, and intervention to encourage improved intensive cardiopulmonary care. Expands on current understanding of the typical respiratory care practitioner to encourage research questions, data interpretation, and revision of current protocols and modalities.

RSTH 550. Advanced Procedures in Cardiopulmonary Science. 2 Units.
Study and practice of invasive and noninvasive procedures and associated equipment--such as the management of artificial airways, fiberoptic bronchoscopy, thoracentesis, chest tubes, hyperbaric therapy, arterial blood gas sampling, line placements, ACLS procedures, medications, IVs--related to the critical care patient. Emphasizes application to patient situations, assessment of care, and principles of equipment use above that of the entry-level respiratory care practitioner.

RSTH 560. Advanced Cardiopulmonary Assessment, Diagnostics, and Monitoring. 2 Units.
An integrated approach to general medicine, cardiopulmonary assessment, diagnostics, and monitoring to include: theory, management, practice, and application to the cardiopulmonary patient. Expands beyond the pulmonary system to include total system assessment, interpretation of diagnostics, and implementation of planning geared toward improved intensive cardiopulmonary care. Expands on current understanding of the typical respiratory care practitioner to encourage research questions, data interpretation, and revision of current protocols and modalities.

RSTH 571. Advanced Pathophysiology of Cardiopulmonary Diseases I. 3 Units.
A case study approach of the pathophysiology, clinical signs and symptoms, diagnosis, management, practice, and prognosis of acute and chronic pulmonary and cardiac diseases--with emphasis on respiratory care and comorbidities. Studies cardiopulmonary function as it relates to understanding of the pathophysiology of disease states.

RSTH 572. Advanced Pathophysiology of Cardiopulmonary Diseases II. 3 Units.
Continues RSTH 571. A case study approach to explore pathophysiology, clinical signs and symptoms, diagnosis, management, practice, and prognosis of acute and chronic cardiopulmonary diseases and comorbidities. Studies cardiopulmonary function as it relates to understanding the pathophysiology and molecular mechanisms of disease states. Encourages research questions/exploration and protocol/policy modification.

RSTH 580. Research Concept in Respiratory Care Sciences. 3 Units.
Applies research specific to respiratory care science through the evaluation and comparison of relevant literature to clinical practice.

RSTH 585. Current Issues in Respiratory and Health Care Policy. 3 Units.
Addresses emerging issues in medicine, cardiopulmonary science, and health-care policy. Reviews relevant research and new trends in respiratory care management, as well as practice that impacts patient care. Includes inpatient, outpatient, rehabilitation, prevention, and related topics.

RSTH 591. Capstone Project in Respiratory Care I. 2 Units.
Students address and present a substantial issue related to their professional area of interest, then design and implement scholarly results and presentation. Emphasizes design, literature review, and needs assessment. A thesis option available for students who require a directed research study.

RSTH 592. Capstone Project in Respiratory Care II. 2 Units.
Students present the findings of their completed project--emphasizing data collection, implementation, and evaluation. A thesis option available for students who require a directed research study.

RSTH 593. Capstone Project in Respiratory Care III. 2 Units.
A continuation of RSTH 592. Graduate student presents findings of the total project, emphasizing data collection, implementation, and evaluation of the project. MSRC faculty and students discuss need for revision or further validation studies.

RSTH 594. Capstone Project in Respiratory Care IV. 2 Units.
Students present the findings of their completed project--emphasizing data collection, implementation, and evaluation. A thesis option available for students who require a directed research study.

RSTH 596. Advanced Clinical Practice in Respiratory Care I. 3 Units.
Clinical practicum in medicine, pulmonary, and critical care under the direct supervision of a practicing/supervising pulmonologist or other preapproved physician. Emphasizes both inpatient and outpatient assessment, management, practice, and procedures. Requires prior approval of the program director and an approved signed preceptor agreement on file.

RSTH 597. Advanced Clinical Practice in Respiratory Care II. 3 Units.
Continues RSTH 597. Clinical practicum in medicine, pulmonary, and critical care--under the direct supervision of a practicing-supervising pulmonologist, or other preapproved physician. Emphasizes inpatient and outpatient assessment, diagnosis, management, practice, and procedures. Requires prior approval of the program director, as well as an approved signed preceptor agreement on file.

Restorative Dentistry (RESD)

Courses

RESD 701. Restorative Dentistry I Lecture. 2 Units.
Terminology, morphologic characteristics, and interrelationship of permanent teeth.

RESD 701L. Restorative Dentistry I Laboratory. 2 Units.

RESD 702. Restorative Dentistry II. 2 Units.
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 Units.
Laboratory experiences.

RESD 708. Restorative Dentistry III Lecture. 2 Units.
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 Units.
Laboratory experiences.

RESD 709. Restorative Dentistry IV Lecture. 2 Units.
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 Units.

RESD 764. Removable Prosthodontics. 5.5 Units.
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 Units.
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 Units.
Laboratory experience in single casting techniques.

RESD 772. Fixed Prosthodontics Lecture. 2 Units.
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 Units.
Laboratory experience in fixed prosthodontics.

RESD 773. Fixed Prosthodontics II Lecture. 2 Units.
Continues RESD 772.

RESD 773L. Fixed Prosthodontics II Laboratory. 2 Units.
Continued laboratory experience in fixed prosthodontics.

RESD 801. Fixed Prosthodontics and Occlusion. 1 Unit.
Introduces additional techniques for fixed prosthodontics, treatment planning, and repair techniques for prosthetic failures.

RESD 811. Dental Materials II. 1 Unit.
Selection and uses of current dental materials.

RESD 822. Operative Dentistry II Lecture. 1 Unit.
Indications, preparations, and placement of direct core build-up procedures (including endodontically treated teeth), atypical case gold, and complex amalgam restorations. Covers implant overdenture procedures. Provides expanded teaching and hands-on laboratory practice of CAD/CAM procedures.

RESD 822L. Operative Dentistry II Laboratory. 1 Unit.
Laboratory experiences introduce students to the MARC simulator, CAD/CAM experience in tooth preparation and image capture, post and core build-up, and implant overdenture procedures; as well as further complex tooth restoration procedures.

RESD 823. Aesthetic Dentistry. 1 Unit.
Principles of dental aesthetics, adhesion to tooth tissues, preparation and placement of tooth-colored restorations in anterior and posterior teeth. Resin, gold, ceramic, and CAD/CAM restorations. Emphasizes diagnosis and treatment planning for aesthetic procedures.

RESD 823L. Aesthetic Dentistry Laboratory. 1 Unit.
Laboratory experiences focusing on dental photography, diastema closures, bleaching trays, resin restorations, and preparation of teeth for veneer restorations and temporization.

RESD 844. Restorative Study Club Seminar. 0.5 Units.

RESD 854. Implant Dentistry. 2 Units.
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 Unit.
Laboratory experience that applies 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. Laboratory 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 Units.
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. 37.5 Units.
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.

School of Behavioral Health Global (SBHG)

Courses

SBHG 700. Global Behavioral Health Service Learning. 2 Units.
A short-term service learning elective (approximately ten days) offered during term breaks and summer quarter that provides students with international practice experiences in behavioral health. Utilizes international hospitals and University associations, the Adventist Development Relief Agency (ADRA), and other international humanitarian service organizations with which LLU has a service history. Pre-, concurrent, and postpracticum didactic content provided to deepen students? learning and provide reflective opportunities. Emphasizes recovery, resiliency, and empowerment as the philosophical foundation of global behavioral health interventions. Examines ethical and practice issues associated with global humanitarian service, as well as the use of traditional Western behavioral health interventions. Gives critical attention to interactions with governmental and nongovernmental organizations, the importance of impact research, and responsibilities regarding sustainability. Includes additional topics and issues, depending on the specific sociocultural population; and the practice issues relevant to location of the short-term practice site. Practicum sites, identified and coordinated through the School of Behavioral Health and the Office of the Dean, may vary each time course is offered. Permission to participate in practicum experiences is coordinated by the department--which limits participation to students in good academic and professional performance standing. Number of students participating varies and is subject to change, depending on the practice site. Costs and international visa requirements differ, depending on each country?s economic and government differences.

SBHG 705. Global Behavioral Health Elective Practicum. 4 Units.
An elective immersion experience (typically three months) in international behavioral health practice, offered during summer quarter. Utilizes international hospitals and University associations, the Adventist Development Relief Agency (ADRA), and other international humanitarian service organizations with which LLU has a service history. Emphasizes recovery, resiliency, and empowerment as the philosophical foundations of global behavioral health interventions. Requires pre- and concurrent seminars. Utilizes telesupervision to support oversight and regular contact with assigned faculty member from LLU. Host site may also require concurrent enrollment in courses that support understanding specific practice methods and population milieus. Portfolio methodology supports students? reflective learning and further exploration of ethical and practice issues associated with global humanitarian service, the use of traditional Western behavioral health interventions, interactions with governmental and nongovernmental organizations, importance of impact research, and responsibilities regarding sustainability. Additional topics and issues assigned for exploration, depending on specific sociocultural population and practice issues relevant to the practicum site. Practicum sites identified and coordinated through the School of Behavioral Health and the Office of the Dean, depending on contractual agreements. Participation in practicum experiences limited to students in good academic and professional performance standing. Number of students participating varies and is subject to change, depending on the practice site. Costs and international visa requirements differ, depending on each country?s economic and government differences.

School of Dentistry—Clinical (SDCL)

Courses

SDCL 696. Directed Study. 1-4 Units.
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. 2 Units.
Introduces direct patient care in the main clinic. Discusses clinic policies and requirements; reviews use and expands understanding of the clinic computing system. Introduces basic patient-management techniques, as well as practice-management issues--including patient financial planning, asepsis technique, and universal precautions. Introduces a private practice model of teamwork between practitioners in patient care; discusses diagnosis and treatment planning, including appropriate sequencing of treatment procedures; discusses professional liability and regulatory compliance in dentistry; reviews patient clinical examinations and standards of care. Introduces various departments and clinical requirements within each department.

SDCL 712. Clinic Orientation II. 2 Units.
Builds on SDCL 711 by continuing instruction related to the clinic computing system. Discusses diagnosis and treatment planning of patient cases, as well as sequencing of treatment procedures. Includes intraoral photography, financial planning for patients, disinfection techniques and universal precautions, quality assurance and improvement, long-term assessment of care outcomes. Introduces various departments and requirements within each department.

SDCL 713. Clinic Orientation III. 1 Unit.
The third course in a sequence of clinic orientation courses, which completes the bridge for students transitioning from preclinical to clinical experience.

SDCL 744. Clinical Training in Advanced Restorative Dentistry. 8 Units.
A six-month program that is predominantly preclinical and clinical in nature. Provides mission support among Seventh-day Adventist international dentists, as well as 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. Course credit not applicable to any other program in the School of Dentistry.

SDCL 801. Clinical Patient Care. 2 Units.
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 Units.
Continues SDCL 801.

SDCL 803. Clinical Patient Care. 2 Units.
Continues SDCL 801, 802.

SDCL 804. Clinical Patient Care. 2 Units.
Continues SDCL 801, 802, 803.

SDCL 805. Clinical Patient Care. 2 Units.
Continues SDCL 801, 802, 803, 804.

SDCL 806. Clinical Patient Care. 2 Units.
Continues SDCL 801, 802, 803, 804, 805.

SDCL 807. Clinical Patient Care. 2 Units.
Continues SDCL 805, 806.

SDCL 808. Clinical Patient Care. 2 Units.
Continues SDCL 805, 806, 807.

SDCL 896. Clinical Directed Study. 1-4 Units.
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 Units.
Continues registration that allows an extended professional to satisfy clinic requirements for degree completion.

School of Dentistry—Conjoint (SDCJ)

Courses

SDCJ 744. Clinical Training in Advanced Restorative Dentistry. 8 Units.
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 759A. Clinical Experience. 3 Units.
A one-month program that offers didactic instruction, laboratory, clinical observation, assisting, and research for interns, externs, and fellows. Fellows may also provide direct patient care at the discretion of the respective program director. Students enroll in one of the following disciplines: biomaterials research, dental anesthesiology, endodontics, implant dentistry, oral and maxillofacial surgery, oral pathology and radiology, orthodontics, pediatric dentistry, periodontics, or prosthodontics. Students spend a minimum of 30 hours per week engaged in the assigned activities. Course generates no academic credit and cannot apply toward any program in the School of Dentistry.

SDCJ 759B. Clinical Experience. 6 Units.
A two-month program that offers didactic instruction, laboratory, clinical observation, assisting, and research for interns, externs, and fellows. Fellows may also provide direct patient care at the discretion of the respective program director. Students enroll in one of the following disciplines: biomaterials research, dental anesthesiology, endodontics, implant dentistry, oral and maxillofacial surgery, oral pathology and radiology, orthodontics, pediatric dentistry, periodontics, or prosthodontics. Students spend a minimum of 30 hours per week engaged in the assigned activities. Course generates no academic credit and cannot apply toward any program in the School of Dentistry.

SDCJ 759C. Clinical Experience. 9 Units.
A three-month program that offers didactic instruction, laboratory, clinical observation, assisting, and research for interns, externs, and fellows. Fellows may also provide direct patient care at the discretion of the respective program director. Students enroll in one of the following disciplines: biomaterials research, dental anesthesiology, endodontics, implant dentistry, oral and maxillofacial surgery, oral pathology and radiology, orthodontics, pediatric dentistry, periodontics, or prosthodontics. Students spend a minimum of 30 hours per week engaged in the assigned activities. Course generates no academic credit and cannot apply toward any program in the School of Dentistry.

SDCJ 767C. Clinical Experience in Prosthodontics. 10 Units.
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. 4-12 Units.

Social Policy (SPOL)

Courses

SPOL 554. Environment, Resources, and Development Policy. 3 Units.
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 Units.
Reviews current knowledge and/or research methodologies in specified areas of social policy and social research.

