



LOMA LINDA UNIVERSITY



2022–2023  
Catalog

# LOMA LINDA UNIVERSITY

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## Catalog of Loma Linda University

2022-2023

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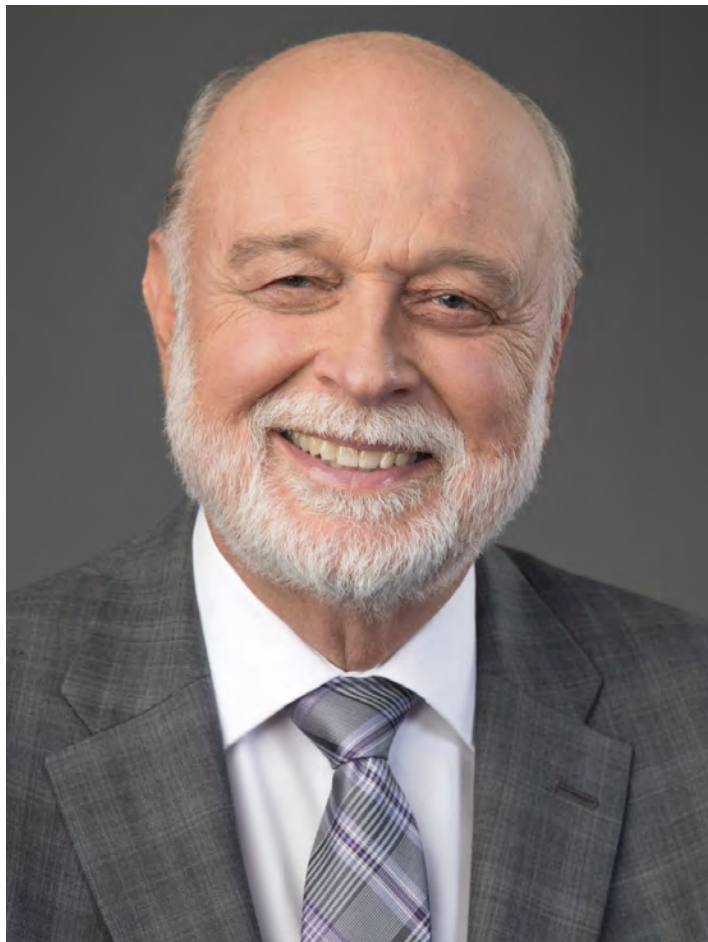


# INTRODUCTION

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Loma Linda University (LLU) (<http://www.llu.edu/>) is a Seventh-day Adventist educational health sciences institution located in Southern California. With more than 4,400 students, its eight schools comprise the University organization. More than 100 academic degree programs are offered by the Schools of Allied Health Professions (<http://www.llu.edu/allied-health/>), Behavioral Health, (<http://www.llu.edu/behavioral-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/>), and Religion (<http://www.llu.edu/religion/>). 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. The University also offers distance education. For a list of programs, see <https://home.llu.edu/education/office-of-provost/educational-effectiveness/online-programs> (<https://home.llu.edu/education/office-of-provost/educational-effectiveness/online-programs/>).

## President's Welcome



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 members 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 55,800 alumni.

Cordially yours,

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

It is a privilege to welcome you to Loma Linda University. This is a 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 members 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 JCWHITE. These values are Justice, Compassion, Wholeness, Humility, Integrity, Teamwork, and Excellence. 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.

## 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 Seventh-day Adventist 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. However, certificates are issued by the school, which maintains records of the certificates and their 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

Program	School	Degrees/Certificates Offered
Anatomy	SM	M.S., Ph.D.
Biology	SM	M.S., Ph.D.
Bioethics	SR	M.A., PB certificate
Biomedical Sciences	SM	M.M.S.
Cancer, Developmental and Regenerative Biology	SM	M.S., Ph.D.
Cardiac Electrophysiology Technology	AH	A.S. (online)
Chaplaincy	SR	M.S.Chap.
Child Life Specialist	BH	M.S.
Clinical Leadership	BH	D.S.W. (online)
Clinical Laboratory Science	AH	B.S. (formerly: Medical Technology)

Coding Specialist	AH	Certificate (online)
Communication Sciences and Disorders	AH	B.S., M.S., Transitional M.S.
Counseling	BH	M.S.
Counseling, School	BH	PM certificate (See: School Counseling)
Criminal Justice	BH	M.S.
Denominational Studies for Chaplains	SR	Certificate (online)
Dental Hygiene	SD	B.S.
Dentistry, General	SD	D.D.S.
Dentist Program, International	SD	D.D.S.
Diagnostic Cardiac Sonography	AH	Certificate
Diagnostic Medical Sonography	AH	B.S.
Drug and Alcohol Counseling	BH	PB certificate (online)
Earth Science	SM	Ph.D.
Endodontics	SD	M.S., M.S.D., PD certificate
Environmental Sciences	SM	B.S.
Epidemiology	PH	M.P.H. (on campus and online), 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.H.A. (on campus and online)
Health Education	PH	Dr.P.H. (on campus and online)
Health Education and Wellness Coaching	PH	M.P.H. (on campus and online)
Health Geoinformatics	PH	PB certificate (online)
Health Informatics	AH	M.S. (on campus and online)
Health Information Management	AH	B.S. (on campus and online), PB certificate (on campus and online)
Health Policy and Leadership	PH	Dr.P.H. (on campus and online)
Health Professions Education	AH	M.S. (on campus and online), PB certificate (on campus and online)
Implant Dentistry, Advanced	SD	M.S., M.S.D., PD certificate
Infection, Immunity, and Inflammation	SM	M.S., Ph.D.
International Dentist Program	SD	(See: Dentist Program, International)
Marital and Family Therapy	BH	M.S. (on campus and online), D.M.F.T. (online)
Maternal and Child Health	PH	PB certificate
Medical Radiography	AH	A.S.

Medicine	SM	M.D.	School Counseling	BH	PM certificate, PPS credential
Natural Sciences	SM	M.S.	Social Welfare and Social Research	BH	Ph.D.
Neuroscience, Systems Biology, and BioEngineering	SM	M.S., Ph.D.	Social Work	BH	M.S.W. (on campus and online)
Nuclear Medicine Technology	AH	B.S.	Special Imaging: CT	AH	Certificate (on campus and online)
Nursing	SN	B.S. (RN to B.S. online), M.S. (on campus and off-campus Thailand), D.N.P. (online), Ph.D. (online)	Special Imaging: CVI	AH	Certificate
Nutrition	PH	M.P.H., Ph.D. (See: Plant-Based Nutrition)	Special Imaging: MRI	AH	Certificate
Nutrition and Dietetics	AH	B.S., M.S.	Speech-Language Pathology	AH	S.L.P.D. (online)
Occupational Therapy	AH	O.T.D. entry-level (on campus), O.T.D. postprofessional (online)	Systems, Families, and Couples	BH	Ph.D.
Oral and Maxillofacial Surgery, Advanced	SD	PD certificate			
Orthodontics and Dentofacial Orthopedics	SD	M.S., PD certificate			
Orthotics and Prosthetics	AH	M.S.O.P. (on campus, hybrid)			
Pathologists' Assistant	SM	M.H.S.			
Pediatric Dentistry, Advanced	SD	M.S., M.S.D., PD certificate			
Periodontics, Advanced	SD	M.S., M.S.D., PD certificate			
Pharmacy	SP	Pharm.D.			
Physical Therapist Assistant	AH	A.S.			
Physical Therapy	AH	D.P.T. (entry level and postprofessional), Ph.D.			
Physician Assistant	AH	M.P.A.			
Plant-Based Nutrition	PH	M.S. (online)			
Play Therapy	BH	PM certificate (online)			
Polysomnography	AH	Certificate			
Population Medicine	PH	M.P.H. (on campus and online)			
Preventive Care	PH	Dr.P.H. (on campus and online)			
Prosthodontics, Advanced	SD	M.S., M.S.D., PD certificate			
Psychology	BH	M.A.			
Psychology, Clinical	BH	Psy.D., Ph.D.			
Radiation Sciences	AH	B.S. entry level (on campus), postprofessional B.S. (online)			
Radiation Therapy Technology	AH	B.S.			
Radiologist Assistant	AH	M.S.R.S. (online)			
Rehabilitation Science	AH	Ph.D.			
Religion and Society	SR	M.A.			
Respiratory Care	AH	B.S. entry level (on campus), B.S. postprofessional (online), M.S.R.C. (on campus and online)			

## Accreditation Overview

The University is accredited as a degree-granting institution by the Western Association of Schools and Colleges (WASC) Senior College and University Commission (WSCUC). Schools' programs are accredited by appropriate accrediting agencies, and graduates are eligible to take 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 the College of Evangelists in 1905-06, the University was chartered as College of Medical Evangelists by the state of California on December 13, 1909, and was accredited by Northwest Association of Secondary and Higher Schools on April 7, 1937. Accredited by WASC (prior to January 1962, Western College Association) on February 24, 1960, it became Loma Linda University on July 1, 1961.

### Accrediting agencies

Loma Linda University is fully accredited by WSCUC, which may be contacted at:

WASC Senior College and University Commission (WSCUC)  
1001 Marina Village Parkway, Suite 402  
Alameda, CA 94501  
Phone: 510/748-9001  
FAX: 510/748-9797  
website: <https://www.wscuc.org> (<https://www.wscuc.org/>)  
email: <https://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>)

WSCUC 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 WSCUC 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 of Allied Health Education Programs (CAAHEP)  
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 also approve specific University schools or programs:

Approval Committee for Certificate Programs (ACCP), a joint committee established by the Association for Healthcare Documentation Integrity (AHD) 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 Title IX coordinator. 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 they have 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, which must be submitted in writing on the designated form. The completed form and 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 unlawfully discriminate on the basis of veteran status, handicap, gender identity, sexual orientation, 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. The University 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 Orders 11246 and 13279; 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 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

For the most current event information, visit the University's Event Calendar (<https://home.llu.edu/events/>).