SPOL 599. Independent Study. 1-8 Units.
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 600. Colloquium. 1 Unit.
Provides students with an academic seminar to explore and discuss relevant topics in the field of social policy and social research.

SPOL 613. Social Science Concepts I. 4 Units.
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 Units.
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.

SPOL 615. Economic Theory and Social Policy. 4 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
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 Units.
Development of the dissertation proposal. Research advisor develops with the student mutually agreed-upon objectives. Evaluation based on accomplishment of these objectives.

SPOL 683. Dissertation Proposal III. 2 Units.
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.

SPOL 697. Research. 4,8 Units.
Credit for dissertation research. Total of 20 units required. May be repeated for credit.

SPOL 699. Dissertation. 4-12 Units.
Should be taken during the last quarter of registration prior to completion and defense.

Social Work (SOWK)

Courses

SOWK 504. Interviewing and Counseling. 3 Units.
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 511. Human Behavior and Cross-cultural Environment I. 3 Units.
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.

SOWK 512. Human Behavior and Cross-cultural Environment II. 3 Units.
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.

SOWK 513. Human Behavior and Cross-Cultural Environment. 5 Units.
Provides the basis for understanding human development and life transitions throughout the life span within an ecological perspective. Orients the student to the generalist social work approach to understanding human behavior in a cross-cultural context, with a focus on normal behavior from birth through senescence. Provides a theoretical foundation on which to build social work-practice skills.

SOWK 514. Social Welfare Policies and Services. 5 Units.
Provides students with an understanding of the historical foundations of the social work profession, including its influence in the development of the U.S. system of social welfare. Examines the societal perspectives and contradictions that have affected the development and evolution of contemporary social policies and services in the U.S. Emphasizes understanding of the role of race, gender, and perception of human needs in shaping social policy. Analyzes programs, policies, and issues as responses to long-term changes in social and economic conditions in the U.S. and the needs and demands of oppressed groups. Orients students to the structure and process of policy development and legislative advocacy at both the state and federal levels, including the development of UN conventions and the varied international frameworks and challenges affecting policy advocacy and change within international environments.

SOWK 515. Social Policy I. 3 Units.
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 Units.
Facilitates understanding of generalist practice in microsystems. Students conduct a biopsychosocial-spiritual assessment, along with 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.

SOWK 518. Foundation Practice II: Groups. 3 Units.
Provides students with an understanding of generalist social work practice with groups. Includes a survey of small-group constructs, research, and principles of ethical application. Emphasizes differentiation among the types of individuals, situations, and presenting problems best served through group processes and intervention methods.

SOWK 519. Foundation Practice III: Organizations and Communities. 3 Units.
Provides students with an understanding of generalist social work practice in organizational and community settings. Utilizes an ecological systems framework and an empowerment practice model in discussion within the macro context. Students examine neighborhood and community conditions that affect outcomes for populations at risk. Students also examine the role of social service agencies within urban communities, including relationships with other neighborhood institutions and organizations. Students define concepts of community and organization as they develop community organizing and organizational leadership skills that are culturally sensitive and based in social work values.

SOWK 520. Foundation Practice IV: Families. 3 Units.
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.

SOWK 521. Global Practice I: International Social Work. 4 Units.
Introduces students to social work practice in a global context. Examines the ethical and practice issues associated with utilizing traditional interventions in underdeveloped and developing environments lacking established social services systems. Gives critical attention to interactions with governmental and nongovernmental organizations, importance of impact research, and ethical responsibilities regarding sustainability. Additional topics and issues addressed include: globalization, human rights, social justice, diffusion of innovation and social development versus ecological demise, social exclusion, poverty, movements of people across borders, mental and physical health disparities, human trafficking, effects of war and violence and their aftermath, and disaster response.

SOWK 547. Research Methods I. 3 Units.
Reviews the quantitative and qualitative methodological techniques used in designing and analyzing social work research and practice. Emphasizes preparing students for practice evaluation.

SOWK 548. Research Methods. 5 Units.
Reviews quantitative and qualitative research methodologies in order to provide students with an understanding of the scientific and ethical approaches to building knowledge. Employs computer-based statistical analysis and data interpretation to assist students in integrating research into social work practice.

SOWK 549. Research Methods II. 3 Units.
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.

SOWK 578. Field Orientation. 1 Unit.
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.

SOWK 584. Special Topics in Social Work. 1-4 Units.
Lecture and discussion, under the direction of a faculty member, on a current topic in social work. May be repeated for a maximum of 4 units applicable to degree program.

SOWK 595. Professional Development. 2 Units.
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 Units.
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. Psychopathology, Psychopharmacology, and Diagnosis of Behavioral Health Conditions. 3,4 Units.
Focuses on understanding and application of the DSM-IV-TR and Mental Status Examination, as organized from a person-in-the-environment perspective. Integrates recovery and a review of psychopharmacology into the diagnostic process, while enhancing awareness of sociocultural needs and issues of populations at risk. 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. Experiential activities to increase practice skills in the provision of mental status examinations and diagnostic evaluation required for fourth unit.

SOWK 615. Social Policy II. 3 Units.
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 Processes and Interventions. 3 Units.
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. Students learn to utilize behavioral health-treatment strategies and substance-abuse counseling techniques from within a biopsychosocial-spiritual paradigm that integrates an understanding of the recovery process.

SOWK 651. Medical Social Work. 2 Units.
Orients students to medical social work in hospitals and other health care environments. Gives attention to the ecological practice perspective, the application of biopsychosocial-spiritual assessment, along with other interventions used to assist patients and families. Examines additional interventions, including connecting patients and families to resources and supports in the community; providing psychotherapy, supportive counseling, grief counseling; practice modalities for populations with various diseases/conditions, or helping patients expand and strengthen their network of social supports. Addresses roles and responsibilities of membership in an interdisciplinary team of health professionals, as well as requirements of follow-up care. Focuses on the needs of high-risk populations (including the poor, ethnic and racial minorities, recent immigrants, and children from high-risk environments). Reviews medical social work's role in the development of community health care systems as an aspect of accountable health care environments.

SOWK 653. Child Welfare Practice. 2 Units.
Focuses on practice with children and families in relationship to environmental stability. Examines the association between the physical and mental health of children and 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 654B. Therapeutic Interventions with Older Adults II. 3 Units.

SOWK 658. Children's Psychotherapy. 2 Units.
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. Recovery in Behavioral Health. 2 Units.
Facilitates understanding of the issues, theories, and recovery-oriented interventions used with persons experiencing severe and persistent behavioral health conditions. Presents an overview of the historical development of behavioral health perspectives and interventions. Emphasizes understanding and application of contemporary wellness-recovery action plans and techniques.

SOWK 660. Advanced Theory and Practice with Ethnically Diverse Clients. 3 Units.
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. Psychodynamic Therapies. 3 Units.
Basis for understanding psychodynamic therapy (from object relations therapy to interpersonal 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.

SOWK 661L. Psychodynamic Practice Lab. 1 Unit.
Supervised practice simulations observing and/or engaging in psychodynamic therapy.

SOWK 662. Behavioral and Cognitive Therapies. 4 Units.
Provides understanding and practice of cognitive-behavioral therapies (CBT). Reviews CBT theories and interventions, including a range of cognitive-behavioral strategies such as systematic desensitization, cognitive restructuring, and contingency management. Emphasizes more progressive models, such as Dialectical Behavior Therapy (DBT).

SOWK 662L. Behavioral and Cognitive Therapies Practice. 1 Unit.
Supervised practice simulations observing and/or engaging in cognitive/behavioral therapies.

SOWK 663. Crisis and Trauma Interventions. 3 Units.
Examines the nature and characteristics of crisis, as well as traumatic events, for their long-term effects on psychosocial functioning. Presents crisis theories and interventions for working with children and adults who have been exposed to man-made or natural traumas such as violence or loss; along with ethical, legal, and cultural factors of crisis intervention. Introduces students to specific strategies for responding to community, national, and international crises.

SOWK 665. Advanced Social Work Practice with Groups. 3 Units.
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.

SOWK 667. Advanced Integrative Practice. 3 Units.
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.

SOWK 671. Foundation Practice V: Social Work Administration. 3 Units.
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 Units.
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.

SOWK 673. Program Planning and Implementation. 5 Units.
Orients 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.

SOWK 675. Supervision. 3 Units.
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 676. Human Resources Planning and Development. 4 Units.
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.). 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). Permission of instructor required for registration by students not in the policy, planning, and administration concentration.

SOWK 676A. Human Resources Planning and Development. 3 Units.
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.

SOWK 676B. Human Resources Planning and Development Seminar. 3 Units.
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 Units.
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.

SOWK 678. Integrative Generalist Practice and Seminar. 2 Units.
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 680. Global Practice II: Children and Family Policies and Services. 2 Units.
Orients students to the perspectives that have shaped policies, services, and interventions in child welfare in the U.S. as compared with postindustrial, underdeveloped, and developing countries. Examines the varied values and treatment of children, and how these have facilitated the evolution and enactment of child welfare policies and systems. Analyzes debates regarding governmental interventions versus family privacy through a cross-cultural and international lens. Considers the utilization of universally accepted techniques and interventions. Emphasizes professional self-development for competent global child welfare practice and advocacy.

SOWK 681. Global Practice III: Behavioral Health Policies and Services. 2 Units.
Provides students with an understanding of the development and organization of behavioral health systems in the U.S. as compared with other postindustrial, developing, and underdeveloped countries. Examines the ethical and practice implications of burgeoning global behavioral health needs in light of providing services within environments void or severely lacking in systems infrastructure and professional expertise. Gives attention to understanding the utilization of universally transferable behavioral health concepts and interventions.

SOWK 682. Legal and Ethical Aspects in Health and Mental Health Services. 3 Units.
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 Units.
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.

SOWK 684. Advanced Policy Projects. 2,3 Units.
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 695A. Advanced Research Methods. 2 Units.
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 Units.
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 Units.
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 Units.
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.

SOWK 698. Thesis. 2 Units.
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 Behavioral Health.

SOWK 701. Professional Colloquium: Spousal or Partner Abuse. 1 Unit.
Provides subject content in spousal or partner abuse, as required by the state of California for licensure as a licensed clinical social worker (LCSW). Course does not count toward the M.S.W. degree or Case Management Postbaccalaureate Program.

SOWK 702. HIV/AIDS. 1 Unit.
Provides subject content in HIV/AIDS, as required by the state of California for licensure as a licensed clinical social worker (LCSW). Course does not count toward the M.S.W. degree or the Case Management Program certificate.

SOWK 703. Substance Abuse. 1 Unit.
Provides subject content in the laws related to substance abuse, as required by the state of California for licensure as a licensed clinical social worker (LCSW). Does not cover treatment content already addressed in the M.S.W. degree curriculum. Does not count toward the M.S.W. degree or the Case Management Program certificate.

SOWK 704. Older Adult Interventions and Services. 1 Unit.
Provides subject content in the laws related to older adult interventions and services, as required by the state of California for licensure as a licensed clinical social worker (LCSW). Does not count toward the M.S.W. degree or the Case Management Program certificate.

SOWK 757A. Professional Foundation Practicum and Seminar. 3 Units.
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.

SOWK 757B. Professional Foundation Practicum and Seminar. 3 Units.
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.

SOWK 757C. Professional Foundation Practicum and Seminar. 3 Units.
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.

SOWK 787A. Advanced Professional Practicum and Seminar. 4 Units.
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.

SOWK 787B. Advanced Professional Practicum and Seminar. 4 Units.
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.

SOWK 787C. Advanced Professional Practicum and Seminar. 4 Units.
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.

Statistics (STAT)

Courses

STAT 414. Introduction to Biostatistics I. 3 Units.
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. Includes a brief introduction to multivariate analysis. Practice in reading and interpreting statistical summaries in peer-reviewed literature. Emphasizes the practical application of biostatistics.

STAT 415. Computer Applications in Biostatistics. 1 Unit.
Uses SPSS to apply appropriate statistical methods in the summary and analysis of health-related data, including descriptive; as well as hypothesis testing using t-tests, correlation, linear regression, chi-square, and ANOVA. Designed to be taken concurrently with STAT 414.

STAT 416. Introduction to Biostatistics II. 4 Units.
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.

STAT 417. Biomedical Data Management I. 4 Units.
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 Units.
Student designs questionnaires and data-abstraction forms. Data collection, entry, and verification. Data cleaning.

STAT 419. Biomedical Data Management III. 4 Units.
Deployment and maintenance of client/server databases in a research/health care setting.

STAT 421. Data Presentation. 3 Units.
Student summarizes and presents biomedical research data. Explores several application software packages for graphing, summarizing, and presenting data explored.

STAT 441. Word Processing Fundamentals. 1 Unit.
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.

STAT 443. Database Fundamentals. 1 Unit.
Database principles and practice featuring current version of FoxPRO. Laboratory homework required.

STAT 448. Analytical Applications of SAS. 3 Units.
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.

STAT 449. Analytical Applications of SPSS. 3 Units.
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.

STAT 468. Data Analysis. 4 Units.
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.

STAT 498. Senior Project. 5 Units.
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 Units.
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 Units.
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.

STAT 509. General Statistics. 4 Units.
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.

STAT 514. Intermediate Statistics for Health-Science Data. 3 Units.
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.

STAT 515. Grant- and Contract-Proposal Writing. 3 Units.
A module-based course that presents an overview of the basic principles and practice in the art and science of successful grantsmanship primarily from a research perspective and a program-based approach. Provides a comprehensive review and understanding of the relevant core structures, stakeholders, processes, factors, and essential skills by engaging students in the actual preparation of a proposal to a funding agency. Demonstrates in a ?real world?-type practice environment the key elements in proposal development, submission, and the review process---which include identifying potential funding resources (from international, government, and private sectors such as foundations), formulating specific aims or objectives, determining appropriate research or program design and evaluation methods as applicable, and building realistic budget and sustainability plans.