## 2022

### January

3	SD	Winter Quarter begins (all programs)
3	U	Winter Quarter begins (standard-term programs)
10	U	Last day to register with a late fee (standard-term programs)
10–14	U	Week of Renewal
17	U	Martin Luther King, Jr. Day (holiday)
18	U	Last day to drop without a "W" (standard-term courses)

### February

21	U	President's Day (holiday)
28	U	Last day to drop with a "W" (standard-term courses)

### March

7	U	Spring registration begins (standard-term programs)
14–17	SD	Winter Quarter final examinations
17	SD	Winter Quarter ends (DH)
18	U	Winter Quarter ends (standard-term programs)
19–25	U	Spring Recess
21–22	SD	IDP orientation
22	SD	Grades due by 4:00 p.m.
23	U	Standard-term grades due by 4:00 p.m.
24	U	Last day to register without a late fee (Spring Quarter standard-term programs)
25	U	First day of \$200 late registration fee (Spring Quarter standard-term programs)
28	SD	Spring Quarter begins (DH, IDP 2nd Year)
28	U	Spring Quarter begins (standard-term programs)

### April

4	U	Last day to register with a late fee (standard-term programs)
4–8	U	Week of Renewal

11	U	Last day to drop without a "W" (standard-term courses)
22	SM	MD Second Year ends
25	SM	MD Third Year Orientation Week begins (Class of 2024)
29	SP	PharmD First & Third Years end

### May

2	U	Summer Registration Opens (standard-term programs)
2	SM	MD Third Year begins (Class of 2024)
6	SP	PharmD Fourth Year ends (Class of 2022)
13	SP	PharmD Second Year ends
16	SP	PharmD Fourth Year begins (Class of 2023)
23	U	Last day to drop with a "W" (standard-term courses)
27	SM	MD Fourth Year ends
28	U	SD/SM/SP Baccalaureate Services
29	U	SD/SM/SP Commencement Services
30	U	Memorial Day (holiday)

### June

10	U	Spring Quarter ends (standard-term programs)
10	AH	DPT Entry Level 2nd & 3rd Years end (Classes of 2023 & 2022)
10	SD	Winter Term ends (DDS & IDP)
10	SM	MD First Year ends
11	U	SAHP/SBH/SN/SPH/SR Baccalaureate Services
12	U	SAHP/SBH/SN/SPH/SR Commencement Services
15	U	Standard-term grades due at 4:00 p.m.
16	U	Last day to register without a late fee (standard-term programs)
17	U	First day of \$200 late registration fee (standard-term programs)
20	U	Summer Quarter Begins (standard-term programs)
20	AH	DPT Entry Level 1st & 3rd Years begin (Classes of 2025 & 2023)
24	AH	DPT Entry Level 1st Year ends (Class of 2024)
26	SM	MD Third Year ends (Class of 2023)
27	U	Last day to register with a late fee (standard-term programs)

### July

1	SD	Advanced Dental Orientation
4	U	Independence Day (holiday)
5	U	Last day to drop without a "W" (standard-term courses)
5	SD	Summer Term begins (DDS 2nd, 3rd, 4th years; IDP)
5	SM	MD Fourth Year begins
26	U	1st 5-week Summer Session ends
27	U	2nd 5-week Summer Session begins
28	SM	MD First Year begins

**August**

8	U	Autumn registration opens (standard-term programs)
8	AH	DPT Entry Level 2nd Year begins (Class of 2024)
8-12	SP	Orientation Week
15	U	Last day to drop with a "W" (standard-term courses)
15	SM	MD Second Year begins
15	SP	PharmD First, Second, & Third Years begin
22	AH	BS CLS Junior Year begins
22-25	SD	DDS Orientation
23	AH	BS CLS Senior Year begins
29	SD	Summer Term begins (DDS 1st Year)

**September**

2	U	2nd 5-week Summer Session ends
2	U	Summer Quarter ends (standard-term programs)
2	AH	MPA First Year ends (Class of 2023)
5	U	Labor Day (holiday)
8	U	Standard-term grades due at 4:00 p.m.
16	AH	MPA Second Year ends (Class of 2022)
19-22	SD	DH Orientation
22	U	Last day to register without a late fee (standard-term programs)
23	U	First day of \$200 late registration fee (standard-term programs)
26	U	Autumn quarter begins (standard-term programs)
26	U	University-wide orientation and Welcome Back Bash
26	AH	MPA First & Second Years begin

**October**

3	U	Last day to register with a late fee (standard-term programs)
10	U	Last day to drop without a "W" (standard-term courses)
10-14	U	Week of Renewal
31	U	Winter registration opens (standard-term programs)

**November**

23-27	U	Thanksgiving Recess (starts at 2 p.m.)
28	U	Last day to drop with a "W" (standard-term courses)

**December**

15	SD	Summer Term ends (DDS, IDP all years)
15	U	Last day to register without a late fee (standard-term programs)
16	U	Autumn Quarter ends (standard-term programs)
16	U	First day of \$200 late registration fee (standard-term programs)
21	U	Standard-term grades due at 4:00 p.m.

19-	U	Christmas Recess
January 2		

**2023****January**

3	U	Winter Quarter begins (standard-term programs)
3	SD	Winter Term begins (DDS, DH, IDP)
9	U	Last day to register with a late fee (standard-term programs)
9-13	U	Week of Renewal
16	U	Martin Luther King, Jr. Day (holiday)
17	U	Last day to drop without a "W" (standard-term courses)

**February**

6	U	Spring registration opens (standard-term programs)
20	U	President's Day (holiday)
27	U	Last day to drop with a "W" (standard-term courses)

**March**

16	SD	Winter Term ends (DH)
17	U	Winter Quarter ends (standard-term programs)
18-26	U	Spring Recess
21	SD	Grades due by 4:00 p.m.
22	U	Standard-term grades due by 4:00 p.m.
22-24	SD	IDP Orientation
23	U	Last day to register without a late fee (standard-term programs)
24	U	First day of \$200 late registration fee (standard-term programs)
27	U	Spring Quarter begins (standard-term programs)

**April**

3	U	Last day to register with a late fee (standard term programs)
3-7	U	Week of Renewal
10	U	Last day to drop without a "W" (standard-term courses)
21	SM	MD Second Year ends
24	SM	MD Third Year Orientation Week begins (Class of 2025)
28	SP	PharmD First & Third Years end
30	SM	MD Third Year ends (Class of 2024)

**May**

1	U	Summer registration opens (standard-term programs)
1	SM	MD Third Year begins (Class of 2025)
5	SP	PharmD Fourth Year ends (Class of 2023)
12	SP	PharmD Second Year ends
15	SP	PharmD Fourth Year begins (Class of 2024)
22	U	Last day to drop with a "W" (standard-term courses)

26	SM	MD Fourth Year ends
27	U	SD/SM/SP Baccalaureate services
28	U	SD/SM/SP Commencement services
29	U	Memorial Day (holiday)

## June

8	SD	Winter Term ends (DDS 2nd, 3rd, & 4th Years; IDP)
8	SD	Spring Quarter ends (DH, IDP 2nd Year)
9	U	Spring Quarter ends (standard-term programs)
9	AH	BS CLS Junior & Senior Years end
9	AH	DPT Entry Level 2nd & 3rd Year ends (Classes of 2024 & 2023)
10	U	AH/BH/PH/SN/SR Baccalaureate services
11	U	AH/BH/PH/SN/SR Commencement services
14	SD	Grades due at 4:00 p.m.
14	U	Standard term grades due at 4:00 p.m.
15	U	Last day to register without a late fee (standard-term programs)
16	U	First day of \$200 late registration fee (standard-term programs)
19	SM	MD First Year ends
19	U	Summer Quarter begins (standard-term programs)
19	AH	DPT Entry Level Year 1 begins (Class of 2026)
23	AH	DPT Entry Level 1st Year ends (Class of 2025)
26	U	Last day to register with a late fee (standard-term programs)
26	SM	MD Fourth Year begins
29 & 30	SD	Advanced Dental Orientation

## July

3	U	Last day to drop without a "W" (standard-term courses)
4	U	Independence Day
5	SD	Summer Term begins (DDS, DH, IDP)
25	U	First 5-week Summer Session ends
26	U	Second 5-week Summer Session begins
27	SM	MD First Year begins

## August

7	U	Autumn registration opens (standard-term programs)
7-11	SP	Orientation Week
14	U	Last day to drop with a "W" (standard-term courses)
14	SM	MD Second Year begins
14	SP	PharmD First, Second, & Third Years begin
21-24	SD	DDS Orientation
21	AH	BS CLS Junior Year begins
22	AH	BS CLS Senior Year begins

## September

1	U	Second 5-week Summer Session ends
1	U	Summer Quarter ends (standard-term programs)
1	AH	MPA First Year ends (Class of 2024)

4	U	Labor Day (holiday)
7	U	Standard-term grades due at 4:00 p.m.
15	AH	MPA Second Year ends (Class of 2023)
18-21	SD	DH Orientation
19	SD	Grades due by 4:00 p.m.
21	U	Last day to register without a late fee (standard-term programs)
22	U	First day of \$200 late registration fee (standard-term programs)
25	U	Autumn Quarter begins (standard-term programs)
25	U	University-wide orientation and Welcome Back Bash

## October

2	U	Last day to register with a late fee (standard-term programs)
9	U	Last day to drop without a "W" (standard-term courses)
9-13	U	Week of Renewal

## November

6	U	Winter registration opens (standard-term programs)
22-26	U	Thanksgiving Recess (starts at 2 p.m.)
27	U	Last day to drop with a "W" (standard-term courses)

## December

15	U	Autumn Quarter ends (standard-term programs)
16– January 1	U	Christmas Recess
20	U	Standard-term grades due by 4:00 p.m.
21	U	Last day to register without a late fee (standard-term programs)
22	U	First day of \$200 late registration fee (standard-term programs)

# 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 as well as the Faculty of Graduate Studies. University curricula 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 Adventist Church.

From 1913 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 that 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 (Autumn 2021) indicate that the core of the combined faculties consists of 2,248 full-time faculty. Part-time and voluntary faculty (1,209—largely clinicians in the professional curricula) bring the total to 3,457. As of Autumn Quarter 2021, 604 students from 81 countries outside the United States are represented in the enrollment of 4,434.

### 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 1,076 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 (LLUHS), 2009.

- Loma Linda University Behavioral Medicine Center (LLUBMC)—an acute psychiatric care facility—1991.
- Loma Linda University Medical Center-Murrieta, 2011.
- Twelve Loma Linda University Health (LLUH) institutes, two LLUH-related research centers, and various school-related research centers (see Learning Environment (p. 20)).
- 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 as well as the Faculty of Graduate Studies.
- San Bernardino Campus - San Manuel Gateway College.

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; 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
2015	Corporation name changed from Loma Linda University Adventist Health Sciences Center (LLUAHSC) to Loma Linda University Health (LLUH)
2021	Dennis and Carol Troesh Medical Campus opens

## Vision and Mission

### Vision

Transforming lives through education, health care, and research.



## Mission

Loma Linda University—a Seventh-day Adventist Christian, health sciences institution—seeks to continue the teaching and healing 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 members, 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 from “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

**Value definition:** Reflects the love of God with respect, mercy, and empathy.

**Behavioral attributes**

- Listens to others with kindness and concern.
- Consistently treats others with courtesy.
- Encourages an environment that is inclusive.
- Anticipates and responds to the needs and suffering of others.