STAT 521. Biostatistics I. 4 Units.
Fundamental concepts in data analysis and statistical inference. Descriptive statistics, probability rules, discrete/continuous probability distributions, sampling distributions, central limit theorem, point/interval estimation for means/proportions, hypothesis testing, one-/two-sample tests, power analysis, ANOVA and multiple comparison procedures, simple regression/correlation, and chi-square tests.

STAT 522. Biostatistics II. 4 Units.
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.

STAT 523. Biostatistics III. 4 Units.
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.

STAT 525. Applied Multivariate Analysis. 3 Units.
Multivariate normal distribution, discriminant analysis, principal components analysis, factor analysis, and canonical correlation. Emphasizes application of these analyses and interpretation of results.

STAT 528. Applied Statistics for Clinicians. 3 Units.
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.

STAT 530. Special Topics in Biostatistics. 1-4 Units.
Lecture and discussion on a current topic in biostatistics. May be repeated for a maximum of 4 units applicable to degree program.

STAT 531. Parametric and Nonparametric Bivariate Statistics. 4 Units.
Focuses on concepts behind the appropriate use of parametric and nonparametric statistical methods. Includes laboratory.

STAT 532. Applied Bivariate Statistical Analysis. 4 Units.
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.

STAT 533. Applied Multivariable Statistical Analysis. 4 Units.
Explains the different methods of multivariable analyses and other advanced statistical methods, and indicates reasons for choosing one method over another. Final project requires student to perform an appropriate multivariable analysis on a dataset, run appropriate literature review for confounding variables, and present results in a 20-30 minute timeframe using presentation software.

STAT 534. Quantitative Data Presentation. 3 Units.
Quantitative data summaries and presentation. Uses selected software programs for graphing, summarizing, and presenting data.

STAT 535. Modern Nonparametric Statistics. 3 Units.
Application and theory of nonparametric methods. One-/two-sample nonparametric tests, k-sample tests, tests for equality of scale parameters, Kolmogorov-Smirnov type tests, tests for ordered alternatives, tests for paired comparisons and block designs, rank/concordance correlations, chi-square and measures of association, Mantel-Haenszel & McNemar's tests, permutation and bootstrap methods, smoothing techniques, and semiparametric regressions.

STAT 538. Probability and Statistical Theory I. 3 Units.
Statistical regularity, probability spaces. Fundamental theorems in discrete probability. Bayes' Theorem. Random variables, densities, and distribution functions.

STAT 539. Probability and Statistical Theory II. 3 Units.
Continuous distributions. Transformations of random variables. Central-limit theorem. Distributions of sample statistics. Statistical inference, estimation, hypothesis testing, chi-square tests. Correlation.

STAT 545. Survival Analysis. 3 Units.
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-Meyer estimator, piecewise exponential estimator, and other equivalent estimators. Cox proportional hazard model and associated statistical inferences.

STAT 548. Analytical Applications of SAS. 2 Units.
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.

STAT 549. Analytical Applications of SPSS. 2 Units.
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.

STAT 554. Applied Bayesian Data Analysis. 2 Units.
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.

STAT 555. Time Series and More Longitudinal Data Analysis. 2 Units.
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 .

STAT 556. Categorical Data Analysis. 2 Units.
Topics include basic goodness-of-it 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.

STAT 557. Research Data Management. 3 Units.
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.

STAT 558. Advanced Statistical Packages. 3 Units.
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.

STAT 564. Survey and Advanced Research Methods. 3 Units.
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.

STAT 568. Data Analysis. 3 Units.
Concepts and applications of the most common data analysis methods: correlation and regression, 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. All data analysis assignments to be completed in SPSS.

STAT 569. Advanced Data Analysis. 3 Units.
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.

STAT 594. Statistical Consulting. 1-4 Units.
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.

STAT 605. Seminar in Biostatistics. 1 Unit.
Presents and discusses area of interest. Individual research and report.

STAT 625. Special Topics in Biostatistics. 1-3 Units.
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.

STAT 692. Research Consultation. 1-8 Units.
Individual consultation on project design and data collection, analysis, evaluation, and interpretation.

STAT 694A. Research. 1 Unit.
Independent statistical research using epidemiologic data. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

STAT 694B. Research. 1 Unit.
Independent statistical research using epidemiologic data. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

STAT 694C. Research. 1 Unit.
Independent statistical research using epidemiologic data. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

STAT 694D. Research. 1 Unit.
Independent statistical research using epidemiologic data. Research program arranged with faculty member(s) involved. Written report and oral presentation required.

STAT 695. Thesis. 2-8 Units.
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 Units.
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.

STAT 798. Field Practicum. 1-4 Units.
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.

Surgery (SURG)

Courses

SURG 599. Surgery Directed Study. 1.5-18 Units.

SURG 701. Surgery Clerkship. 1.5-15 Units.
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 Units.
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 Intensive Care. 1.5-6 Units.
Includes four-week service on a surgical intensive care unit.

SURG 891. Surgery Elective. 1.5-27 Units.
May include pediatric surgery, vascular surgery, trauma surgery, general surgery, cardiothoracic surgery, plastic surgery, neurosurgery, otolaryngology, surgical intensive care, and urology.

Urology (UROL)

Courses

UROL 891. Urology Elective. 1.5-27 Units.
Offers fourth-year medical students the opportunity to explore various areas of urology, including research.

Faculty

Key to Codes

In the alphabetical listing below, the two- or three-letter code following the department name indicates the school or faculty in which the faculty member holds academic appointment. The codes are:

AH	School of Allied Health Professions
BH	School of Behavioral Health
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
FGS	Faculty of Graduate Studies

The Faculty

AAEN, GREGORY S. Assistant Professor, Department of Pediatrics SM and Department of Neurology SM
M.D. Loma Linda University SM 2003

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 and Department of Emergency Medicine SM
M.D. Loyola Stritch Medical School, Chicago, Illinois 1989

ABDEL-SAYED, SHELLEY F. Assistant Professor, Department of Anesthesiology SM
M.D. Loma Linda University SM 2004

ABDELSHEHID, JOHN. Assistant Professor, Department of Emergency Medicine SM
M.D. University of California, Los Angeles 2001

ABDIPOUR, AMIR. Assistant Professor, Department of Medicine SM
M.D. Shahid Beheshti University of Medical Science, Tehran, Iran 1996

ABDRABOU, RASHA. Assistant Clinical Professor, Department of Family Medicine SM
Dr.P.H. Loma Linda University PH 2009

ABEDI, HAMID R. Assistant Professor, Department of Endodontics SD
B.D.S. University of London, UK 1991
M.S. Loma Linda University 1997

ABESA, MARIA REGINA A. Assistant Professor, Department of Pediatrics SM
M.D. University of the Philippines 2008

ABOGADO, ELVA J. Clinical Instructor, School of Nursing SN
M.H.A. California State University, San Bernardino 2000

ABOU-ZAMZAM, AHMED MOHAMMED, JR. Professor, Department of Cardiovascular and Thoracic Surgery SM
M.D. Yale University School of Medicine 1992

ABRAMOVITCH, KENNETH. Professor, Department of Oral Diagnosis, Radiology, and Pathology SD and Department of Medicine SM
M.S. University of Texas Health Sciences Center, San Antonio 1986
D.D.S. McGill University, Canada 1980

ABRAMS, KRISTEN K. Instructor, Department of Psychiatry SM
M.D. Loma Linda University 2004

ACHILEFU, SAMUEL. Adjunct Professor, Department of Radiology SM and Department of Pharmaceutical and Administrative Sciences SP
Ph.D. University of Nancy, France 1991

ADAMS, TRACY R. Assistant Professor, Department of Dental Hygiene SD
B.S. Loma Linda University SD 2005

ADEOYE, OLUKEMI GRACE. Instructor, School of Public Health PH
M.P.H. Loma Linda University PH 2009

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

AGAPIAN, JOHN V. Assistant Professor, Department of Surgery SM
M.D. The Chicago Medical School 2000

AGHAKHANI, ARASH. Assistant Professor, Department of Dental Anesthesiology SD
M.S. University of Maryland 1996
D.D.S. University of the Pacific 1994

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

AHMAD, JAVED. Adjunct Associate Professor, Department of Radiation Technology AH
M.B.B.S. Kyber Medical College, Peshawar, Pakistan 1980

AHMAD, MAZNA. Assistant Professor, Department of Medicine SM
M.D. Ross University School of Medicine, Dominica 2008

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, School of Public 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 2000

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

AKELE, ZEBAYEL. Assistant Professor, Department of Medicine SM

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AKIN, MARIE-ROSE MINHTAM LEVAN. Adjunct Assistant Professor, Department of Pathology and Human Anatomy SM
M.D. Indiana University 1981

ALAGL, ADEL S. Assistant Professor, Department of Periodontics SD
B.D.S. King Abdulazie University, Saudi Arabia 1995

ALATTAS, ABDULKADER. Assistant Professor, Department of Radiation Technology AH
Ph.D. Texas Woman's University 2006

AL FAGIH, MOHAMMED RASHID. 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

ALBERT, JULIE C. Associate Professor, Department of Psychiatry SM
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ALBERTSON, STEWART R. Assistant Clinical Professor, School of Public Health 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

ALEMI, QAIS. Assistant Professor, Department of Social Work and Social Ecology BH
M. P. H., M.B.A. Loma Linda University PH 2013

ALEXANDER, WIL. Emeritus Professor, School of Religion SR; Professor, Department of Family Medicine SM
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ALIPOON, ALAN. Instructor, Department of Cardiopulmonary Sciences AH
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ALIPOON, LAURA LYNN. Professor, Department of Radiation Technology AH
Ed.D. La Sierra University 2001

ALISMAIL, ABDULLAH K. Assistant Professor, Department of Cardiopulmonary Sciences AH
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ALLARD, MARTIN W. Professor, Department of Anesthesiology SM
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ALLSMAN, LORA L. Instructor, Department of Family Medicine SM
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ALSOWAYEGH, KHALID S. Assistant Professor, Department of Cardiopulmonary Sciences AH
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ALTUWAIJRI, 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

AMAAR, YOUSEF G. Associate Research Professor, Department of Surgery SM
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AMANKONAH, THOMAS D. Associate Professor, Department of Medicine SM
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AMINIKHARRAZI, TAHER. Assistant Clinical Professor, Department of Restorative Dentistry SD
D.M.D. Boston University 2001

AN, JASON K. Instructor, Department of Emergency Medicine SM
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ANDERSEN, BRADLEY T. Assistant Clinical Professor, Department of Medicine SM
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ANDERSEN, SHARILYN M. Assistant Professor, School of Public Health PH
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ANDERSON, DENNIS K. Assistant Clinical Professor, Department of Plastic and Reconstructive Surgery SM
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ANDERSON, DONALD LEE. Associate Professor, Department of Psychiatry SM
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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
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ANDERSON, NANCY J. Professor, Department of Dermatology SM and Department of Basic Sciences SM
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ANDERSON, PAMELA E. Assistant Clinical Professor, Department of Medicine SM
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ANDERSON, S. MARCI L. Assistant Professor, School of Public Health PH
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ANDERSON, SHAWN R. Assistant Professor, Department of Endodontics SD
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ANDREASEN, TROY J. Assistant Clinical Professor, Department of Plastic and Reconstructive Surgery SM
M.D. University of Utah Medical School 1995

ANDREWS, D. JEANNE. Emeritus Associate Professor, Department of Pediatrics SM
M.D. Loma Linda University SM 1950

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ANGELES, DANILYN MAG-AKAT. Associate Professor, Department of Basic Sciences SM, Department of Pediatrics, School of Nursing SN, Member FGS
Ph.D. Loma Linda University FGS 2000

ANGELOV, NIKOLA. Adjunct 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
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ANHOLM, JAMES D. Associate Professor, Department of Medicine SM
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ANTONIO, NICOLE M. Assistant Professor, Department of Pediatrics SM
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APPEL, JAMES ERIC. Assistant Professor, Department of Family Medicine SM
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APPLEGATE, PATRICIA JEAN. Associate Professor, Department of Medicine SM
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APPLEGATE, RICHARD LEE II. Professor, Department of Anesthesiology SM, Department of Basic Sciences SM, and School of Nursing SN
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ARBABI, ZARSHID. Assistant Professor, Department of Medicine SM
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ARAFA, AHNAF M. Adjunct Assistant Professor, Radiation Technology AH
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ARDILES, YONA R. Instructor, Department of Medicine
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ARENAS, JAVIER L. Instructor, Department of Urology SM
M.D. University of Texas 2002

ARIUE, BARBARA K. Assistant Professor, Department of Pediatrics SM
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ARMAND, AMANDA J. Instructor, Department of Dental Hygiene SD
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ARMIJO, JAVIER ALONSO. Assistant Clinical Professor, Department of Family Medicine SM
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ARMSTRONG, DARLENE A. Associate Professor, Department of Dental Hygiene SD
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ARNETT, G. WILLIAM. Adjunct Assistant Professor, Department of Orthodontics SD
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ARNETT, R. LESLIE, JR. Professor, Department of Periodontics SD and Periodontics Program FGS
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D.D.S. University of Southern California 1959

ARNETT, MARJORIE R. Assistant Professor, Department of Dental Education Services SD
M.S. California State University, Fullerton 1997

ARUNI, WILSON. Assistant Research Professor, Department of Basic Sciences SM
Ph.D. Tami Nadu Veterinary and Animal Sciences University, India 2000

ASAVASOPON, SKULPAN. Assistant Professor, Department of Physical Therapy AH
M.P.T. Loma Linda University AH 1999

ASGARZADIE, FARBOD. Associate Professor, Department of Neurosurgery SM
M.D. University of Chicago 1999

ASHLEY, EDD J. Professor, Department of Physical Therapy AH
Ed.D. Boston University 1971

ASHOK, SEETHARAMAN. Assistant Clinical Professor, Department of Urology SM
M.B.B.S. Maulana Azad Medical College, New Delhi, India 1981

ASHWAL, STEPHEN. Distinguished Professor, Department of Pediatrics SM and Department of Neurology 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 School of Public Health PH
M.D. Loma Linda University SM 1979

ASK, RON M. Adjunct Assistant Professor, Department of Dental Education Services SD
D.D.S. Loma Linda University SD 1977

ASSADI, RAMIN. Assistant Professor, Department of Medicine SM
M.D. Tehran University of Medical Sciences 2000

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 SM
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

AUSKER, YURI. Adjunct Assistant Professor, Department of Restorative Dentistry SD
D.D.S. "La Spienza" School of Dentistry, Rome, Italy 1984

AUSTIN, CRAIG EUGENE. Instructor, Department of Clinical Laboratory Science AH
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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

AWRAMIK, STANLEY M. Adjunct Professor, Department of Earth and Biological Sciences SM
Ph.D. Harvard University 1973

AXENE, DEBORAH A. Assistant Professor, Department of Oral Diagnosis, Radiology, and Pathology SD
D.M.D. University of Manitoba, Canada 2001

AYE, LYDIA L. Assistant Professor, Department of Medicine
D.O. Western University of Health Science 2006

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 Member 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. Instructor, Department of Communication Sciences and Disorders AH
M.S. University of Redlands 1987

BADAUT, JEROME. Assistant Professor, Department of Pediatrics SM and Department of Basic Sciences 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. Associate 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, School of Public Health 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, WINETTA. Assistant Professor, Department of Counseling and Family Science BH and Member FGS
Ph.D. Loma Linda University ST 2006

BAKLAND, LEIF KRISTIAN. Clinical Professor, Department of Endodontics SD and Member FGS
D.D.S. Loma Linda University SD 1963

BAKHSH, KHAZENAY K. Instructor, Department of Medicine SM
D.O. Western University of Health Sciences, Pomona, California 2010

BALAGOPALAN, MOHAN. Clinical Instructor, School of Public Health PH
M.B.A. Azusa Pacific University 1984

BALDWIN, DALTON Duane. Professor, Department of Urology SM
M.D. Loma Linda University SM 1991

BALDWIN, STANLEY. Adjunct Assistant Professor, Department of Cardiopulmonary Sciences AH
M.B.A. Pepperdine University 1985

BALGUMA, FREDDIE B. Associate Clinical Professor, Department of Pediatrics SM
M.D. University of Santo Tomas, Philippines 1962

BALL, LAUREN R. Assistant Clinical Professor, Department of Social Work and Social Ecology BH
M.S.W. Loma Linda University ST 1995

BALLI, KEVIN C. Assistant Professor, Department of Gynecology and Obstetrics SM
M.D. Loma Linda University SM 1998

BALLOU, MICHELLE M. Assistant Professor of Nursing SN
M.S. Loma Linda University SN 1992

BANDY, KRISTEN R. Assistant Professor, Department of Anesthesiology SM
M.D. Loma Linda University SM 2005

BANE, MARGUERITE. Assistant Clinical Professor, Department of Pharmacy Practice SP
B.S. Midwestern University, 1995

BANKS, JOHN C., Jr. Associate Professor, Department of Pathology and Human Anatomy SM
Ph.D. Loma Linda University GS 1984

BANNOUT, FIRAS. Assistant Professor, Department of Neurology SM
M.D. University of Damascus 2001

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

BANSIL, NELSON H. Instructor, Department of Emergency Medicine SM
D.O. Western University of Health Sciences, Pomona, California 2006

BANTA, JIMMIE E., JR. Associate Professor, School of Public Health PH and Member FGS
Ph.D. University of California, Los Angeles 2004

BARCEGA, BESH R. Assistant Professor, Department of Emergency Medicine SM, Department of Pediatrics SM. and Department of Basic Sciences SM
M.D. Loma Linda University SM 1990

BARILLA, DORA J. Assistant Professor, School of Public Health PH
Dr.P.H. Loma Linda University PH 2008

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 Surgery SM
M.D. University of Antioquia, Columbia 1977

BARR, HEATHER M. Assistant Clinical Professor, Department of Pediatrics SM
M.D. Creighton University, Nebraska 2007

BARR, STEVEN J. Assistant Clinical Professor, Department of Anesthesiology SM
M.D. Creighton University, Nebraska 2007

BARRERA, ADOLFO J. Assistant Professor, Department of Pediatric Dentistry SD
M.S. Loma Linda University 1996
D.D.S. Universidad Cayetano Heredia, Peru 1984

BARRETT, DWIGHT. Assistant Professor, School of Public Health PH
Ed.D. La Sierra University 2010

BARRIO, JUAN. Assistant Professor, Department of Medicine SM
M.D. University of California, San Diego 1997

BARTLEY, YESSENIA T. Assistant Professor, School of Public Health PH
Dr.P.H. Loma Linda University PH 2010
M.D. Major National University of San Marcos School of Medicine 2003

BARTNIK-OLSON, BRENDA L. Assistant Professor, Department of Radiology SM and Department of Basic Sciences SM
Ph.D. University of Saskatchewan, Canada 2002

BARTON, LORAYNE. Adjunct Associate Professor, School of Public Health PH
M.P.H. Loma Linda University PH 2000
M.D. University of California, Irvine 1966

BARTOS SPECHT, REBEKAH. Assistant Professor, Department of Medical Education SM and Department of Medicine SM
M.S.N. Azusa Pacific University 2001

BASMAJIAN, HRAYR G. Assistant Professor, Department of Orthopaedic Surgery SM
M.D. The Chicago Medical School 2006

BASHKIROV,VLADIMIR. Associate Research Professor, Department of Basic Sciences SM and Department of Radiation Medicine SM
Ph.D. Moscow Institute of Physics and Technology, Russia 1997

BASHTAR, REZA. Assistant Professor, Department of Medicine SM
M.D. Shahid Behesti University of Medical Sciences, Iran 2004

BASSHAM, CLARK E.F. Adjunct Assistant Professor, Department of Dental Education Services SD
D.D.S. Loma Linda University SD 2011

BASICAL-OLIVER, NOVE A. Instructor, Department of Clinical Laboratory Science AH
B.S. Loma Linda University AH 1986

BASIT, JONATHAN K. Adjunct Assistant Professor, Department of Dental Education Services SD
D.D.S. Loma Linda University SD 2011

BASTA, SAEDA H. Assistant Professor, Department of Restorative Dentistry SD
D.D.S. Damascus University Dental School, Syria 1994

BASU, SOMNATH. Assistant Professor, Department of Radiology SM
M.D. Chicago Medical School 2005

BATESOLE, MARK KENNETH. Assistant Professor, Department of Orthodontics SD
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M.S. Loma Linda University GS 2000

BATES, BRIAN E. Assistant Professor, Department of 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

BAUER, JANET G. Professor, Department of Dental Educational Services SD
D.D.S. University of Southern California 1975
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BAUGH, WILSON B., JR. Assistant Clinical Professor, Department of Oral and Maxillofacial Surgery SD
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BAUM, MARTI F. Assistant Professor, Department of Pediatrics SM
M.D. Loma Linda University SM 1979

BAUTISTA, LINDSAY N. Assistant Professor, Department of Pediatrics SM
M.D. Loma Linda University SM 2010

BAYDALA, LARYSA O. Assistant Professor, Department of Dental Education Services SD
B.S. Loma Linda University SD 2007

BAYLINK, DAVID J. Distinguished Professor, Department of Medicine SM and Department of Basic Sciences SM; Professor, Department of Dental Education 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-HARDY, LISA M. Adjunct Professor, School of Public Health PH; Adjunct Assistant Professor, School of Religion SR
Ph.D. University of Hawaii, Manoa 1989

BECKFORD, ANDREA L. Assistant Professor, Department of Restorative Dentistry SD
D.D.S. Loma Linda University SD 2005

BECKWITH, J. BRUCE. Adjunct Professor, Department of Pathology and Human Anatomy SM
M.D. University of Washington School of Medicine 1958

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 Pharmacy Practice 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. Professor, School of Public Health, Member 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. Assistant Professor, Department of Ophthalmology SM
M.D. Loma Linda University SM 2004

BELEN, NENITA P. Assistant Clinical Professor, Department of Psychiatry SM
M.D. University of Santo Tomas, Philippines 1967

BELIN, LYNNA SUE. Adjunct Assistant Professor, School of Public Health PH
Ph.D. Claremont Graduate School 1994

BELLIARD, JUAN C. Associate Professor, School of Public Health PH
Ph.D. Claremont Graduate University 2002

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, School of Public Health PH
M.P.H. Loma Linda University PH 2007

BENNER, JANINE G. Assistant Professor, Department of Communication Sciences and Disorders AH
M.A. California State University, Long Beach 1991

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, School of Public Health PH
J.D. Massachusetts School of Law 2005

BENNETT, JACK L. Clinical Instructor, Department of Surgery SM
M.D. Loma Linda University SM 1962

BERK, LEE S. Associate Professor, Department of Allied Health Studies AH and Department of Physical Therapy AH; and Member FGS
Dr.P.H. Loma Linda University PH 1981

BERNAL, GUILLERMO D. Adjunct Professor, Department of Restorative Dentistry SD
D.D.S. San Cristobal Hospital, Puerto Rico 1988

BERNSTEIN, BASIL G. Clinical Professor, Department of Psychiatry SM
M. D. New York Medical College 1967

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 BH, Member FGS

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BEVERLY, DAVID T. Adjunct Assistant Professor, Department of Ophthalmology SM
M.D. Uniformed Services, University of Health Sciences, Bethesda, Maryland 1998

BHAT, VENKATESH G. Associate Professor, Department of Psychiatry SM
M.B.B.S. University of Mysore, India 1979

BHATTI, USMAN. Assistant Clinical Professor, Department of Pharmacy Practice SP
Pharm.D. Purdue University, Lahore, Pakistan 2006

BHOJRAJ, SANJAY D. Assistant Professor, Department of Medicine SM
M.D. Indiana University School of Medicine 2002

BIAGGI, ROBERTO E. Adjunct Assistant Professor, Department of Earth and Biological Sciences PH
Ph.D. Loma Linda University FGS 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
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BILLIMORIA, PHIROZE E. Emeritus Professor, Department of Radiology SM
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BIN HUMRAN, MOHAMMED S. Instructor, Department of Cardiopulmonary Sciences AH
B.S. Boise State University 2002

BINUS, DANIEL L. Assistant Clinical Professor, Department of Psychiatry SM
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BISCHOFF, FREDERICK M. Assistant Clinical Professor, School of Public Health PH and Department of Preventive Medicine SM
M.P.H. Loma Linda University PH 1983
M.D. Loma Linda University SM 1979

BISCHOFF, JOANN K. Adjunct Assistant Professor, Department of Medicine SM
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M.B.B.S. University of South Hampton UK 1997

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KARAGYOZYAN, YREVAN M. Assistant Professor, Department of Restorative Dentistry SD
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M.D. Drexel University 2004

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KATSAROS, EMMANUEL P. Associate Professor, Department of Medicine SM
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KAZANJIAN, KAREN M. Assistant Professor, Department of Radiology SM
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KAZANJIAN, KEVORK K. Associate Professor, Department of Surgery SM
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SEVANESIAN, DEZIREH. Assistant Professor, Department of Dental Anesthesiology SD
D.D.S. Herman Ostrow School of Dentistry, University of Southern California 2008

SHAH, HUMA I. Assistant Professor, School of Public PH
Dr.P.H. Loma Linda University PH 2011

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

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 Informatics and Information Management AH
M.A. Central Michigan University 1982

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

SHAKHMALIAN, EDWIN. Assistant Clinical Professor, Department of Pharmacy Practice SP
Pharm.D. University of the Pacific 2003

SHAMMO, JOHNNY B. Assistant Clinical Professor, Department of Restorative Dentistry SD
D.D.S. Loma Linda University SD 2008

SHANK, CHRISCHELLE L. Assistant Professor, Department of Family Medicine SM
M.D. Loma Linda University SM 2004

SHANK, GREGORY SCOTT. Assistant Professor, Department of Surgery SM
M.D. Loma Linda University SM 1999

SHANKEL, TAMARA MICHELLE. Associate Professor, Department of Pediatrics SM and Department of Medical Education SM
M.D. Loma Linda University SM 1988

SHANNON, KEVIN C. Associate Professor, Department of Family Medicine SM
M.D. University of Illinois College of Medicine 1985

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

SHARIP, AKBAR. Associate Professor, Department of Preventive Medicine SM and School of Public Health PH
M.P.H. University of California, Los Angeles 2003
M.D. Xian Medical University, China 1995

SHARKEY, JEANNINE. Adjunct Assistant Professor, School of Nursing SN
M.S.N. California State University, Long Beach 1995

SHARMA, ASHISH P. Clinical Instructor, Department of Oral and Maxillofacial Surgery SD
B.D.S. Christian Dental College, India 2003
M.S.D. Loma Linda University SD 2014

SHARMA-ARORA, AKANKSHI A. Adjunct Assistant Professor, School of Public Health 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

SHARP, LORRA M. Assistant Professor, Department of Orthopaedic Surgery SM
M.D. University of Southern California Keck School of Medicine 2005

SHATTUCK, O. HOWARD. Instructor, Department of Cardiovascular and Thoracic Surgery SM
B.S. The Johns Hopkins University 1977

SHAVLIK, DAVID JOSEPH. Assistant Professor, School of Public Health PH
M.P.H. Loma Linda University PH 1997

SHAW, KATHRYN J. Assistant Clinical Professor, Department of Gynecology and Obstetrics SM
M.D. University of Southern California 1983

SHEDD, JOANNA. Assistant Professor, School of Nursing SN
M.S. Loma Linda University SN 2013

SHELDON, RICHARD L. Clinical Professor, Department of Medicine SM

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SHENG, MATILDA. Assistant Research Professor, Department of Medicine SM and Department of Basic Sciences SM
Ph.D. Virginia Polytechnic Institute and State University 1996