### Excellence

**Value definition:** Exceeds expectations with effectiveness, reliability, and efficiency.

**Behavioral attributes**

- Carefully analyzes and balances all aspects of each decision.
- Establishes high standards for exceptional mission-focused learning and quality health care.
- Participates in education and clinical care that is evidence-based.
- Takes all necessary measures to ensure personal and collective safe practices.

### Humility

**Value definition:** Puts self-importance aside for the greater good of others.

**Behavioral attributes**

- Relates to others with selfless caring.
- Learns from teachable moments.
- Treats everyone with thoughtfulness and patience.
- Lives life with a commitment to service.

## Integrity

**Value definition:** Carries out actions with honesty and trustworthiness.

### Behavioral attributes

- Builds dependability through honest communication with others.
- Respects personal and academic freedom.
- Follows through on commitments.
- Holds self and others accountable for actions.

## Justice

**Value definition:** Commits to diversity, equity, and inclusion.

### Behavioral attributes

- Considers how one's actions will affect others and the environment around.
- Calls out actions that are in conflict with our values.
- Supports efforts to remove systemic barriers.
- Protects the dignity and worth of all individuals.
- Works toward quality healthcare access for all.

## Teamwork

**Value definition:** Collaborates to achieve a shared purpose.

### Behavioral attributes

- Recognizes, understands, and celebrates the unique strengths of all team members.
- Shares knowledge and learning opportunities for team growth.
- Recognizes the contributions of others and affirms their successes.
- Participates willingly whenever needs arise.

## Wholeness

**Value definition:** Loved by God, growing in health, living with purpose in community.

### Behavioral attributes

- Supports the spiritual value of faith-based education and health care.
- Demonstrates a positive, peaceful, and hopeful attitude.
- Promotes Christ's healing ministry through prayer, positive relationships, and a healthy lifestyle.
- Lives a life that is morally sound and moderate in all things.

## 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 visit <http://www.llu.edu/central/assessment>. (<http://www.llu.edu/central/assessment/>)

- **Critical thinking:** Students demonstrate critical thinking through examining 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 mission-focused learning outcomes (MFLOs) are firmly rooted in its mission, vision, and values (p. 18). Because mission-focused learning is LLU's culture, the University is developing specialized assessment processes to ensure integration of these outcomes over time.

- **Wholeness:** Students integrate wholeness in their personal and professional lives: Loved by God, growing in health, and living with purpose in community.
- **Values (p. 18):** 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 is derived 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. 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. Open construction implies free exposure to questions, ideas, and conflict. Eight vertical supporting elements (at three points bound together representing 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, and the inspiration for all endeavor of humanity for humanity.

Framing the shield are, on 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 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. 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 multiple 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 to 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 humankind. Through intentional educational strategies, Loma Linda University interweaves its vision, mission, and core values within its student learning outcomes. The University's mission of wholeness gives focus to a 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 for the student with initiative and a 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

### SAC Health System (SACHS)

SAC Health System (SACHS) is a federally qualified health center (FQHC) affiliated with Loma Linda University Health, and is the largest specialty-based and single-site teaching FQHC in the nation. It provides low-cost health services at nine sites in the Inland Empire, including school-based clinics in San Bernardino and Rialto as well as clinics within Coachella Valley Rescue Mission, the largest homeless shelter in Riverside County.

The new San Bernardino campus and the established SAC Norton campus are the main sites for clinical education and training. These clinical facilities provide educational opportunities for more than 400 students and 225 residents from Loma Linda, enabling them to become involved with patient care and community initiatives. This clinic network provides a wide spectrum of primary and specialty medical and dental care as well as mental health services, and is an ideal site for working cross-culturally to develop an understanding of diverse populations.

Patient families experience tremendous obstacles to care, including homelessness, lack of insurance, education, and transportation, as well as high rates of violence, crime, poverty, cultural challenges, and other barriers. Approximately 98 percent of patients report income levels below the federal poverty line, 79 percent are minorities, and 5 percent are homeless.

The San Manuel Gateway College is an integral part of the San Bernardino campus, providing certificate-level programs to local high school graduates as a way to enter the health-care workforce. Loma Linda University students interact with and assist in these training programs.

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

Community-Academic Partners in Service (CAPS) is a Loma Linda University program directed by the Institute for Community Partnerships. The program serves as the on-campus hub for connecting students and staff with volunteer opportunities in the San Bernardino area that are mutually beneficial and sustainable, that meet needs expressed by the local community, and that develop in students a lifelong passion for service.

The numerous short-term and long-term community-engagement opportunities range from mentoring high school students, after-school tutoring, health education, college preparation, adult job skills, children's ministry, and a family soccer league. In addition to directly coordinating several programs, CAPS also works closely with local organizations to provide volunteer support for programs and events, and also facilitates students' service learning and community service placement needs.

To serve, students create a volunteer interest profile and list interests and availability on the CAPS online volunteer system. They can sign up for upcoming service opportunities, or they will be notified when opportunities in line with their interests are available. More information on volunteer opportunities can be found by visiting the CAPS website

at [caps.llu.edu](http://caps.llu.edu) (<http://caps.llu.edu/>), by calling (909) 651-5011, or by visiting the CAPS office in the Councilors Student Pavilion, Room 1402.

## Del E. Webb Memorial Library

The main library supporting LLUH is the Del E. Webb Memorial Library. The library began in 1907 as a small collection in a room of the old Loma Linda Sanitarium. The growing collection moved to its own building in 1953. In 1981, funded by a Del E. Webb Foundation grant, construction increased the floor space of the library to 87,670 square feet. As of 2021, the recorded statistics of the library collection included 205,167 book titles in all formats; 16,097 ebooks; 9,883 currently-received serial titles in all formats; and 120 databases.

For more detailed statistical information, consult the library's website at <https://library.llu.edu/about/statistics> (<https://library.llu.edu/about/statistics/>).

### 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 and resources including, but not limited to, collaborative and flexible information literacy instruction, information technology training, reference, specialized research support, document delivery, traditional print and digital book and journal collections, a computer laboratory, and welcoming physical spaces for group and individual study.

### Access to resources

The Del E. Webb Memorial Library catalog (<http://catalog.llu.edu/>) provides access to all of the library's resources. In addition to the collections of the Del E. Webb Memorial Library, other collections include the Ethics Library, Religion Library, and those belonging to the Geoscience Research Center.

The library participates in national and regional networks and is, for example, a member organization of the Network of the National Library of Medicine (NNLM). The Del E. Webb Memorial Library is in region five of the seven regions which make up the network. As a member library, the library maintains deep information resources in the health sciences and further expands its offerings through multiple cooperative agreements with varied local and national groups such as Southern California Electronic Library Consortium (SCELC) and Link+ (<http://linkcore.iii.com/>), a book-request service and union catalog of over 60 libraries throughout California and Nevada.

### Department of Archives and Special Collections

The Department of Archives and Special Collections is the central repository for information on the history of Loma Linda University, Adventist health work around the globe, the history of the health sciences, and the history and development of the Seventh-day Adventist church. Included in the department's collections are the congressional papers of Jerry L. Pettis and Shirley N. Pettis. Jerry Pettis was the first Seventh-day Adventist congressional representative and a former College of Medical Evangelists employee. Shirley N. Pettis assumed her husband's congressional seat after his tragic death in 1975. Through departmental purchases and donations large and small, the department now houses one of the significant research collections of Adventist source materials worldwide. Recent collecting efforts made possible by the generous James F. Barnard Endowment have focused on building on an already substantial collection related to biblical prophecy. The



collections house materials in all formats: print, microform, sound recordings, photographic, manuscript, and digital.

The department houses significant collections of materials in all areas of the health sciences, in multiple languages, including a significant collection in the history of nursing that came as a donation from the New York Academy of Medicine. Recent years have focused on areas where Loma Linda University, the history of the health sciences, and the Seventh-day Adventist Church intersect, such as nineteenth century health reform, diet, vegetarianism, the development of Adventist sanitariums, hydrotherapy, and other relevant topics. Many collections have been digitized and are available to browse on Loma Linda University's institutional repository, "Scholars Repository," ([scholarsrepository.llu.edu](https://scholarsrepository.llu.edu) (<https://scholarsrepository.llu.edu/>)) and on the Digital Archives webpage ([cdm.llu.edu](https://cdm.llu.edu) (<https://cdm.llu.edu/>)).

## University Archives

The purpose of the original Historical Records Office was to preserve those archival records deemed important to the founding and history of the College of Medical Evangelists. This work is being continued by the official University Archives, which is also under the direction of and housed within the Department of Archives and Special Collections. Loma Linda University Archives houses official documents and files for all Loma Linda University schools, departments, administrative offices, and other entities. This includes board minutes, president's papers, provost/chancellor files, University committees, departmental files, photographs of University events, people, buildings, and more. The archives collect and preserve copies of all University publications, such as bulletins, course catalogs, journals, periodicals, departmental newsletters, flyers, posters, and more. Additionally, the archives maintain the copy of record of all theses and dissertations produced by Loma Linda University students. The archives actively seeks the papers of current and former faculty, staff, and students that add to the story of Loma Linda University Health.

## Ellen G. White Estate Branch Office

The Ellen G. White Estate Branch Office, while a separate organizational entity, is physically located within the University Libraries, Del E. Webb Memorial Library, and, along with the Department of Archives and Special Collections and University Archives, forms part of the Heritage Research Center. The mission of the branch office is to preserve, promote, guide, and facilitate an understanding of Ellen G. White's life, writings, and role within the history of the Seventh-day Adventist church and Loma Linda University. Ellen G. White was one of the founders of the College of Medical Evangelists and was firmly committed to seeing the Adventist medical institution grow, thrive, and fulfill the mission of continuing the teaching and healing ministry of Jesus Christ. Thus, her legacy is an important part of the University's history and future developments. The branch office houses and makes accessible Ellen White's letters, manuscripts, articles, and published works.

## 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.

### Loma Linda University Health (LLUH) institutes

- Behavioral Health Institute
- Cancer Center (Institute)
- Global Health Institute

- Institute for Community Partnerships
- Institute for Genetics and Translational Genomics
- Institute for Health Policy and Leadership
- Loma Linda International Heart Institute
- Perinatal Institute
- Primary Care Institute
- Rehabilitation, Orthopaedic, and Neurosciences Institute
- Resiliency Institute for Childhood Adversity
- Transplant Institute
- Wholeness Institute

### LLUH centers

- Center for Christian Bioethics
- Center for Global Surgery
- Center for Whole Person Care

### LLUMC centers

- Advanced Lung Disease Center
- Comprehensive Stroke Center
- Digestive Disease Center
- James M. Slater, M.D., Proton Treatment and Research Center
- Spine Center

### LLU centers

- Center for Dental Research (School of Dentistry)
- Center for Environmental Studies and Stewardship (School of Medicine)
- Center for Health Disparities and Molecular Medicine (School of Medicine)
- Center for Health Promotion (School of Public Health)
- Center for Health Research (School of Public Health)
- Center for Interprofessional Education and Practice (Provost)
- Center for Joint Replacement (School of Medicine)
- Center for Neuroscience Research (School of Medicine)
- Center for Research Imaging (School of Medicine)
- Lawrence D. Longo, M.D., Center for Perinatal Biology (School of Medicine)
- Neurosurgery Center for Research, Training, and Education (School of Medicine)
- William Johnsson Center for Understanding World Religions (School of Religion)



# Admission Policies and Information

## Personal qualities

Loma Linda University was established to provide professional health education in a Christian environment, preparing well-qualified, dedicated health-science professionals committed to fulfilling the mission of the 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, admissions committees look for evidence of personal integrity, academic achievement, healthful lifestyle, self-discipline, self-direction, and service to others. 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 faculty interviews. Acceptance of an applicant into any curriculum is contingent upon 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 application materials can be found online at [www.llu.edu/apply](http://www.llu.edu/apply) (<http://www.llu.edu/apply/>).

### Application review process

All completed applications are reviewed by the appropriate admissions committee, which recommends 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 acceptances 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. 36).

## Combined degree programs

Information regarding combined degree programs, their curricula, pre-entry requirements, distribution of instruction, graduation requirements, finances, and additional information may be obtained from the school and program directors responsible for the programs. Options are found in the combined degrees (p. 428) section of the catalog.

## Admissions classifications

Applicants are admitted under one of three 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.

## 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 LLU application is only available online and can be found at [llu.edu/apply](http://www.llu.edu/apply) (<http://www.llu.edu/apply/>).

### 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 a central application service (e.g., AAMCAS, AADSAS, OTCAS, CASPA) must provide official transcripts of all postsecondary education prior to offers of admission; including those that are not yet final. International applicants (non-U.S. citizens and non-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 a central application service. Official final transcripts documenting completion of all coursework 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 or completion. 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 coursework. Applicants expecting an associate's degree to be awarded before matriculation at Loma Linda University must provide documentation (e.g., letter sent 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. Continuing enrollment is contingent upon the receipt of all official final transcripts.

Degrees earned from a recognized degree-granting college or university accredited by a regional association, including those institutions which have been awarded "candidacy" status by a U.S. regional accrediting body during the period the institution held this status, and degrees earned at an international institution recognized as a degree-granting institution by its government.

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 their professional success at Loma Linda University may be required to pass a test of English proficiency. The minimum required score for each of the following tests is:

- International English Language Testing System (IELTS) – 6.5
- Michigan English Language Assessment Battery (MELAB) – 77

- Pearson Test of English-Academic (PTE Academic) – 60
- International Test of English Proficiency, Academic-Plus (iTEP Academic-Plus) – 3.5
- Duolingo English Test (DET) – 105
- Test of English as a Foreign Language (TOEFL), internet-based – 80
- Test of English as a Foreign Language (TOEFL), paper-based – 550

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

## Pre-entrance requirements Health care

Operating under Loma Linda University Health, the Center for Health Promotion's Student Health Service is committed to providing quality health care to the students within the University community. The providers 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 should complete any routine medical and dental care and/or elective surgery needs prior to arriving on campus.

## Immunization requirements

As a health sciences institution, Loma Linda University is dedicated to the health and welfare of students, professors, health-care workers, and community members. Because of this, students are required to be vaccinated for certain infectious diseases. In order to complete registration for the first academic term, students must provide evidence in the form of physician records or college health service records, proving they have met immunization requirements. Students without proper verification will be required to receive appropriate vaccinations.

## Pre-entrance health requirements

The pre-entrance requirements may be found on the Student Health Service (<https://home.llu.edu/campus-and-spiritual-life/student-health-service/>) website under the New Student (<http://home.llu.edu/new-student-health/>) section. Students are also required to have certain vaccinations repeated at various intervals during their enrollment. In addition, titers documenting immunity to hepatitis B, varicella, and MMR are recommended. Some University schools may require certain titers.

1. Measles, Mumps, Rubella: two immunizations or proof of immunity.
2. Tetanus (Td)/Pertussis: documentation of Tdap in the past 10 years, OR Td in the past 10 years AND one dose of Tdap after age 18.
3. Hepatitis B (series of three immunizations). Nonresponders shall be revaccinated.
4. Tuberculosis skin test (PPD Mantoux) or an IGRA (Interferon Gamma Release Assay), including Quantiferon or T-spot: current within 6 months (if a student tests positive, a chest x-ray report within the past year is required, and an annual Signs and Symptoms Form must be completed).
5. Varicella: Students must show proof of either a series of two injections OR a positive Varicella titer.

The Pre-entrance Health Requirements form for new students is available at <http://home.llu.edu/new-student-health> (<http://home.llu.edu/new-student-health/>). In order to register or attend classes, a completed form with all the required documentation should be submitted at least three weeks prior to the beginning of registration.

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

For further information, visit the Student Health Service (<http://home.llu.edu/student-health/>) website 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.

## 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 who serves as the student's first line of communication in addressing professional and personal successes and potential challenges.

Academic advisors are prepared to discuss career opportunities, academic policies, academic problems, curricula, and personal circumstances.

It is the student's responsibility to consult with their 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 outlines. 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 policies.

## 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. coursework, 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 include providing evidence of their financial ability to meet estimated living expenses and all financial obligations to the University that will occur during their programs. 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](http://www.llu.edu/central/apply/intltrans.page) (<http://www.llu.edu/central/apply/intltrans.page>) for a list of 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 as well as 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 their 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.

F- and J-visa 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 20 or fewer hours per week while registered for courses and while classes are in session. Regulations allow full-time work (40 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 non-degree study (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 appropriately evaluated and received by the University;
- Paid the advance deposit, as required by their program;
- Documented their financial plan for the chosen program.

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

### J-visa exchange program

Loma Linda University has an approved exchange visitor program under the United States Department of State. This J-visa exchange program is authorized to sponsor/host degree-earning students, non-degree

(continuing education) students, student interns, short-term scholars, visiting professors, and research scholars. The J-visa application form (DS-2019) is issued after an exchange visitor has been accepted into a program, scholar position, or professor position—and documented their financial plan (including health insurance for the J-1 and all 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 these exchange visitors since the authority resides with 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 non-degree 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.

### 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 complete 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; eight units per quarter are 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.

## 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 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 quantitative reasoning, 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. Present 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 members are selected who embrace the spirit as well as the specifics of general education. In addition, they purpose to extend these general education 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. This spirit, in tandem with the specifics of a liberal arts education, 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 upon 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

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

#### Domain 1: Religion (4–12 quarter units)

The study of religion must include an average of four units of religion coursework for each year\* of the LLU portion of the program. All required religion courses must be taken from Loma Linda University.

One religion course dealing with the spiritual heritage of the philosophy and mission of Loma Linda University is required of all graduates. 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.

\* The determination of a “year” will be based on the program definition as approved by University Academic Affairs Committee and reflected in the catalog.

#### Domain 2: Arts and humanities (16 quarter units)

The study of humanities must include a minimum of 16 units from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area is required to meet a “content area.”

#### Domain 3: Scientific inquiry and quantitative reasoning (12 quarter units)

The study of natural sciences must include a minimum of 12 units. At least one course in college algebra or statistics is required. Additional units must be selected from two of the following content areas: biology, chemistry, geology, mathematics, and physics; and one course must include a lab component.

#### Domain 4: Social sciences (12 quarter units)

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

#### Domain 5: Written and oral communication (9 quarter units)

Coursework in communication must include a minimum of 9 units, including a complete sequence in English composition that meets the baccalaureate degree requirements of a four-year college or university. Other areas of study in communication may include courses in computer information systems, critical thinking, and public speaking.

#### Domain 6: Health and wellness (2 quarter units)

The study of health and wellness must include a minimum of 2 units, including at least two separate physical activity courses totaling a

minimum of one quarter unit or have military discharge papers (DD214); and a didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, or community nutrition).

## LLU courses

General education courses offered by the schools are listed below in Domains 1–6. Courses are also available through the Online Consortium of Independent Colleges and Universities (OCICU (p. 587)).

Descriptions for general education courses are available by clicking on the prefix and number of the courses listed below.

### Domain 1: Religion (4–12 quarter units)

RELE 455	Christian Understanding of Sexuality	2
RELE 456	Personal and Professional Ethics	3
RELE 457	Christian Ethics and Health Care	2
RELR 404	Christian Service	1,2
RELR 408	Christian Perspectives on Marriage and the Family	2
RELR 409	Christian Perspectives on Death and Dying	3
RELR 427	Crisis Counseling	2
RELR 429	Cultural Issues in Religion	2
RELR 475	Whole Person Care	2
RELT 404	New Testament Writings	2
RELT 406	Adventist Beliefs and Life	3
RELT 415	Christian Theology and Popular Culture	2
RELT 416	God and Human Suffering	2
RELT 423	Loma Linda Perspectives	2
RELT 436	Adventist Heritage and Health	2
RELT 437	Current Issues in Adventism	2
RELT 440	World Religions	2
RELT 464	Paul's Message in Romans	2

### Domain 2: Arts and Humanities (16 quarter units)

AHCJ 225	History of Radiation and Imaging 1890-1940	3
AHCJ 226	History of Radiation and Imaging 1940-Present Day	3
AHCJ 324	Psychosocial Models and Interventions	2
AHCJ 422	History of Disability	3
CMSD 217	Beginning Sign Language	3

### Domain 3: Scientific Inquiry and Quantitative Reasoning (12 quarter units)

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 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 402	Pathology I	4
AHCJ 403	Pathology II	3
AHCJ 418	Physiology I	4



AHRM 471	Statistics and Research for Health Professionals I	3
AHRM 472	Statistics and Research for Health Professionals II	3
AHRM 475	Health-Care Research and Statistics	4

#### Domain 4: Social Sciences (12 quarter units)

AHCJ 228	Hispanic Culture for Allied Health Professionals	4
AHCJ 305	Infectious Disease and the Health-Care Provider	1
AHCJ 315	Psychosocial Aspects of Health Care	3
AHCJ 323	Economics and Business Management	3
AHCJ 324	Psychosocial Models and Interventions	2
AHCJ 328	Wholeness Portfolio I	1
AHCJ 331	Human Resource Management	3
AHCJ 407	Financial Management	2
AHCJ 498	Wholeness Portfolio II	1
ANTH 315	Cultural Anthropology <sup>1</sup>	4
DNHY 414	Personal Finance	2
PSYC 101	Introduction to Psychology	4
PSYC 226	Life-Span Development	4
PSYC 305	Psychological Foundations of Education	4
PSYC 460	The Exceptional Individual	3
PSYC 479	Human Neuropsychology	4

<sup>1</sup> Fulfills cultural diversity requirement

#### Domain 5: Written and Oral Communication (9 quarter units)

AHCJ 210	Introduction to Computers	2
AHCJ 308	Professional Communications	1-2
AHCJ 465	Seminars in Leadership	2

#### Domain 6: Health and Wellness (2 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	1
PEAC 128	Recreation Swimming	1

## Loma Linda University general education courses—online

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 website at Find a Course (<https://home.llu.edu/campus-and-spiritual-life/registrar/>).