SHENG, NEHA D. Assistant Professor, Department of Cardiovascular and Thoracic Surgery SM
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SHEPARD, ANDREW. Assistant Professor, Department of Radiation Technology AH
M.S.R.S. Loma Linda University AH 2011

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SHERIDAN, ALLAN. Assistant Professor, Department of Orthodontics SD
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SHERIDAN, FRANK P. Assistant Clinical Professor, Department of Pathology and Human Anatomy SM
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SHERIDAN-MATNEY, CLARE M. Associate Professor, Department of Pediatrics SM
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SHERMAN, MARK D. Assistant Clinical Professor, Department of Ophthalmology SM
M.D. Albert Einstein Medical College 1985

SHERWIN, THOMAS S. Associate Professor, Department of Emergency Medicine SM
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SHETH, RITA. Assistant Professor, Department of Pediatrics SM
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SHI, VICTOR WEI DONG. Assistant Professor, Department of Radiology SM
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SHI, WEI-XING. Professor, Department of Pharmaceutical and Administrative Sciences SP and Member FGS
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SHIBATA, BROOKE M. Instructor, Department of Dental Hygiene SD
B.S. Loma Linda University SD 2011

SHIE, JOHN M. Assistant Professor, Department of Gynecology and Obstetrics SM
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SHIFFLER, PARKER D. Clinical Instructor, Department of Oral and Maxillofacial Surgery SD
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SHIH, GARY W. Assistant Professor, Department of Anesthesiology SM
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SHIMABUKURO, KOZUE. Assistant Professor, Department of Pediatrics SM
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SHIN, ELISA H. Assistant Professor, Department of Restorative Dentistry SD
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SHIN, EUN-AH G. Assistant Clinical Professor, Department of Restorative Dentistry SD
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SHIN, MICHELLE M. Instructor, Department of Pediatric Dentistry SD
D.D.S. Loma Linda University SD 2012

SHIU, WILFRED W. Assistant Clinical Professor, Department of Preventive Medicine SM
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SHOJI, HIROMU. Clinical Professor, Department of Orthopaedic Surgery SM
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SHOOK, JAMES E. Associate Professor, Department of Orthopaedic Surgery SM
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SHRADER, JOHN A. Assistant Professor, Department of Medicine SM
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SHU, STANFORD K. Assistant Professor, Department of Pediatrics SM
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SIAPCO, GINA S. Associate Professor, School of Public Health PH
Dr.P.H. Loma Linda University PH 2004

SICCAMA, MELISSA D. Assistant Professor, Department of Pediatrics SM
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SIDDIGHI, SAM. Assistant Professor, Department of Gynecology and Obstetrics SM and Department of Basic Sciences SM
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SIEGERT, SCOTT W. Assistant Clinical Professor, Department of Pharmacy Practice SP
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SILBERSTEIN, JEANNE F. Assistant Clinical Professor, School of Public Health PH
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SILER, SHAUNNA. Assistant Professor, School of Nursing, SN
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SILSTON, STEPHEN MICHAEL. Assistant Professor, Department of Periodontics SD
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SILVA, VASTHI VIVIAN. Assistant Professor, Department of Medicine SM
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SILVESTRIN, TORY L. Instructor, Department of Endodontics SD
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SILVET, HELME. Assistant Professor, Department of Medicine SM
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SIMON, DIANNA J. Emeritus Associate Professor, Department of Social Work and Social Ecology BH
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SIMPSON, LINDSEY M. Instructor, Department of Cardiopulmary Sciences AH
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SMITH, JODI O. Assistant Clinical Professor, Department of Ophthalmology SM
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SMITH, ROBERT T. Assistant Professor, Department of Medicine SM
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SMITH, SCOTT C. Assistant Professor, Department of Oral Diagnosis, Radiology, and Pathology SD
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SNIDER, DOUGLAS H. Adjunct Assistant Professor, Department of Endodontics SD
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SOEPRONO, FRED F. Associate Professor, Department of Dermatology SM
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SOLAROGLU, IHSAN. Adjunct Research Professor, Basic Sciences SM
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SOLOMON, NAVEENRAJ L. Assistant Professor, Department of Surgery SM
M.D. Loma Linda University SM 2003

SOLOMON, TABITHA E. Assistant Professor, Department of Pediatrics SM
M.P.H. Mercer University, Georgia 2005
M.D. PSG Institute of Medical Sciences and Research, India 2001

SONAWALA, MEHUL S. Instructor, Department of Medicine SM
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SONEJI, MAULIN S. Assistant Professor, Department of Pediatrics SM and Department of Medicine SM
M.D. St. Louis University School of Medicine 2006

SONG, KI (KEITH) Y. Assistant Clinical Professor, Department of Dental Educational Services SD
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SONNE, JANET L. Adjunct Professor, Department of Psychology BH
Ph.D. University of California, Los Angeles 1981

SORAJJAKOOL, SIROJ. Professor, School of Religion SR, Department of Counseling and Family Science BH, and Member FGS
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SORENSON, PATRICIA M. Assistant Clinical Professor, School of Nursing SN
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SORET, SAMUEL. Associate Professor, School of Public Health PH and Department of Earth and Biological Sciences SM
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SORIANO CASTELL, SALVADOR S. Associate Professor, Department of Pathology and Human Anatomy SM and Department of Basic Sciences SM
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SORRELS, RONALD L. Assistant Professor, Department of Restorative Dentistry SD
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SOTO-WEGNER, UBALDO A. Assistant Research Professor, Department of Basic Sciences SM and Member FGS
Ph.D. Catholic University of Chile 1994

SOUZA, ANDREW T. Instructor, Department of Pediatrics SM
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SOWERS, LAWRENCE C. Adjunct Professor, Department of Basic Sciences SM and Department of Medicine SM
Ph.D. Duke University, North Carolina 1983

SPACKMAN, SUE S. Associate Professor, Department of Restorative Dentistry SD
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SPARKS, STEVEN R. Associate Professor, Department of Cardiovascular and Thoracic Surgery SM
M.D. University of Cincinnati Medical School 1986

SPEARMAN, CHARLES B. Assistant Professor, Department of Cardiopulmonary Sciences AH
M.S. University of Southern California 1994

SPECHT, N. LENNARD. Assistant Professor, Department of Medicine SM and Department of Cardiopulmonary Sciences AH
M.D. Loma Linda University SM 1983

SPENCER-HWANG, RHONDA K. Assistant Professor, School of Public Health PH
Dr.P.H. Loma Linda University PH 2009

SPENCER-SAFIER, MICHELLE M. Assistant Professor, Department of Pharmacy Practice SP
Pharm.D. University of Michigan 1995

SPENCER-SMITH, E. LAURENCE. Assistant Clinical Professor, Department of Gynecology and Obstetrics SM
M.D. Loma Linda University SM 1982

SPICER, MARK A. Assistant Professor, Department of Neurosurgery SM
M.D. Yale University 1997
Ph.D. University of London 1988

SPRAGUE, JAY H. Adjunct Assistant Professor, Department of Dental Educational Services SD
D.D.S. Loma Linda University SD 1962

SPRENGEL, JEAN E. Assistant Clinical Professor, Department of Anesthesiology SM
M.D. Loma Linda University SM 1981

SRIKUREJA, WICHIT. Adjunct Assistant Professor, Department of Medicine SM
M.D. Loma Linda University SM 1997

SRINIVASAN, BALACHANDRAN D. Clinical Professor, Department of Ophthalmology SM

M.D. Columbia University 1967

SRISKANDARAJAH, MALATHY. Assistant Professor, Department of Medicine SM
M.D. University of Colombo, Sri Lanka 1979

STAACK, ANDREA. Associate Professor, Department of Urology SM
M.D. Humboldt University Charite, Berlin, Germany 1999

STACEY, DESMOND GRAHAM CHARLES. Assistant Professor, Department of Dental Education Services SD and School of Religion SR
Ph.D. Loma Linda University GS 1999

STANDISH, TIMOTHY G. Adjunct Associate Professor, Department of Earth and Biological Sciences SM
Ph.D. George Mason University 1994

STANISAI, MEERWEIS. Assistant Professor, Department of Restorative Dentistry SD
D.D.S. Loma Linda University SD 2000

STANTON, DAVID MORGAN. Assistant Professor, Department of Cardiopulmonary Sciences AH
M.S. Loma Linda University GS 1991

STAPLES-EVANS, HELEN MURIEL. Assistant Professor, School of Nursing SN
M.S. Loma Linda University GS 1984

ST. CLAIR, JENNIFER C. Assistant Professor, Department of Communication Sciences and Disorders AH
M.S. Loma Linda University GS 1999

STARICKA, MELISSA A. Instructor, Department of Family Medicine SM
M.N. University of Washington 2001

STEELE, ROBERT C. Associate Professor, Department of Emergency Medicine SM
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 L. Assistant Professor, Department of Dental Education Services SD
D.M.D. University of Florida 1980
M.P.H. Loma Linda University PH 1992

STEINMANN, JOHN C. Assistant Clinical Professor, Department of Orthopaedic Surgery SM
D.O. College of Osteopathic Medicine of the Pacific 1986

STEPHENS, ERIN E. A. Assistant Professor, Department of Oral Diagnosis, Radiology, and Pathology SD
D.D.S. Loma Linda University SD 2010

STEPHENS, JONELLE A. Emerita Professor, Department of Dental Hygiene SD
Ed.S. Loma Linda University SE 1982

STEPIEN, BETTY. Assistant Professor, Department of Medicine SM
M.D. University of California, Los Angeles Medical School 1999

STEVENS, WESLEY T. Assistant Professor, Department of Pathology and Human Anatomy SM
M.D. Loma Linda University SM 2000

STEWART, CHARLES EUGENE IV. Assistant Professor, Department of Otolaryngology and Head and Neck Surgery SM
M.D. Loma Linda University SM 1970

STEWART, CHARLES EUGENE III. Associate Professor, Department of Otolaryngology and Head and Neck Surgery SM
M.D. Loma Linda University SM 1970

STEWART, GAIL MARIE. Associate Professor, Department of Emergency Medicine SM
D.O. Michigan State University 1980

STEWART, MARK. Assistant Clinical Professor, School of Public Health PH
M.S. University of North Texas, 1994

STEWART, STEVEN C. Clinical Professor, Department of Urology SM
M.D. Loma Linda University SM 1971

STEWART, SYLVIA DIANNE. Assistant Professor, School of Nursing SN
Ph.D. Claremont Graduate School 1993

STEWART. TANIA LUCINIAN. Assistant Professor, Department of Pharmacy Practice SP
Pharm.D. Loma Linda University SP 2009

STIER, GARY R. Associate Professor, Department of Anesthesiology SM
M.D. Loma Linda University SM 1983

STILSON, CARL B. Assistant Professor, Department of Emergency Medicine SM
M.D. University of California, Irvine 1974

STINNETT, RANDY M. Assistant Professor, Department of Family Medicine SM
Psy.D. Loma Linda University ST 2010

STIREWALT-BOGGS, SHARON A. Instructor, Department of Dental Hygiene SD
B.S. Loma Linda University SD 1993

STOCKDALE, JOHN C. Assistant Clinical Professor, Department of Psychiatry SM
M.D. Loma Linda University SM 1958

STOLETNIY, LISET N. Associate Professor, Department of Medicine SM
M.D. Facultad de Medicina Montevideo, Uruguay 1985

STORFJELL, JUDITH L. Professor, Nursing SN
Ph.D. University of Michigan 1987

STORKERSEN, KRIS J. Assistant Professor, Department of Ophthalmology SM
M.D. University of California, Davis 1989

STOTTLEMYER, DEBRA D. Associate Clinical Professor, Department of Medicine SM
M.D. Loma Linda University SM 1986

STRAND, PETER F. Assistant Professor, Department of Orthodontics SD
D.D.S. University of California, Los Angeles 1972

STREELMAN, MATTHEW T. Assistant Professor, Department of Restorative Dentistry SD
D.D.S. Loma Linda University SD 2011

STRILAEFF, DYONNE R. Instructor, Department of Dental Hygiene SD

B.S. Loma Linda University SD 2004

STRINGER, DALE E. Professor, Department of Oral and Maxillofacial Surgery SD
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STROMBERG, ANN H. Adjunct Professor, School of Public Health PH
M.P.H. Loma Linda University PH 2005
Ph.D. Cornell University, New York 1980

STRONG, DONNA DEE. Research Professor, Department of Medicine SM and Department of Basic Sciences SM
Ph.D. University of California, Los Angeles 1977

STRONG, RICHARD MERLE. Associate Clinical Professor, Department of Medicine SM
M.D. University of California, Irvine 1975

STROUP, STACY R. Clinical Instructor, Department of Periodontics SD
B.S. Loma Linda University SD 2010

STRUM, SCOTT RUSSELL. Associate Professor, Department of Physical Medicine and Rehabilitation SM
M.D. Loma Linda University SM 1990

STRUTZ, JUDITH M. Associate Professor, Department of Restorative Dentistry SD
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

SU, JUI-MIN. Assistant Professor, Department of Restorative Dentistry SD
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SU-ERICKSON, DIANA B. Clinical Instructor, Department of Occupational Therapy AH
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SULZLE, HOWARD W. Assistant Professor, Department of Physical Therapy AH
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SUN, CHAO HUANG. Assistant Clinical Professor, Department of Medicine SM
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SUN, CHRISTINE H. Assistant Professor, Department of Medicine SM
M.D. Loma Linda University SM 2005

SUN, CHUN XIAO. Associate Professor, Department of Periodontics and Associate Member FGS
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M.S. Zhejiang Medical University, China 1995
D.M.D. Zhejiang Medical University, China 1992

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SUN, RICHARD S.W. Assistant Professor, Department of Basic Sciences SM and Department of Pharmaceutical and Administrative Sciences SP
Ph.D. National Yang-Ming University, Taiwan 2002

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D.D.S. Loma Linda University SD 2007

SUTHAR, MUKESH B. Assistant Professor, Department of Ophthalmology SM
M.D. University of Southern California 1993

SUTJITA, MADE. Associate Professor, Department of Medicine SM
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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
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SWABB, RICHARD JOHN. Assistant Professor, Department of Medicine SM
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SWEENEY, THOMAS J. Assistant Clinical Professor, School of Nursing SN
M.S. State University of Stony Brook 1994

SWEN, R. WESLEY. Assistant Professor, Department of Physical Therapy AH
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SWENSON, TERRY R. Assistant Professor, School of Religion SR
D.Min. George Fox University Evangelical Seminary 2009

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M.D. University of California, Los Angeles 2004

SYMS, JAMES M. Assistant Professor, Department of Physical Therapy AH
M.P.T. Loma Linda University AH 1995

TABISULA, BRADEN MICHAEL B. Assistant Professor, Department of Health Informatics and Information Management AH
M.B.A. University of Redlands 2012

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M.D. Georgetown University School of Medicine 1992

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M.D.