## Student Life

The current *Student Handbook* more comprehensively addresses University and school expectations, regulations, and policies than does this section of the CATALOG. It is available to each registered student. Students need to familiarize themselves with its contents. 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. Matriculated students are expected to maintain a manner that is mature and compatible with the University's function as a professional institution of higher learning.

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 their 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's spiritual development are provided through scheduled religious activities, informal association with others who cherish spiritual values, required religion courses, and required chapel services.

### 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 encourage 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 encourage each student to engage in some recreational and health-building activity that may be carried over to enhance future life.

## Immunizations

As a member of a health-science university, whether directly involved in patient care or not, students are responsible for the well-being of others. As a result, Loma Linda University requires that all students receive the flu vaccine annually.

## Recreation and wellness: Drayson Center

Drayson Center serves as the hub for recreation and wellness at Loma Linda University. Encompassing 100,000 square feet indoors, the facility offers numerous fitness and wellness options to promote physical, intellectual, social, emotional, and spiritual wholeness.

The center showcases a 21,000-square-foot gymnasium that can accommodate three full-size basketball courts, five volleyball courts, or nine badminton courts. Circling the gym is an elevated three-lane running track. Four indoor racquetball courts, five outdoor tennis courts, and four permanent pickleball courts are available for play. Two aerobics studios are used for a variety of the latest fitness classes, taught by certified instructors. The cardio and weight rooms provide opportunities for strength training, sports conditioning, bodybuilding, and more.

The outdoor aquatics center includes a heated, ten-lane lap pool, leisure pool, and jacuzzi as well as a 22-foot waterslide. Saunas are available in the fully-equipped men's and women's locker rooms. Summer Swim offers Red-Cross-based swim classes for all ages, promoting water safety for everyone. The 400,000-square-foot outdoor multipurpose recreational Superfield hosts soccer, softball, flag football, ultimate frisbee, and more, with organized seasonal intramural leagues. Two beach volleyball courts feature high-quality beach sand. Next to the pool deck, a grassy area is ideal for picnics and includes the "Hammock Hideout," which serves as a venue for not only hammocks but evening student events around the fire.

Drayson Center offers personal training, medical massage therapy, wellness education, and a variety of family-oriented leisure classes—including ballet and taekwondo. Conference rooms are available for classes, meetings, and banquets. This full-service facility promotes health and wellness for Loma Linda University students, employees, family members, and the surrounding communities. Visit [Drayson.llu.edu](https://drayson.llu.edu) (<https://drayson.llu.edu>) for more information.

## Student Health Service

Operating under Loma Linda University Health, the Center for Health Promotion's Student Health Service is committed to providing quality health care to the students within our University community. Our providers and staff are dedicated to promoting a lifestyle that encourages a balance of physical, spiritual, emotional, and social well-being. Services provided include primary care, women's health, immunizations, laboratory testing, health education, counseling, and referrals to specialty services. Enrollment in the Risk Management Student Health Plan is required to receive the comprehensive coverage of services.

Student Health Service is located in Evans Hall, Suite 111, at the corner of Anderson and Stewart streets. To schedule an appointment or for more information, call 909/558-8770.

## Loma Linda University Student Health Plan

The University-sponsored Student Health Plan is designed to provide comprehensive medical coverage for the student and their eligible dependent(s). It is not an insurance program. The plan includes coverage for hospital care, surgery, emergency care, prescription drugs, limited dental, 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 optical coverage available. Please see the Loma Linda University website for Student Health Services for a complete explanation of the Student Health Plan ([llu.edu/central/studenthealth](http://www.llu.edu/central/studenthealth) (<http://www.llu.edu/central/studenthealth/>)).

## Enrollment

The process to enroll in the Student Health Plan is completed through the online registration process. Once registration is complete, information is relayed to Risk Management. If a student is adding an eligible dependent to their Student Health Plan, the Student Health Plan Enrollment form will need to be completed and submitted to Risk Management with the necessary payment.

## Preferred provider plan

The health plan has been developed as a preferred provider organization (PPO) 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.

## Eligibility

A student is eligible for benefits if they:

- Are attending Loma Linda University as a graduate or undergraduate student.
- Are a degree-track student (accepted into a degree program and registered for more than 0 units will be eligible regardless of the number of units for which they are registered).
- Are 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 eligible; however, a

non-degree student registered for 4 units or fewer is not eligible and will not be eligible to buy into the Student Health Plan).

- Chooses to buy in, was covered under the plan during the previous quarter, and on an approved leave of absence from their academic program.
- Is an IP-only student (a student who is working on an "In Progress" course and is not registered for any other units will be eligible).

### Additional information regarding eligibility

- A student who drops all units before the deadline will not be covered by the plan. Any student who drops all units before the last day for a full refund will not be eligible for the University Student Health Plan for that quarter. Please refer to the Student Finance 100-percent refund policy.
- LLUH employees who are "full-time, benefit eligible" will not be eligible for the Student Health Plan.
- Students participating in an off-campus or online program will not be eligible for the Student Health Plan.
- An eligible student's coverage will become effective on the first day of class or new 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 30 days of a status change (i.e., within 30 days of marriage or within 30 days of the birth of a newborn child) and pay the appropriate quarterly student contribution, as outlined below:

1. Spouse/Dependent Children. If a student is covered under this plan, they may extend health plan coverage to their spouse or dependent child(ren).
2. Leave of Absence (LOA). If a student has been covered under the plan up until leaving school on an approved leave of absence (LOA), they 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, they and eligible dependents would be able to continue coverage for up to one quarter through the 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 buy-in fees to the student's account. All payments must be made by check, money order, or credit card with the Visa or MasterCard logo by calling 909/651-4010. A newborn child must also be enrolled in the plan within 30 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—rates below effective 10-01-2021

- Student—\$535 per quarter for the student plus one of the amounts below for dependents is charged for extension/continuation coverage:
- Spouse buy-in rate—\$700 per quarter.

- One or more child/ren—\$420 per quarter.
- Spouse and child/ren—\$1,120 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 co-payment. Prescriptions filled through CVS/Caremark will be limited to a maximum of a 30-day supply. The co-payment 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), the LLU Meridian Pharmacy, the LLU Highland Springs Pharmacy, the LLUMC Murrieta Physicians Office Building Pharmacy, 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.

\*The co-payment 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 co-payment 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:

- All hospital admissions (scheduled admissions must be authorized prior to entrance to the hospital. In the case of emergency admissions, notification must be made within 48 hours or the next business day).
- All outpatient surgeries.
- Home health services and 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 909/651-4010.

### 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 registered 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 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 the Employee and Student Assistance Programs, which includes 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. Eligible students do not have a copay for these visits.

The University Student Counseling Center is located in the Hartford Building, 11360 Mountain View Avenue, Suite A, in Loma Linda.

### Loma Linda Student Assistance Program

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

If more extensive treatment is appropriate, the client is referred to a community therapist who specializes in the student's area of concern and who is covered by the student's health plan. All information is confidential. Community therapists and LLSAP clinicians will not release information without the written consent of the student, with the exception of matters that fall under mandatory reporting laws.

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

Appointments may be scheduled 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.

## 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 the *Student Handbook* (<http://www.llu.edu/student-handbook> (<http://www.llu.edu/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 their school and program.

## Identification number and badge

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 badge using this identification number and a bar code will be issued to each student after they complete 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), and parking. 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 providing accommodations are available. Students are expected to live on campus unless they meet criteria as follow:

- Married;
- 21 years of age or older;
- In a graduate program;
- 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 experience 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 website at [llu.edu/central/housing](http://www.llu.edu/central/housing) (<http://www.llu.edu/central/housing/>).

The student must keep the University informed of their current address, telephone number, and other contact information.

## 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 order to keep school records correct and up to date. It is wise for students to 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 with the Office of University Records on University Records forms a request for change of name, the student must present a current ID card or other form of picture ID with their 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. They 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 Parking. Returning students must renew the registration of their vehicles online with the Department of Parking annually in September.

## 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 <https://one.luh.org/vip/Departments/LLUSS-Departments/HIPAA-Information/HIPAA-Help/Introduction-to-HIPAA> (<https://one.luh.org/vip/Departments/LLUSS-Departments/HIPAA-Information/HIPAA-Help/Introduction-to-HIPAA/>).

## 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, and 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, and careers of students, faculty members, employees, and patients.

Because of the sensitive nature of situations involving sexual harassment, and to assure speedy and confidential resolution of these issues, affected 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 they are 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 U.S. Citizenship and Immigration Services. F- and J-visa students must limit their employment to 20 hours or fewer per week while registered for courses and while classes are in session. Regulations allow full-time work (40 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

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 the following:



- 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 principles.

- 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 members of the community 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 their grievance may request that the Office of the Provost conduct a review of the process used by the school in responding to their 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, or Drayson Center, may seek correction by the following steps:

1. The student may put their 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 14 days of receiving the student's written complaint or meeting with the student, whichever is later.
2. If the answer is not satisfactory to the student, they may put the complaint in writing and send it to the vice president for student experience 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.

An individual may contact the Bureau for Private Postsecondary Education for review of a complaint. The bureau may be contacted at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95833; email, <http://www.bppe.ca.gov> (<http://www.bppe.ca.gov/>); telephone, 926/431-6924.

## 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 requests 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

Academic credit (p. 34)  
 Degree completion requirements (p. 34)  
 Enrollment (p. 36)  
 Satisfactory academic progress (p. 37)

Scholastic standards (p. 39)

Transfer credit (p. 40)

## Academic credit

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. In this section are the University regulations. See school-specific pages for regulations that pertain to each school and program.

### Credit hour

Credit is recorded in quarter units. A credit hour is defined as 50 minutes of direct faculty instruction per week for 10 weeks in a quarter (11 weeks including finals week) and two to three hours of out-of-class assignments for each unit of credit, or the equivalent amount of work over a different amount of time (e.g., condensed course taught in 5 weeks).