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General Information

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School Administrations, Committees, and Affiliations

Key to codes

AH	School of Allied Health Professions
BH	School of Behavioral Health
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
FGS	Faculty of Graduate Studies

School of Allied Health Professions

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Everett Lohman
David Lopez
Helen Martinez
Ehren Ngo
Kisha Norris
Jaclyn Pruehs
Rodney Roath
Ernest Schwab
Renee Stone
Grenith Zimmerman
President*

* ex officio

Admissions Committee

Edd Ashley, Chair
Charles Dart
Craig Jackson
Helen Martinez
Dean, Student Affairs*
Department chairs
President*
Special assistant to the president—diversity

* ex officio

Clinical Coordinators Committee

Steve Leber, Chair
Carol Appleton
Pauline Calla
Yasmin Chene
Intithar Elias
Erma Ezpeleta
Margaret Frank
Kate Gattuso
Monique Gilbert
Gerald Glavaz
Craig Jackson
Theresa Joseph
Dolly Kisinger
Arthur Marshak
Pamela Mermon
Judith Palladino
Sharon Pavlovich
Brian Sharp
Andrew Shepard
Lindsey Simpson
Howard Sulzle
Maxine Taylor

Diversity Committee

Antonio Valenzuela, Chair
Craig Austin

Nicceta Davis
Esther Huecker
Craig Jackson*
Keiko Khoo
David Lopez
Helen Martinez
Howard Sulzle
Special assistant to the president--diversity
Student representatives (4)

* ex officio

Faculty Council

Georgia Hodgkin, Chair
Terry Douglas
Craig Jackson*
Ghina Katrib
Cindy Kosch
Sharon Pavlovich
Rodney Roath
Terri Rouse
Tim Seavey

School of Behavioral Health

Administration—BH

BEVERLY BUCKLES, D.S.W., Dean
MIRIAM A. DOMINGO, M.B.A., Associate Dean for Finance and Administration
COLWICK M. WILSON, Ph.D., Associate Dean for Academic Affairs

Department chairs—BH

BEVERLY BUCKLES, D.S.W., Chair, Social Work and Social Ecology
KIMBERLY FREEMAN, Ph.D., Executive Associate Chair, Social Work and Social Ecology
DAVID VERMEERSCH, Ph.D., Interim Chair, Psychology
DANIEL K. KIDO, M.D., Chair, Biophysics and Bioengineering
CURTIS A. FOX, Ph.D., Chair, Counseling and Family Sciences

Committees—BH

Academic Standards Committee

Kevin Nick, Chair
Curtis Fox
Kimberly Freeman
Paul Haerich
Henry Lamberton
Karen Lesniak
Carmen Knudson-Martin
Froylana Miller
Mary Moline
Cheryl Simpson
David Vermeersch

Administrative Council

Beverly Buckles, Chair
Richard Davidian
Miriam Domingo
Marilyn Eggers
Terry Forrester
Kim Freeman
Mary Moline
David Vermeersch
Colwick Wilson

Assessment

Beverly Buckles, chair
Adam Arechiga
Beverly Buckles
Curtis Fox
Kim Freeman
Paul Haerich
Doug Huenergardt
Carmen Knudson-Martin
Froylana Miller
Michelle Minyard-Widmann
Mary Moline
Dianna Simon
Cheryl Simpson
Dave Vermeersch

Executive Committee

Beverly Buckles, Chair
Kim Freeman
Mary Moline

Institutional Review Board (IRB)

Kelly Morton, chair
Curtis Fox
Linda Halstead
Rich Hartman
Narineh Hartoonian (graduate student)
Sigrid James
Jason Owen

Rank and Tenure Committee

Doug Huenergardt, Chair
Ian Chand
Kim Freeman
Paul Haerich
Synnove Knutsen
Mary Moline
Christine Neish

Clinical affiliates—BH

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

School of Dentistry

Administration—SD

RONALD J. DAILEY, Ph.D., M.A., Dean
ROBERT HANDYSIDES, D.D.S., Associate Dean, Academic Affairs
STEVEN G. MORROW, D.D.S, M.S., Assistant Dean, Advanced Specialty Dental Education
PAUL L. RICHARDSON, D.D.S., M.S.Ed., Associate Dean, Clinic Administration
D. GRAHAM STACEY, Ph.D., M.S., M.A., Associate Dean, Student Affairs
JOSEPH M. CARUSO, D.D.S., Associate Dean, Strategic Initiatives and Faculty Practices
FRED C. KASISCHKE, D.Min., Associate Dean, Admissions, Pastoral Ministry and Service Learning
JOHN C. BURDICK, M.B.A., Associate Dean, Financial Administration
RACHEL TERWILLEGAR, B.A., Director of Development

Committees—SD

Academic Review
Admissions
Awards
Clinical Quality Assurance
Communicable Disease Control
Curriculum
Dental Research
Diversity
Executive
Faculty Council
Faculty Development
Faculty Promotions
Graduate

Nominating
Outcomes Assessment
Professional Standards
Safety
Service Learning and International Affairs
Spiritual Life and Wholeness
Treatment of Tobacco-Dependent Patients

School of Medicine

Administration—SM

H. ROGER HADLEY, M.D., Dean and Vice President for Medical Affairs, LLUAHSC
TAMARA L. THOMAS, M.D., Vice Dean for Academic Affairs; Associate Dean for Faculty Development
LEONARD S. WERNER, M.D., Senior Associate Dean for Medical Student Education
DANIEL W. GIANG, M.D., Associate Dean for Graduate Medical Education
SARAH M. RODDY, M.D., Associate Dean for Admissions and Recruitment
HENRY L. LAMBERTON, Psy.D., Associate Dean for Student Affairs
ALICE A. WONGWORAWAT, M.B.A., Assistant Dean for Finance and Administration
JAMES M. PAPPAS, M.D., Associate Dean for Quality and Patient Safety
RICARDO L. PEVERINI, M.D., Vice Dean for Clinical Affairs; Associate Dean for Clinical Faculty
LEROY E. REESE, M.D., Associate Dean for Los Angeles Programs
TAMARA M. SHANKEL, M.D., Associate Dean for Clinical Education
PENELOPE J. DUERKSEN-HUGHES, Ph.D., Associate Dean for Basic Sciences and Translational Research
HANSEL M. FLETCHER, Ph.D., Assistant Dean for Graduate Student Affairs
DAVID G. WREN, M.H.A., Associate Dean, Faculty Practice Affairs
LYNDA DANIEL-UNDERWOOD, M.D., Assistant Dean for Program Development and Evaluation; 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
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

Academic Review Committee
Admissions Committee
Basic Science and Translational Research Executive Committee
Basic Science Faculty Advisory Council
Clinical Faculty Executive Committee
Clinical Science Faculty Advisory Council
Curriculum Committee
Dean's Administrative Council
Executive Committee
Medical Affairs Collaborative Committee
Professionalism Committee
Promotions Committee
Spiritual Life and Wholeness Committee
Student Technology Committee
Tenure Committee

School of Nursing

Administration—SN

MARILYN M. HERRMANN, Ph.D., RN, Dean
ELIZABETH BOSSERT, Ph.D., Associate Dean, Academic Affairs and Graduate Nursing
DYNNETTE HART, Dr.P.H., Associate Dean, Student Affairs, Undergraduate Nursing
JUDITH L. STORFJELL, Ph.D., RN, Associate Dean, Practice and Research
JOANN SHAUL, CPA, Assistant Dean, Finance and Administration
PATRICIA S. JONES, Ph.D., Director, Office of International Nursing
HEATHER KRAUSE, Director, Admissions, Recruitment, and Marketing
SUSAN LLOYD, Ph.D., Director of Doctoral Nursing Practice Program
NANCIE PARMENTER, Ed.D., Director of RN to BS Program
PATRICIA POTHIER, Ph.D., Director of Ph.D. Program
BETTY J. WINSLOW, Ph.D., Research Director
ZELNE L. ZAMORA, D.N.P., 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

Faculty-voted 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
Addus HealthCare, Inc., Riverside
Advanced Women's Healthcare
Adventist Health, Roseville

Adventist Health System, Florida
Allied Professional Nursing Care, Upland
Alfaro-McField, Edgar, M.D., San Bernardino
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
Asia Pacific International University
Aspen Medical Group, Inc., Riverside

Bear Valley Community Health Care District, Big Bear Lake
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, PasadenaCharter 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
Clinicas de Salud Del Pueblo, Inc., Brawley
Clinica Salud & Familia, Pomona
Coachella Valley Volunteers in Medicine, Indio
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
County of San Bernardino, Public Health Department

DASH, The Other Place, Redlands
Delta Hospice of California, Chino
Desert Valley Hospital, Victorville
Desert VIP Urgent Care, Palm Desert

Eisenhower Hospital, Rancho Mirage
Empire Medical Center, San Bernardino
Etiwanda School District, Etiwanda

Fallbrook Health Center Family Practice and Urgent Care
Fontana Family Medical Center, Fontana
Fontana Unified School District, Fontana
Fullerton College

Garden Pediatrics, Redlands
Glendale Adventist Medical Center, Glendale
G.R.I.T. (Gang Reduction Intervention Team), Redlands

Hemet Unified School District, Hemet
Heritage Gardens, Loma Linda
Hoag Memorial Hospital Presbyterian, Newport Beach
Hurwitz, Dr. Kathleen, Murrieta

Inland Empire Home Health & Hospice, Hemet
Inland Regional Center, San Bernardino
Inland Temporary Homes, Loma Linda
Inland Valley Hospice, Riverside
Inland Valley Urgent Care Clinic, Lake Elsinore
Inscriptions Children's Clinic, Wildomar
In Your Best Interest, Steven Wilson, MD, Redlands

Jefferson Transitional Program, Riverside
Jurupa Unified School District, Riverside

Kaiser Permanente-Pasadena, Pasadena
Kaiser Permanente-Fontana, Fontana
Kaiser Permanente-Riverside, Riverside
Dr. Kanakriyeh, Pediatric Cardiology Specialist, San Bernardino
Kanye SDA College of Nursing, Kanye, Botswana
Kettering Health Network
Kim, Dr. Dong, Moreno Valley
Knotts Family & Parenting Institute for Child, San Bernardino

Lake Elsinore Family Care Center, Lake Elsinore
Richard C. Lam, MD, INC., Temecula
Limon, Dr. Jose, Internal Medicine, Moreno Valley
Linda Valley Care Center and Linda Valley Villa, Loma Linda
Loma Linda Child & Adolescent Clinic, Loma Linda
Loma Linda Children's Center Day Care
LLUH Facilities:
- Loma Linda University, East Campus Hospital, Loma Linda
- Loma Linda University Medical Center, Loma Linda
- Loma Linda University Medical Center, Murrieta
- Loma Linda University Children's Hospital, Loma Linda
- Loma Linda University Health Care
- Loma Linda University Behavioral Medicine Center, Redlands

Loma Linda Academy, Loma Linda
Loma View Pediatric Medical Clinic, San Bernardino
Los Palmas OB/GYN, Rancho Mirage
Lone Tree Family Practice, Lone Tree, CO

Mackey, Dr. Timothy, Riverside
Manvelyan, Dr. Marina, Pasadena
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

Odyssey Health Care, San Bernardino
Oyemade, Dr. Olusola, Inc., Rancho Cucamonga

Paradise Valley Hospital, National City
Parent Care Management Services, Highland
Physicians for Healthy Hospitals, Inc. –
- Hemet Valley Medical Center, Hemet
- Menifee Valley Medical Center, Menifee

Planned Parenthood of the Pacific Southwest, San Diego
Providence Health System, Torrence (many sites)
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 Community College District
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

SAC Health System, San Bernardino
San Antonio Community Hospital, Upland
San Bernardino City Unified School District, San Bernardino
San Bernardino County Probation Department, San Bernardino
San Bernardino Medical Orthopaedic Group
San Gorgonio Memorial Hospital, Banning
San Jacinto Medical Clinic/ Urgent Care
San Joaquin Community Hospital, Bakersfield
Schwartz, Stanley H., Inc., Moreno Valley
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. Francis Medical Center, Lynwood
St. Joseph Hospital, Orange
Spanish Hills Medical Group, Oxnard
Specialty Internal Medicine, San Bernardino
Symonett Family Medical Center, Colton

Tenet Health System Desert, Inc., Palm Springs
The Village at University Park, Palm Desert
Totally Kids, Loma Linda

United Family Care, Fontana
UREACH, Loma Linda

VA Hospital, Loma Linda
VA Hospital Long Beach Health Care System, Long Beach
VA Medical Center West Los Angeles, Los Angeles
Valentine Medical Clinic, Riverside
Valley Women Care, Indio
Vander Wall, Dr. Jacquelyn, Los Alamitos
Ventura Urgent Care Center, Ventura
Veronica's Home of Mercy, San Bernardino
Vinod K. Valiveti, MD, Inc., Oxnard
Vista Community Clinic, Vista
Visiting Nurse Association of Inland Counties, Riverside
VNA and Hospice of Southern California, San Bernardino