Other academic activities require at least an equivalent amount of work per unit of credit. These include laboratory work (100 minutes when outside preparation is required or 150 minutes when no outside preparation is required), internships, practicums, and other academic work leading to the award of credit hours.

### Course numbers

Courses are numbered as:

001-099	Non-degree-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	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

Coursework at the 500 level 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 an undergraduate degree.

### Course waiver

Certain course requirements in a program may be waived on the basis of previously completed coursework, experience, or licensure. An examination for waiver credit, if required, may be taken only once and must be taken before the final 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 by 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 may petition the dean of the school offering the course, and, upon approval, pay a testing fee. See Schedule of Charges in the Financial Information section for the examination fee.

Equivalency examinations may not duplicate credit already earned through coursework, 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.

## Degree completion requirements

### Catalog in effect for degree requirements

Students are expected to fulfill the curriculum requirements (including prerequisites required for admission) of the catalog year in effect at the time they matriculate to LLU. Subject to department approval, students may choose to complete degree requirements outlined in any CATALOG in effect during terms in which they are registered as accepted students in the selected program. A *Change of Catalog* form must be submitted no later than the deadline for submission of the *Petition for Graduation for Graduate and Professional Programs* or *Undergraduate Intent to Graduate* form.

Submission deadlines are provided on these forms. Revisions to a student's program cannot be made during a student's final term. Inactive students, who have either formally withdrawn from a program or been administratively withdrawn for whatever reason, and who subsequently re-apply to a program, are subject to the program requirements published in the CATALOG in effect at the time of re-entry. For additional information, consult the full policy in the LLU policies available through LLUH One Portal (<https://one.lluh.org/>).

## Academic service learning

Academic service learning is an education practice that takes learning into the community. A reciprocal relationship develops as students work with the community to identify areas of focus and implement projects. Connecting classroom curricula with community needs deepens students' engagement in the community while enabling them to develop mental, physical, spiritual, and emotional capacities. Involvement engages students in critical thinking, community relationship building, practical action, leadership, and reflection useful in their professional lives.

All students in degree programs (associate through doctoral) are required to complete an approved academic service-learning course prior to graduation. Courses currently approved to meet this requirement are as follows:

### School of Allied Health Professions

AHCJ 328	Wholeness Portfolio I	1
AHCJ 519	Graduate Wholeness Portfolio	1
AHCJ 721	Wholeness Portfolio I	1
CLSM 105	Procedures in Phlebotomy	4
CMSD 532	Service-Learning in Speech-Language Pathology II	1
CMSD 588	Educational Fieldwork II	8
DTCS 304	Community Nutrition	4
DTCS 589	Capstone Course in Nutrition and Dietetics	3
HLIF 570	Professional Portfolio	2
HLIN 340	Seminar and Portfolio for Health Information Management	3
OCTH 604	Health, Society, and Participation	3
OCTH 702	Service Learning I	3
ORPR 540	Rehabilitative Care in Developing Nations	3
ORPR 522	Self-Care Portfolio and Community Outreach	2
PAST 572	Culture and Community for Physician Assistants	3
PTAS 265	Professional Seminar	1
RTCH 492	Portfolio II	3
RTMR 344	Professional Development and Service Learning	3
RTRA 614	Professional Portfolio	1

### School of Behavioral Health

CFSD 546	Multicultural and Global Mental Health	3
CHLS 505	Cross-Cultural Perspectives in Health Care	3

### School of Dentistry

DNES 200	Curricular Practical Training	0
DNES 500	Curricular Practical Training	0
DNES 504	Curricular Practical Training for IDP	0
GRDN 609	Professional Ethics	2

### School of Medicine

BIOL 664	Science Communication Outreach	1
GEOL 464	Science Communication Outreach	1
GEOL 664	Science Communication Outreach	1
IBGS 525	Translational Research Training	2
MDCJ 821	Preventive Medicine and Population Health	1.5-6
PATH 534	Civic Engagement and Poverty: Service Learning	1

### School of Nursing

NGNE 503	Educational Leadership	2
NGRD 654	Social Determinants of Health	4

NRSJ 416L	Public Health Nursing Clinical Laboratory	4
NRSJ 434	Public Health Nursing Laboratory for the Working RN	3

### School of Pharmacy

RXRJ 700A	Professional Development <sup>1</sup>	1.5
RXRJ 700B	Professional Development <sup>1</sup>	1.5

### School of Public Health

GLBH 545	Integrated Community Development	4
GLBH 565	Interventions in Community Health and Development I	3
GLBH 567	Interventions in Community Health and Development II	3
GLBH 569	Interventions in Community Health and Development III	3
HADM 529	Applied Leadership Concepts in Health-Care Organizations	3
HADM 586	Building Healthy Communities: Integrative Health Policy	3
HPRJ 537A	Community Programs Laboratory—A	2
HPRJ 537B	Community Programs Laboratory—B	1
HPRJ 537C	Community Programs Laboratory—C	1
NUTR 532	Community Nutrition Intervention II	1
PCOR 502	Public Health for a Healthy Lifestyle	5
PHCJ 610	Building Healthy Communities	3

### School of Religion

RELG 510	Christian Service	1,2
RELR 404	Christian Service	1,2
RELR 447A	Service Learning Practicum—International Project	1
RELR 540	Wholeness and Health	3
RELT 534A	Service Learning Practicum—International Project	1
RELT 534B	Service Learning Practicum—USA Project	1

<sup>1</sup> Both RXRX 700A & B are required to fulfill the service learning requirement.

## Graduation G.P.A. requirement

The minimum cumulative G.P.A. required is 2.0 for an undergraduate degree and 3.0 for a graduate degree, with no grade on an individual course less than specified by the school offering the degree program. See scholastic standards (p. 39) section of this CATALOG for details.

## Graduation

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, except for Summer Quarter graduation, which requires submission three quarters

prior. Graduate students must submit a *Graduation Petition* for graduate and professional programs. See the form for submission deadlines.

## Commencement exercises

The candidate completing requirements in the Spring Quarter is expected to be present at commencement exercises. Permission for the degree to be conferred in absentia is contingent upon recommendation by 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.

# Enrollment

## Registration

Standard-term registration dates are published on the Web at <http://www.llu.edu/students/university-records/registration-dates.php>. For programs that do not operate on standard-term dates, visit the Registration Portal for specific registration dates and deadlines per student, since these dates may vary depending on where students are in their programs. Deadlines for courses taught in a condensed or extended format may differ from standard terms or program deadlines.

Course-specific deadlines may be found in the course schedule at <http://www.llu.edu/students/university-records/course-schedule.php> by selecting a course and clicking on the Important Dates link. Posted deadlines for registration on the Web and in the Registration Portal are in effect and binding.

Students register online using their Registration Portal. Registration procedure includes addressing Action Items, signing up for courses, and clearing finance. Upon completion of their first registration, students must obtain an ID card at the University Office of Student Affairs. All future interactions in the Student Services Center will require presentation of a valid student ID card.

A late registration period of seven business days is provided for standard-term programs. If the course is offered in an intensive format, registration may be required before the end of the seven days. A late registration fee of \$200 will be charged during these seven business days for standard-term courses.

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

## Change in registration

A change in registration requires reversal of financial clearance in the Registration Portal if (1) financial clearance has been obtained and (2) registration is still open for the student's program. Students have until 11:59 p.m. PST (Pacific Standard Time) the following day, or until the end of registration—whichever is earlier—to complete registration changes and to request financial clearance again. If financial clearance is not obtained by the end of the following day, any changes made in the Registration Portal will be reversed. Students are advised of this process via their LLU email account.

A student may add courses that follow the standard-term University calendar during the first seven calendar days of the quarter. Courses that follow the standard-term University calendar may be dropped during the first 14 days of the quarter without academic penalty. Standard-term course changes after the 14th day of the quarter affect the permanent grade record with a "W" indicating withdrawal. Students may withdraw from a standard-term course prior to 14 calendar days before the final examination week, after which withdrawals are no longer permitted.

## Independent study

Independent study may be undertaken subject to the consent of the department chair and/or the office of the dean of the student's school. The student is responsible for completion of the *Independent Study Plan* (ISP) 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 student's school should be consulted regarding limits on independent study credit earned. Independent study is to be completed in adequate time before graduation to allow recording in the Office of University Records.

## Study load

Usually an academic study load is defined in terms of credit units.

Time Status	Undergraduate	Graduate
Full-time	At least 12 units	At least 8 unit
Three-quarter time	9 – 11.5 units	6 – 7.5 units
Half-time	6 – 8.5 units	4 – 5.5 units
Less than half-time	0 – 5.5 units	0 – 3.5 units

The normal course load, including all coursework 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 coursework upon recommendation of the department and consent of the dean.

A person who is not enrolled in regular courses 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 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 their 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. Before signing the load validation form for the current quarter, the faculty mentor must determine that the student indeed qualified for load validation in the previous quarter.

## Attendance

Regular attendance at all appointments (class, clinic, laboratory, and 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 follow:



- 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 courses, 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 non-enrollment, unless they are on an approved leave of absence (maximum of four academic quarters, including Summer Quarter). For 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 programs 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 re-entry. All graduates are expected to have documented current knowledge in their fields 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 their 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 their school regarding the possibility of maintaining health coverage.

## 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 their 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 website. The Program Withdrawal form and/or the Add/Drop Registration form should be completed as soon as possible after the

student determines that they cannot complete the quarter. These forms must be filed no later than 14 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 unavoidable charges to the student's account. *The tuition refund policy for off-campus students is listed under the applicable school in 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, their status with the University will be changed to inactivated.

## 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 students online.

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. The complete FERPA policy may be found in the *Student Handbook*.

## 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.

Student 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 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 their 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. This evaluation measure only applies to term-based programs.

**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—except in the case of block programs. 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. This only applies to term-based programs. 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 20 academic quarters). 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., and 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 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. 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. 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:

- A student fails to achieve the required G.P.A.
- A student is not successfully completing their education program at the required pace.
- A 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, they 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.

## Withdrawals, leaves of absence, cancellations

Withdrawal or an official leave of absence after the first day of the term counts as a term attended when determining overall term-count eligibility and unit-count eligibility, unless the student does not attend any classes for the given term and receives a 100 percent refund of all fees. For financial aid purposes, a leave of absence is treated the same as a withdrawal from the program. Cancellation of registration on or before the first day of classes does not count as a term attended when determining term-count or unit-count eligibility.

## 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 their case. The completed appeal must be submitted to the director of financial aid, who will present it to the SAP 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 their appeal in writing. The appeal must include the following information:

- A full explanation of the circumstances that led to their inability to meet the minimum progress requirements.
- Supporting documentation verifying the circumstances.
- A personalized academic plan. With the assistance of their academic advisor, the student is expected to explore options available to eliminate deficiencies, as well as develop a realistic term-by-term listing of specific courses to be taken toward graduation and non-course requirements to be completed (e.g., advancement to candidacy, qualifying examinations, dissertation defense). 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 they are again in compliance with the SAP standard.

## Scholastic standards

### Academic standing

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

### 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 non-block 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 follow:

Student Level	Quarter Units
Freshman	0 – 44.9
Sophomore	45 – 89.9
Junior	90 – 134.9
Senior	135+

## 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 coursework 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.
MS	none	Marginally satisfactory performance—approved for the pre-doctoral dentistry (D.D.S.) and advanced dental education programs in the School of Dentistry and for the Doctor of Medicine degree program in the School of Medicine; it is only applicable to S/U graded courses.
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 coursework, 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 an 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 unsatisfactory performance for a 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 for standard-term courses. 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 provost. 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 they are 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 coursework 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 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 <a href="https://home.llu.edu/campus-and-spiritual-life/student-services/academic-life">https://home.llu.edu/campus-and-spiritual-life/student-services/academic-life</a> ( <a href="https://home.llu.edu/campus-and-spiritual-life/student-services/academic-life/">https://home.llu.edu/campus-and-spiritual-life/student-services/academic-life/</a> )—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 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 the course has a duration of more than a single term and may be given by term-based programs for an independent study course (i.e., clinical/field practicum, directed study, or research). It is not to exceed five quarters (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 UW will be given. An IP may be given by nonterm programs when the student has not fulfilled all the requirements of the course and the faculty and the Academic Review (Promotions) Committee judge that the deficiency can be remediated prior to the start of the next academic year.

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.

## Grade change

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

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

## Repeating a course

Once grades have been posted for a course, a student wishing to improve their 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 the student's written or electronic request signature in accordance with FERPA.

# Transfer credit

## Definitions

### Accredited institution:

An institution of higher education that has been granted institutional accreditation from a U.S. accrediting organization recognized by the U.S. Department of Education and/or the Council for Higher Education Accreditation (CHEA); or an international institution of higher education

that is recognized as a degree-granting institution by the government (e.g., Ministry of Education) in the country where the institution is located.

#### **Transfer credit:**

Academic credit earned at an accredited college or university other than Loma Linda University and applied toward a degree program at Loma Linda University.

#### **Extramural credit:**

Academic credit earned at another accredited college or university after matriculating to Loma Linda University, for the purpose of transferring the credit to Loma Linda University to apply towards a degree program.

### **Credit accepted for transfer**

The Office of University Records will determine the transferability of courses according to University policy and standard transfer practices of accredited higher education institutions in the United States.

In addition to the requirement for transfer credit to come from an accredited institution, the quality of the learning experience is considered. Credit must also be appropriate and applicable to the LLU program to which it is being transferred.

Generally, credit for comparable courses earned in traditional classroom activities is accepted as transfer. The University may require a written, oral, or practical examination in any course for which transfer credit is requested. In such cases, an examination fee may be required.

Extramural credit is to receive prior approval by University Records to ensure that course(s) meet transfer standards before the student enrolls in the selected course(s). Official transcripts documenting the completion of extramural credit is to be received by University Records no later than 15 business days prior to the end of the term in which the degree is to be awarded.

Credit is not awarded for extension courses not accepted toward a degree at the offering institution.

#### **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.

### **Undergraduate transfer credit**

The purpose of general education requirements is to broaden knowledge beyond what is required in the baccalaureate field of study. For this reason, general education courses are expected to be completed in an institution providing liberal arts versus a career-focused institution in which courses may be taught with emphasis unique to a specific vocation.

No transfer credit is given for a course briefly addressing the chief topics of a broad field of knowledge if taken after a more comprehensive course on the topic. For example, a one-quarter survey/introductory physics course taken after general physics sequence or any portion of the sequence.

A minimum grade of "C" (2.0) is required for all courses accepted for transfer credit. Grades of "C-" or below are not acceptable. Courses taken for pass/fail (S/U) will be accepted if the institution from which it was taken states in their catalog and/or notes on the transcript that a pass is equivalent to grade of "C" (2.0) or better. If it is equivalent to a grade of "C-", the course will not transfer.

Remedial, developmental education, or other non-academic level coursework is not accepted for transfer or calculated in a student's grade point average.

A maximum of 105 quarter units of lower-division credit will be accepted from accredited junior/community colleges.

#### **Vocation-specific courses**

Credit is accepted for vocation-specific courses to count toward units required in baccalaureate degree completion programs based on the following criteria:

- the school/program is recognized by the same programmatic accreditation organization that accredits the LLU program in the same discipline,
- the student has successfully passed the same program-specific licensure required of graduates of the LLU program,
- the course is substantially equivalent to coursework at LLU,
- the courses are applicable to the LLU degree program to which the student is applying/currently enrolled, and must be within the 105 quarter-unit limit accepted from a junior/community college.
- Units transferred are based on actual units earned as posted on the awarding institution's transcript—for a maximum of 50 quarter units. Only units for didactic courses are transferred—no clinical courses.

#### **U.S. service schools**

Credit may be given for transfer from U.S. service schools carrying a baccalaureate credit recommendation in the latest Guide to the Evaluation of Education Experiences in the Armed Services (<https://www.acenet.edu/Programs-Services/Pages/Credit-Transcripts/military-guide-online.aspx>) provided by the American Council on Education (ACE). An official Joint Services Transcript (JST) must be submitted for evaluation. Credit must be for subject matter relevant to the degree program at LLU. Credit may be awarded for physical education activity based on basic training as documented on a JST or physical education activity waived on submission of DD-214.

#### **Credit by examination**

Credit is granted for scores of 3, 4, or 5 on Advanced Placement (AP) examinations taken while enrolled in secondary school and submitted by the College Entrance Examination Board. The amount of credit assigned AP examinations may not duplicate credit earned in subsequent college courses covering the same or similar content. In such cases, transfer credit will be based on the latest credit earned which would be the college course(s).

Credit is granted for scores submitted by the College Board for examinations of the College Level Examination Program (CLEP) except for English composition.

- Credit for courses is granted according to recommendations by the American Council on Education (ACE).
- Students are allowed to challenge a given course by examination only once.
- Students must complete all CLEP credit within six months after the posting of the initial LLU degree audit online. Credit will not



be awarded if previous coursework at the equivalent or at a more advanced level has been awarded or for courses that have been attempted and failed.

Credit is granted for scores of 5, 6, or 7 earned on International Baccalaureate (IB) Examinations for higher-level subject examinations. General elective credit only is given. In other words, it does not fulfill specific subject requirements. For example, credit in physics may fulfill elective credit in natural sciences, but does not fulfill a requirement for a general physics sequence. No credit is granted for “standard” or “subsidiary” level subjects.

For additional information on undergraduate transfer credit, see LLU policies on the LLUH One Portal (<https://one.lluh.org/>).

## Graduate transfer credit

For acceptance as transfer credit, courses must not have been previously applied to another degree program or curriculum. Academic standing may be given for courses applied to another degrees.

Courses must be applicable to a graduate degree program at the issuing institution.

The maximum number of didactic units that may be transferred toward an LLU graduate degree may not exceed 20 percent of the minimum didactic units required for the degree. In order to preserve the unique character of degrees from LLU, the combination of transfer credit and advanced standing must not exceed 40% of the didactic coursework at LLU as specified in the University Catalog, which excludes internships, practica, clinical experiences, research and courses in religion. The precise amount of transfer credit which is applicable toward a particular degree will be determined by the specific school and department concerned, not to exceed limit set here.

Extramural credits taken through a consortium agreement (e.g., NEXus – the Nursing Education Xchange) may exceed the unit limit for transfer credit stated above. Consortium agreements must be approved by University Academic Affairs Committee.

A minimum grade of “B” (3.0) is required for all courses accepted for transfer credit. Transfer of courses completed more than seven years prior to registration in the LLU graduate program are not eligible for transfer.

Transfer-credit courses must be equivalent to courses identified in the program curriculum outlined in the University Catalog or defined as a cognate.

Extension credits earned at another accredited institution are not accepted for transfer credit unless they are applicable to a graduate degree at the institution awarding the credit and must be approved by the dean of the school (LLU).

For additional information on graduate transfer credit, see LLU policies on the LLUH One Portal (<https://one.lluh.org/>).

## Financial Policies and Information

Students are 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. Registration is not complete until tuition and fees for each term are paid; therefore, students should be prepared to make these payments during scheduled registration periods for each academic year. Tuition and fees

may vary from amounts shown. Please refer to the Student Account Disclosure statement for additional student account financial information ([llu.edu/assets/central/ssweb/studentfinance/documents/disclosure.pdf](http://www.llu.edu/assets/central/ssweb/studentfinance/documents/disclosure.pdf)) (<http://www.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, and laboratory fees—may also appear on the student account. The following criteria govern the enrollment fee:

1. Students who are accepted into a degree program and are 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 non-degree students for more than 4 units (5 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. Loma Linda University 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, or on-campus courses are taken.
7. Other school-specific fees will be charged independent of the enrollment fee.
8. Fees are refunded only during the 100 percent refund period.

### Other fees

Late payment fee (term)	\$100
Late registration fee	\$200
Returned payment fee	\$25
Lost check reissue fee	\$15
Returned direct deposit fee	\$15

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.

## General practices

### Tuition payments/refunds

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). Fees are refunded only during the 100 percent refund period.

## 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 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 Collections Office on 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 Collections 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 U.S. 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. International students can also make payments in their local currency through the Flywire Service (<https://www.flywire.com/>). In case a payment is returned, a \$25 returned-item fee will be assessed. Payments are accepted online at <http://www.llu.edu/students/student-finance/>, by mail, and in person at Student Finance. Account credits resulting from financial

aid, tuition refunds, or other payments and adjustments, may be credited back to any bankcard used—to the extent of the card payment made—before a refund direct deposit or check will be issued.

Please note that student identification cards are required for enrolled students to obtain services at the Student Services 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 direct deposits or checks; no cash withdrawals or automatic account withdrawal services are available.

Student withdrawal requests made online, in person at the Student Finance cashier's window, or by fax during office hours, completed 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.

Direct deposit authorization and online account withdrawals can be initiated by logging into <http://ssweb.llu.edu/loginso> (<http://ssweb.llu.edu/loginso/>) 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.

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.

Students are cautioned to carefully budget the use of withdrawn funds 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 as well as 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 their program.