Webb, Dr. Harry, Colton
Wellspan York Hospital , York, PA
White Memorial Medical Center, Los Angeles|
Laura Williams, MD, Murrieta

Young Visionaries Youth Leadership Academy – San Bernardino

School of Pharmacy

Administration—SP

W. WILLIAM HUGHES, Ph.D., Dean
RASHID MOSAVIN, 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., Associate Dean for Finance
LINDA M. WILLIAMS, M.S., Associate Dean for Student Affairs
WILLIE L. DAVIS, Ph.D., Chair, Department of Pharmaceutical and Administrative Sciences
JAVAD TAFRESHI, Pharm.D., Chair, Department of Pharmacy Practice
NAOMI FLOREA, Pharm.D., Director of Experiential and Continuing Education
JIM PINDER, J.D., M.B.A., Director of Academic Affairs
SHASTIN RAINS, M.A., Director of Enrollment and Alumni Affairs
JOHN NAFIE, M.B.A., Development Officer
DUANE TAN, M.A.T., Director of Academic Support

Committees—SP

Academic Standing
Accreditation Oversight
Admissions
Continuing Professional Education
Curriculum
Executive
Honors and Awards
International Pharmacy Outreach
Program Assessment
Promotion and Tenure

Affiliated/clinical facilities—SP

Adventist Health
Adventist Health Corporate Headquarters
Adventist Hinsdale Hospital
Adventist Medical Center, Hanford
Adventist Medical Center, Portland
AIDS Healthcare Foundation-AHF Pharmacy, Westside
Albertsons/SavOn/SuperValu
AmerisourceBergen
Antelope Valley Hospital
American Pharmacists Association
Arrowhead Regional Medical Center
Arroyo Grande Community Hospital
Avanir

Baptist St. Anthony Health System

Cal-Med Pharmacy
Cardinal Health
Caremark, Inc.
Celebration Health Anticoagulation Clinica
Centinela Hospital
Central Florida Regional Hospital
Children’s Hospital of Central California
Children’s Hospital of Orange County
Chino Valley Medical Center
Citrus Valley Medical Center
The Center for Inherited Blood Disorders Pharmacy
City of Hope
Community Hospital of San Bernardino
Consumer Health Information Corporation
Corona Regional Medical Center
Costco
Covidien Radiopharmacy Mallinckrodt
Cowdreys Van Owen Tower Pharmacy

CVS Pharmacy, Inc.

Desert Oasis Health Care
Desert Pharmacy
Desert Regional Medical Center
Desert Valley Hospital
Dignity Health

Family Practice
FDA (U.S. Food and Drug Administration)
Feather River Hospital
Federal Correctional Complex, Victorville
Flintridge Pharmacy
Florida Hospital
Fountain Valley Regional Hospital

Glendale Adventist Medical Center
Group Health Coop-Factoria Medical Center

Hanford Community Medical Center
Health Net Pharmaceutical Services
Heartland Regional Medical Center
Heritage Pharmacy
Hi Desert Medical Center
Hoag Memorial Hospital Presbyterian
Hong Kong Adventist Hospital
Huguley Memorial Medical Center

Indian Health Services
Inland Compounding Pharmacy
Inland Empire Health Plan
Inland Pharmacy
INNOVRX
Ionia Pharmacy

Kaiser Permanente
Kaweah Delta Medical Center
Kettering Medical Center
Kindred Healthcare, Brea
Kindred Hospital, Ontario
K-Mart

LLUAHSC
LLUMC
LLUMC clinical instructors

Marian Medical Center
Medical Center Pharmacy
Meiji Pharmacy
Memorial Hospital of Gardena

National Institutes of Health
Newport Lido Pharmacy
Newport Specialty Hospital
Niles Drug Store

OB Medical Supplies and Pharmacy
OptumRx

Pacific Healthcare, Inc.
Pacific Medical Pharmacy
Parke Vista Pharmacy
Parkview Medical Plaza Pharmacy
Presbyterian Intercommunity Hospital
Professional Compounding Centers of America

Ralphs Grocery
Rancho Drugs
Redlands Community Hospital
Regional Medical Center of San Jose
Riley's Pharmacy
Rite Aid Corporation
Riverside Community Hospital
Riverside County Regional Medical Center

Safeway/Vons
Sam's Club
San Gorgonio Memorial Hospital
San Joaquin Community Memorial Hospital
San Joaquin General Hospital
Savon
Scripps
Share Our Selves
SHARP
Shriners Children's Hospital, Los Angeles
Simi Valley Hospital
South Shore Hospital
St. Helena, Clearlake
St. Helena Hospital
St. Helena Hospital Center for Behavioral Health
St. Joseph Medical Center
St. Jude Children's Research Hospital, TN
St. Jude Medical Center
St. Mary Medical Center
Swedish Medical Center

Taipei Medical University-Municipal Wan Fang Hospital
Target Corporation
Torrance Memorial
Town Center Compounding Pharmacy
Triad Isotopes

United States Coast Guard
University of Florida

VA Central California Healthcare System
VA Greater Los Angeles Healthcare System
VA Loma Linda Healthcare System
Vail Ranch Pharmacy
Valley View Wellness Medical Clinic
ValleyCare Health System
Vons

Wahiawa General Hospital
Walgreens
Walla Walla General Hospital
Wal-Mart Corporation
Waterman Pharmacy
WeCare Pharmaceutical Services
Well Care Pharmacy
West Aid Pharmacy
White Memorial Medical Center

Yuma Regional Medical Center

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
GARY E. FRASER, MB.Ch.B., Ph.D., Associate Dean for Research
SAMUEL SORET, Ph.D., Associate Dean, Office of Public Health Practice
DWIGHT BARRETT, Ed.D., Executive Associate Dean for Student Services and Administration
DONNA L. GURULE, M.P.H., Assistant Dean, Academic Administration for Master's Programs
ALBIN GROHAR, Ph.D., Assistant Dean, Academic Administration for Doctoral Programs
RAFAEL MOLINA, M.Ed, Director of Distance Learning
WENDY SARAVIA-GENOVEZ, M.S., Assistant Dean for Admissions and Academic Records

Center Directors—PH

ERNEST P. MEDINA, Dr.P.H., Executive Director, Center for Nutrition, Lifestyle, and Disease Prevention
KARL M. McLEARY, Ph.D., Executive Director, Center for Leadership in Health Systems
SAMUEL SORET, Ph.D., Executive Director for Community Resilience
PRAMIL SINGH, Dr.P.H., Director, Center for Health Research

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
Dwight Barrett
Wayne Dysinger
Gordon Hewes
Helen Hopp Marshak
Tricia Penniecook
Warren Peters
Wendy Saravia-Genovez
Samuel Soret

Admissions Committee

Dwight Barrett, Chair
Jim Banta
W. Lawrence Beeson
Juan Carlos Belliard
Daniel Handysides
Helen Hopp Marshak
Naomi Modeste
Rafael Molina
Wendy Saravia-Genovez
Ryan Sinclair
Serena Tonstad
Michelle Wien
Loretta Wilber

Academic Council

Helen Hopp Marshak, Chair
Candice Gomez, Secretary
W. Lawrence Beeson
Elisa Brown
Donn Gaede
Albin Grohar
Donna Gurule
Ella Haddad
Daniel Handysides
Gordon Hewes
Michelle Lake
Nellie Leon
Edward McField
Naomi Modeste
Wendy Saravia-Genovez
Pramil Singh
Samuel Soret
Loretta Wilber

Awards and Traineeship Committee

Dwight Barrett, Chair
Jim Banta
Molly Dougherty
Gordon Hewes
Sharon Rushing
Hildemar dos Santos
Wendy Saravia-Genovez
Samuel 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; 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 Behavioral Health
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
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 Behavioral Health
School of Dentistry
School of Medicine
School of Nursing
School of Pharmacy
School of Public Health
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

Calvin Thomsen, Chair
Carla Gober
James Greek
Johnny Ramirez
Randall Roberts
David Taylor

M.A. in Religion and Society

David Larson, Chair
Ivan Blazen
Ben Clausen
Ronald Carter
David Larson
James Walters
Gerald Winslow

M.S.Chap. Chaplaincy

Calvin Thomsen, Chair
Marlo Ceballos
Carla Gober
Vaughan Grant
James Greek
Jon Paulien
Johnny Ramirez
Randall Roberts

Rank and Tenure

Richard Rice, Chair
Ivan Blazen
Andy Lampkin

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 Enrollment Management
Director of Religion and Sciences Program
Director of Student Services

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

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
Danilyn Angeles
Danilo Boskovic
Leonard Brand
Curtis Fox
Carla Gober
Synnove Knutsen
Leroy Leggitt
Everett Lohman
Patricia Pothier
Janelle Pyke
Richard Rice
Wei-Xing Shi
Christian Schubert
Erin Seheult
Salvador Soriano
Kylie Watts
Ken Wright

Nominating Committee

Anthony J. Zuccarelli, Chair
Lee Berk
Curtis Fox
Hansel Fletcher
Christine Neish
Jon Paulien

Academic Variances Committee

Anthony J. Zuccarelli, Chair
Bruce Wilcox
Kathryn Knecht
Betty Winslow
Janelle Pyke

Admissions Review Committee

Anthony J. Zuccarelli, Chair
Willie Davis
Kevin Nick
Mark Carr
Sigrid James
Nathan Wall

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 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: 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. 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. Currently approved by the Commission on Accreditation for Health Informatics and Information Management Education.

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. degree 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. Initially approved 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. Initially approved 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 Behavioral Health

School of Behavioral Health programs are accredited through University accreditation and/or through their professional accrediting bodies. Programs offered through the School of Behavioral Health in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

Department of Counseling and Family Sciences

MARITAL AND FAMILY THERAPY (M.S.): Accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

MARITAL AND FAMILY THERAPY (D.M.F.T.): Accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

MARITAL AND FAMILY THERAPY (Ph.D.): Accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

PUPIL PERSONNEL SERVICES CREDENTIAL: Assigned the status of "accreditation" through Linda University on June 18, 2008, by the Committee on Accreditation on behalf of the Commission on Teacher Credentialing (State of California).

Department of Psychology

CLINICAL PSYCHOLOGY (Ph.D.): Accredited by the Commission on Accreditation of the American Psychological Association.

CLINICAL PSYCHOLOGY (Psy.D.): Accredited by the Commission on Accreditation of the American Psychological Association.

Department of Social Work and Social Ecology

MASTER OF SOCIAL WORK: Accredited by the Council of Social Work Education to provide master's degree-level education, with the next reaffirmation to be completed in 2017.

School of Dentistry

ADVANCED GENERAL DENTISTRY EDUCATION PROGRAM IN DENTAL ANESTHESIOLOGY: Started in 1985. Approved by the Commission on Dental Accreditation of the American Dental Association since February 2012.

DENTAL HYGIENE: Bachelor of Science degree started in 1959. Approved by the Commission on Dental Accreditation of the American Dental Association since September 7, 1961. Associate in Science degree began 2011. Approved by the Commission on Dental Accreditation of the American Dental Association since May 2011. B.S. Degree Completion Program began January 7, 2008; WASC-approved in 2009.

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 of Nursing, which started at Loma Linda in 1905, added the White Memorial Hospital in Los Angeles in 1924. College program accredited by the National Nursing Accrediting Service December 10, 1951, with approval continuing under the National League for Nursing until 2001. The School accredited by the Commission on Collegiate Nursing Education (CCNE) since 1999. Initial 1917 approval by the California State Board of Health extended until college program was approved July 1, 1952, by the California Board of Registered Nursing. Master's degree program started in 1957, Ph.D. degree program in 2002, and Doctor of Nursing Practice (DNP) degree program in 2010.

School of Pharmacy

Started in 2002. Approved by the Accreditation Council for Pharmaceutical Education since June 23, 2007.

Accredited by the Accreditation Council for Pharmacy Education (ACPE) to offer the Doctor of Pharmacy degree program. ACPE is the sole accreditation agency recognized by the U.S. Department of Education to accredit professional degree programs in pharmacy and is located at 135 South LaSalle Street, Suite 4100, Chicago, IL 60603-4810; telephone: 312/664-3575; FAX: 312/664-4652; Web site: https://www.acpe-accredit.org .

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.

Accrediting and Approving 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: <http://www.wascweb.org>
E-mail: <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

Commission on Accreditation for Respiratory Care (CoARC)
1248 Harwood Road
Bedford, TX 76021-4244
Telephone: 800/874-5615 or 817/283-2835
FAX: 817/354-8519 or 817/252-0773
Web site: <http://www.coarc.com>
E-mail: <richwalker@coarc.com>

Clinical Laboratory Sciences

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
Telephone: 510/620-3800
Web site: <http://www.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
Telephone: 773/714-8880
FAX: 773/714-8886
Web site: <http://www.naacls.org>
Email: <naaclsinfo@naacls.org>

California Department of Public Health (CDPH)
Laboratory Field Services (LFS)
850 Marina Bay Parkway
Building P, 1st Floor
Richmond, CA 94804-6403
Telephone: 510/620-3800

Cytotechnology

American Society of Cytopathology (ASC)
100 West 10th Street
Suite 605
Wilmington, DE 19801
Telephone: 302/543-0683
FAX: 302/543-6597
E-mail: <asc@cytopathology.org>

Commission on Accreditation of Allied Health Education Programs (CAAHEP)

1361 Park Street
Clearwater, FL 33756
Telephone: 727/210-2350
FAX: 727/210-2354
Web site: <http://www.caahep.org>
E-mail: <caahep@caahep.org>

Communication Sciences and Disorders

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
Telephone: 301/296-5700
FAX: 301/571-0457
Web site: <http://www.asha.org>
E-mail: <accreditation@asha.org>

Health Information Management

Health Information Administration

Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
233 North Michigan Ave
Chicago, IL 60601-5800
Telephone: 312/233-1100
FAX: 312/233-1948
Web site: http://www.cahiim.org
E-mail: info@cahiim.org

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
35 East Wacker Drive, Suite 1970
Chicago, IL 60601-2208
Telephone: 312/553-9355
FAX: 312/553-9616
Web site: <http://www.caahep.org>
E-mail: <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.

Accreditation Council Education in Nutrition and Dietetics (ACEND)
of the American Dietetic Association
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
Telephone: 312/899-0040, ext. 5400; or 800/877-1600, ext. 5400
FAX: 312/899-4817
Web site: <http://www.eatright.org/cade>
E-mail: <education@eatright.org>

Occupational Therapy

The Accreditation Council for Occupational Therapy Education (ACOTE)
P.O. Box 31220
Bethesda, MD 20824-1220
Telephone: 301/652-2682 or toll free 800/377-8555
FAX: 301/652-7711
Web site: <http://www.aota.org>
E-mail: <accred@aota.org>

Orthotics and Prosthetics

National Commission on Orthotic and Prosthetic Education (NCOPE), in collaboration with the
Commission on Accreditation of Allied Health Education Programs (CAAHEP)
330 John Carlyle Street., Suite 200
Alexandria, VA 22314
Telephone: 703/836-7114
FAX: 703/836-0838
Web site: <http://www.ncope.org/>
E-mail: <info@ncope.org>

Physical Therapy

Commission on Accreditation in Physical Therapy Education (CAPTE)
1111 North Fairfax Street
Alexandria, VA 22314
Telephone: 703/706-3245
FAX: 703/838-8910
Web site: <http://www.apta.org>
E-mail: 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
Telephone: 715/389-3785
FAX: 715/387-5163
Web site: <http://www.arc-pa.org>
E-mail: <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
Telephone: 312/704-5300
FAX: 312/704-5304
Web site: <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
Telephone: 312/553-9355
FAX: 312/553-9616
Web site: <http://www.caahep.org>
E-mail: <caahep@caahep.org>

Joint Review Committee on Education in Diagnostic Medical Sonography (JRCE-DMS)
1248 Harwood Road
Bedford, TX 76021-4244
Telephone: 817/685-6629
FAX: 817/354-8519
Web site: <http://www.jrcdms.org>
E-mail: <sharonworthing@coarc.com>

Nuclear Medicine Technology—Certificate

California Department of Public Health Radiologic Health Branch (RHB)
P.O. Box 997414, MS 7610
Sacramento, CA 95899-7414
Telephone: 916/327-5106
FAX: 916/440-7999
Web site: <http://www.cdph.ca.gov/programs/Pages/RadiologicHealthBranch.aspx>
E-mail: <RKubiak@dhs.ca.gov>

School of Behavioral Health

Marital and Family Therapy

Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE)
of the American Association for Marriage and Family Therapy (AAMFT)
1133 15th Street NW, Suite 300
Washington, DC 20005-2710
Telephone: 202/467-5111 or 452-0109
FAX: 202/223-2329
Web site: <http://www.aamft.org>
E-mail: <coamfte@aamft.org>

Pupil Personnel Services Credential

California Commission on Teacher Credentialing (CTC)
California State Department of Education

Psychology

Commission on Accreditation (CoA)
of the American Psychological Association (APA)
750 First Street NE
Washington, DC 20002-4242
Telephone: 202/336-5500
FAX: 202/336-5978
Web site: <http://www.apa.org>
E-mail: <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
Telephone: 703/683-8080
FAX: 703/683-8099
Web site: <http://www.cswe.org>
E-mail: <info@cswe.org>

School of Dentistry

Commission on Dental Accreditation (CODA)
of the American Dental Association (ADA)
211 East Chicago Avenue
Chicago, IL 60611
Telephone: 800/621-8099
FAX: 312/440-2915
Web site: <http://www.ada.org>
E-mail: <accreditation@ada.org>

School of Medicine

Liaison Committee on Medical Education (LCME)
sponsored by the Association of American Medical Colleges (AAMC) and the
Council on Medical Education of the American Medical Association (AMA)
2450 N Street NW
Washington, DC 30037
Telephone: 202/828-0596
FAX: 202/828-1125
Web sites: <http://www.lcme.org>; <http://www.aamc.org>
E-mail: <lcme@aamc.org>

School of Nursing

Commission on Collegiate Nursing Education (CCNE)
of the American Association of Colleges of Nursing (AACN)
One Dupont Circle NW, Suite 530
Washington, DC 20036-1120
Telephone: 202/887-6791
FAX: 202/887-8476
Web site: <http://www.aacn.nche.edu/accreditation>

Council on Accreditation of Nurse Anesthesia Educational Programs (COA)
222 South Prospect Avenue, Suite 304
Park Ridge, IL 60068-4001
Telephone: 847/692-7050
FAX: 847/692-6968
Web site: <http://www.aana.com>
E-mail: <info@aana.com>

California Board of Registered Nursing (BRN)
1747 North Market Boulevard, Suite 150
Sacramento, CA 95834
Telephone: 916/322-3350
Web site: <http://rn.ca.gov>
E-mail: <NEC.BRN@dca.ca.gov (nec.brn@dca.ca.gov)>

School of Pharmacy

Accreditation Council for Pharmacy Education (ACPE)
20 North Clark Street, Suite 2500
Chicago, IL 60602-5109
Telephone: 312/664-3575
FAX: 312/664-4652
E-mail: <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
Telephone: 202/789-1050
FAX: 202/789-1895
Web site: <http://www.ceph.org>
E-mail: <jconklin@ceph.org>

Nutrition

Accreditation Council for Education in Nutrition and Dietetics (ACEND)
of the American Dietetic Association
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
Telephone: 312/899-0040, ext. 5400 or 800/877-1600, ext. 5400
FAX: 312/899-4817
Web site: <http://www.eatright.org/cade>
E-mail: <education@eatright.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 *Biennial Report;* and continuous electronic media—such as, digital signage, the Internet, and e-mail communications.
4. Maintaining the Online Employment Opportunities site where dentists and brokers can list practices for sale, associateships, and per diem positions. Students are regularly reminded to browse employment opportunities.

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 l895 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, that 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.
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

Worldwide Web

<llu.edu>

Phone

Switchboard: 909/558-1000, 909/558-4300
Area code: 909/
For more information about LLU: 1/800/422-4LLU
Dialing from Canada: 1/800/548-7114

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: 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	558-7949	87949
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	558-0340	80340
558-8770	88770	Student Health Service	558-0433	80433
558-6028	66028	Student Counseling	558-6090	66090
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
558-6050	66050	Student Assistance Program Spiritual Counseling	558-6051	66051

Faculty of Graduate Studies

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-9485	83374	Dean	No fax	
558-9484	49484	Associate Dean	No fax	

The schools

Allied Health Professions

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
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
558-4966	44966	Clinical Laboratory Sciences	558-0458	80458 attn. CLSC
558-4998	44998	Communication Sciences and Disorders	558-4291	44291 attn. SPPA
558-4976	44976	Health Information Management	558-0404	80404 attn. HLIN
558-4593	44593	Nutrition and Dietetics	558-4291	44291 attn. DTCS
558-4628	44628	Occupational Therapy	558-0239	80239 attn. OCTH
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	558-4291	44291 attn. SLPA

Behavioral Health

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-8722	88722	Admissions	558-0908	80908
558-1900	81900	Records	558-0908	80908
558-4528	44528	Dean	558-0441	80441

Dentistry

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
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

Medicine

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-4462	44462	Medicine	558-4116	44146
558-4467	44467	Admissions	558-0359	80359
558-4481	44481	Dean	558-4146	44146

Nursing

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-1000	44630	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

Pharmacy

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-1300	41300	Pharmacy	558-4859	44589
558-1300	41300	Admissions	558-4859	44859
558-4745	44745	Dean	558-7973	87973

Public Health

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-4546	44546	Public Health	558-4087	44087
558-8776	88776	Admissions	558-4087	44087 attn. Admissions
558-1000 ext 82881	82881	Academic Records	558-4087	44087 attn. Records
558-4598	44598	Academic Programs Office	558-0471	80471
558-4578	44578	Dean	558-4087	44087 attn. Dean
558-7271	87271	Executive Associate Dean	558-0867	80867
558-8621	88621	Academic Affairs	558-0867	80867

558-4988	44988	Practicum Office	651-5421	15421
558-4590	44590	Center for Community Resilience	558-0326	80326
558-4573	44573	Center for Leadership in Health Systems	558-0469	80469
558-8750	88750	Center for Nutrition, Healthy Lifestyle, and Disease Prevention	558-0493	40493
558-8322	88322	Career Center		
558-7450	87450	Communications	558-4087	44087 attn. Communications
558-4866	44866	Computer Center	558-0631	80631
558-4664	44664	Finance Office	558-0845	80845
558-8382	88382	Public Health Practice	558-0182	80182
558-4918	44918	Preventive Medicine Residency, Occupational Medicine, and Addiction Medicine	558-0451	80451
558-8322	88322	Writing Center		

Religion

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
651-5952	15952	Admissions and Marketing	558-4856	44856
558-8434	88434	Dean	558-4856	44856
651-5849	15849	Student Services	558-4856	44586
558-4536	47011	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
558-4536	46268	Clinical Ministry M.A. Program	558-4856	44856
558-4536	46268	Chaplaincy M.S. Chap. Program	558-4856	44856
651-5849	15849	Religion and Health D.Sc. Program	558-4856	44856
558-8103	88103	Religion and Society M.A. Program	558-4856	44856

	Web site	Email
Student Services	<http://llu.edu/central/ssweb >	
University Records		registrar@llu.edu
Faculty of Graduate Studies	<http://llu.edu/science-technology/grad/about.page >	azuccarelli@llu.edu
Admissions	<http://llu.edu/science-technology/grad/about.page >	admissions.gs@llu.edu

The schools

	Web site	Email
Allied Health Professions	<http://llu.edu/allied-health >	
Admissions		sahpadmissions@llu.edu attn. Admissions
Cardiopulmonary Sciences		sahpadmissions@llu.edu attn. CPSC
Clinical Laboratory Sciences		clin.sahp@llu.edu attn. CLSC
Communication Sciences and Disorders		sahpadmissions@llu.edu attn. SPPA
Health Information Management		sahpadmissions@llu.edu attn. HLIN
Nutrition and Dietetics		nutrition@llu.edu attn. DTCS
Occupational Therapy		sahpadmissions@llu.edu attn. OCTH
Physical Therapy		sahpadmissions@llu.edu u attn. PHTH
Physical Therapy Assistant		sahpadmissions@llu.edu attn. PTA
Physician Assistant Sciences		sahpadmissions@llu.edu attn. PAST
Radiation Technology		sahpadmissions@llu.edu attn. RTCH
Behavioral Health	<http://llu.edu/behavioral-health >	admissions.sbh@llu.edu records.sbh@llu.edu
Dentistry		
Academic Affairs		sdacademicaffairs@llu.edu

Admissions	<http://llu.edu/dentistry >	admissions.sd@llu.edu
Graduate Programs	<http://llu.edu/dentistry/gradprograms >	advanceddentaledu@llu.edu
Anesthesiology	<http://llu.edu/dentistry/anesthesia/graduateprogram.page >	advanceddentaledu@llu.edu
Endodontics	<http://llu.edu/dentistry/endo/graduateprogram.page >	advanceddentaledu@llu.edu
Implant Dentistry	<http://llu.edu/dentistry/implant/graduateprogram.page >	advanceddentaledu@llu.edu
Oral and Maxillofacial Dentistry	<http://www.llu.edu/dentistry/oms/graduateprogram.page >	advanceddentaledu@llu.edu
Orthodontics	<http://www.llu.edu/dentistry/ortho/graduateprogram.page >	advanceddentaledu@llu.edu
Pediatric Dentistry	<http://www.llu.edu/dentistry/pediatrics/graduateprogram.page >	advanceddentaledu@llu.edu
Periodontics	<http://www.llu.edu/dentistry/perio/graduateprogram.page >	advanceddentaledu@llu.edu
Prosthodontics	<http://www.llu.edu/dentistry/prostho/graduateprogram.page >	advanceddentaledu@llu.edu
Medicine	<http://www.llu.edu/medicine >	ledwards@llu.edu
Nursing	<http://www.llu.edu/nursing >	nursing@llu.edu
Pharmacy	<http://www.llu.edu/pharmacy >	
Admissions		admissions.sp@llu.edu
Public Health	<http://www.llu.edu/public-health >	
Admissions and Academic Records	<http://www.llu.edu/public-health >	admissions.sph@llu.edu
Academic Affairs		sphacademicaffairs@llu.edu
Academic Programs Office		sph_academicprograms@llu.edu
Career Center		sphcareercenter@llu.edu
Communications		sphcommunications@llu.edu
Computer Center		llusphcc@llu.edu
Dean		sphdean@llu.edu
Distance Learning		distancelearning@llu.edu
Executive Associate Dean		spheadoffice@llu.edu
Finance Office		sphfinance@llu.edu
Practicum Office		llusphpio@llu.edu
Public Health Practice	<http://www.llu.edu/publichealth/academic-centers/practice.page >	sphpracticeadmin@llu.edu
Recruitment and Marketing	<http://www.llu.edu/public-health >	sphinfo@llu.edu
Writing Center		sphwritingcenter@llu.edu
Religion	<http://www.llu.edu/religion/index.page >	
Program Director for M.A. in Bioethics	<http://www.llu.edu/religion/ethics.page >	jwalters@llu.edu
Program Director for M.A. in Clinical Ministry	<http://www.llu.edu/religion/clinical-ministry.page >	cthomsen@llu.edu
Program Director for M.S.Chap. in Chaplaincy		cgober@llu.edu
Program Director for M.A. in Religion and Society		dlarson@llu.edu
Center for Christian Bioethics	<http://www.llu.edu/central/bioethics/index.page >	bioethics@llu.edu
Center for Spiritual Life and Wholeness	<http://www.llu.edu/wholeness >	

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