## Housing

If a student is interested in on-campus/residential housing, application may be made online at [llu.edu/central/housing](http://llu.edu/central/housing) (<http://www.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. Non-degree students taking more than 4 units (5 units for School of Allied Health Professions) may also be covered by the plan. Please view the student registration portal for notice of coverage. A non-degree student may request and pay for health plan coverage if they are a part-time student who has been accepted into a board-approved (degree or certificate) program and is currently registered for up to and including 4 units. For further information, see the Student Health Plan in the Student Life section of this CATALOG.

## Student aid

The Office of Financial Aid strives to provide prospective and enrolled students with information and resources to financially support their educational goals. Through the administration of federal student aid programs, state grant programs, and University-based institutional loans and scholarships, the financial aid office assists students in removing financial barriers to obtaining a higher education. It is the responsibility of LLU to ensure that funds are administered according to federal and state law.

### Applying for aid

To apply for financial aid, citizens and eligible noncitizens must complete a Free Application for Federal Student Aid (FAFSA), available online at <https://studentaid.gov/h/apply-for-aid/fafsa> (<https://studentaid.gov/h/apply-for-aid/fafsa/>). The FAFSA became available October 1, 2021, for the 2022-2023 academic year. Completing an application as soon as possible is strongly recommended. Results of the FAFSA, called the Student Aid Report (SAR), will be electronically sent to Loma Linda University if the student has listed the institution on the application. The school code for LLU is 001218. The FAFSA must be completed for each academic year.

International students are not eligible for U.S. government assistance, but may receive private funding, such as personal educational loans, from a lending institution or bank. Lenders may require a cosigner who is a U.S. citizen or permanent resident. Please contact the lending institution for more information on the application process as well as the terms and conditions of the applicable loans.

Students must be enrolled in an eligible degree or certificate program to receive financial aid. Additionally, most financial aid programs require a student to be attending at least half time in eligible units/hours.

### Eligibility

Eligibility for need-based financial aid is determined by many factors, including the family's income, assets, family size, and number in college. All information is used to calculate the expected family contribution (EFC); the formula is found in Part F of Title IV of the Higher Education Act (HEA) of 1965, as amended. Updates are published in the *Federal Register*. Eligibility for need-based funds is calculated by subtracting a student's EFC from the estimated cost of attendance.

Non-need-based financial aid is not related to one's EFC. If a student requires additional aid, they may apply for other non-need-based forms of aid to supplement the cost of attendance. Non-need-based aid may not exceed a student's estimated cost of attendance minus any other assistance they have been awarded. Students must apply for need-based funding and complete a FAFSA to receive most forms of non-need-based assistance.

Merit-based aid is given without regard to financial need and is typically awarded based on academic achievements, talents, demographic characteristics, and other criteria. Students seeking merit-based aid may apply to outside agencies or contact their programs to inquire about availability. The Office of Financial Aid does not select recipients for merit-based aid.

For more information on eligibility and general requirements, please visit <http://www.llu.edu/students/financial-aid/eligibility.php>.

### Financial aid awards

If a student is eligible for financial aid, their need may be funded by various sources. Students who met the priority funding deadline (March 2, 2022, for the 2022-2023 academic year) were given greatest consideration during the awarding process. Following the priority funding deadline, most funds are distributed on a first-come, first-served basis due to the limited availability of certain awards.

### Types of aid

For detailed information on the types of aid available through the Office of Financial Aid, please visit <http://www.llu.edu/students/financial-aid/types-of-aid.php>.

Aid available to **undergraduate** students:

- Federal PELL Grant
- Federal Supplemental Educational Opportunity Grant (FSEOG)
- Cal Grant (California residents only)
- Direct Subsidized Stafford Loan

Aid available to **undergraduate** and **graduate** students:

- Direct Unsubsidized Stafford Loan
- Direct PLUS Loan (parent and graduate)
- Federal Work Study (FWS)
- Institutional loans and scholarships
- Private educational loans from outside lenders

### Reporting outside assistance

Students are required to report any outside financial aid assistance to the Office of Financial Aid. Outside assistance must be coordinated with any federal, state, or institutional funds to prevent an over-award. Failure to report outside assistance may result in the owing of funds to either the institution or the U.S. Department of Education.

Drive, Suite 200, Boulder, CO 80301. Web page: [wiche.edu/psep](http://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.

## Veterans benefits

Loma Linda University is approved for the training of veterans and other eligible persons under Title 38 of the U.S. Code. Information regarding eligibility for these programs may be obtained by calling 1-888-GIBILL-1 (1-888-442-4551). Application for benefits must be made directly to the Veterans Administration (VA) and may be done via the web at [www.gibill.va.gov](http://www.gibill.va.gov) (<http://www.gibill.va.gov>).

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. Veterans cannot be certified until they register and submit the VA forms found in the Academic Resources section at [home.llu.edu/registrar](http://home.llu.edu/registrar) (<http://home.llu.edu/registrar/>).

## Admissions

Loma Linda University admissions policies apply to all students—including veterans—regarding evaluation of credit for previous education and training. LLU maintains a record of all previous academic education and training for all students, including veterans and eligible persons. Credit granted from previous education will be indicated on the degree audit, when appropriate, which may shorten time to degree completion. The degree audit is available to the student and advisor.

## Benefit status

As long as the Office of University Records has received and processed the following forms before deadlines specified on the Registration Portal, the student will not be penalized if funding from the Department of Veterans Affairs under chapter 31 or 33 is delayed:

1. Certificate of eligibility for entitlement to education assistance.
2. VA Enrollment Certification form.
3. VA Request to Use Benefits form.

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 student will not be certified by the VA until they progress to the next academic year.

For more information, utilize the links to the Veterans Information site under the "Veterans" button online at [home.llu.edu/registrar](http://home.llu.edu/registrar) (<http://home.llu.edu/registrar/>).

## 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

# SCHOOL OF ALLIED HEALTH PROFESSIONS

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## Dean's welcome



Welcome to the School of Allied Health Professions, where your future begins. If you are considering a new allied health career or returning to advance your current one, we are committed to providing you a quality professional education and fostering your personal and spiritual development while you are attending our school. We encourage all of our students to learn not only in the classroom, but through mission and service both locally and globally. We are glad you are here, and we are ready to help you achieve your academic goals.

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; and health information management (formerly medical record administration), 1963.

The following curricula were added since the school was established: 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-care administration, 2008; cardiac electrophysiology technology, 2009; and 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 at La Sierra University (formerly Loma Linda University, La Sierra campus). The program was transferred to the School of Allied Health Professions in 1987. Policies and procedures governing programs currently offered are detailed in this section of the CATALOG following information that pertains to all School of Allied Health Professions students.

## 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 teaching and healing 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 members 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 empathetic attitudes that contribute to the welfare and well-being of patients.
2. Help the student accept responsibility for integrity, ethical relationships, and empathetic 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 in this country and elsewhere.

The School of Allied Health Professions has adopted the University's institutional learning outcomes (p. 19).

## Evaluation of mission and institutional learning outcomes—Wholeness Portfolio

Wholeness Portfolio courses focus on student development aligned with Loma Linda University's mission-focused learning environment that fosters transformative learning through the following:

- Emphasis on health and wholeness informed by the Adventist perspective.
- Integration of faith as part of the Loma Linda University student experience.
- Opportunities to think critically, problem-solve, and reflect.
- Analysis of unconscious bias in support of diversity, equity, and inclusion.
- Engagement with diverse communities through service.

## General regulations

University students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

## Admissions policies and information

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. School admissions committees 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 applicants possess the capabilities required to complete the full curriculum in the allotted time and to achieve the levels of competence required. Acceptance into any program is contingent upon the recommendation of the department conducting the program.

Most programs require an interview with the faculty. 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 as well as the practices of the supporting Seventh-day Adventist 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 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 or emailed to [askalliedhealth@llu.edu](mailto:askalliedhealth@llu.edu).

### Apply early

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

Late applications are considered as long as space is available. Notifications are generally sent between January 1 and May 15, depending on varying application deadlines, 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 a month prior to the start of the program.

### 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 that makes the final decision regarding acceptance.

### Procedure

The procedure for application and acceptance is given below. All correspondence is to be sent to the Office of Admissions and Records, School of Allied Health Professions, Loma Linda University, Loma Linda, CA 92350 or emailed to [askalliedhealth@llu.edu](mailto:askalliedhealth@llu.edu). All official transcripts, international evaluations, and test scores are to be sent to Admissions Processing, Loma Linda University, 11139 Anderson Street, Loma Linda, CA 92350.

1. Apply online at [www.llu.edu/central/apply](http://www.llu.edu/central/apply). (<http://www.llu.edu/central/apply/>) Be prepared to enter the names and email addresses for your recommenders. Have dates of attendance for all colleges/universities ready for entry on the application.
2. Request that transcripts of all college coursework be sent to Admissions Processing. High school transcripts are required of all applicants in order to verify graduation. High school transcripts are not required if you have completed either an associate or bachelor's degree—unless coursework in high school is used to satisfy a requirement.
3. Upon receipt of the notice of acceptance, submit the required deposit to confirm acceptance.
4. Send health records or certificates to Student Health Services, 24785 Stewart Street, Evans Hall, Suite 111, Loma Linda, CA 92354.

## Entrance requirements

### Subject/Diploma requirements

High school and college subject requirements are outlined in the respective programs. Students are required to furnish official transcripts as evidence of completion of high school in order to be granted admission to undergraduate programs in any of the schools of the

University. Applicants who have completed either an associate or bachelor's degree are exempt from submitting a high school transcript unless coursework in high school is used to satisfy a subject requirement. 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 coursework (science and non-science 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

Because the student has chosen a professional field for their work, it is important that the student portray a professional image to those with whom they come into contact. Inappropriate dress, grooming, or conduct detracts from patients' confidence in the quality of their care. In addition, Loma Linda University's affiliating hospitals have standards that are generally reflected in the guidelines below. For these reasons, the School of Allied Health Professions provides the following standards that are required of the student while enrolled in the program.

- Hair should be neat and clean. If long, it may be required to be tied back.
- Mustaches and beards must be neatly trimmed.
- Makeup should be natural in appearance.
- Jewelry should be professional in appearance and safe for clinical setting.
- Fingernails should be closely trimmed, and should not interfere with patient safety and comfort during treatments.
- Words, pictures, and/or symbols displayed on clothing should be consistent with a Christian institution and sensitive to diverse student and patient populations.

## 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 their 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 coursework, at this University. A minimum grade of C (2.0) or better is required for all B.S. and post-baccalaureate 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 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
- are in a block program

The still in-progress coursework may not exceed eight 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 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 coursework 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 averages 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 coursework 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 coursework.)

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 re-register for the course. 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 at a minimum:

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 school's Administrative Council 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 themselves 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. 33), 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 policies and 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 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 (2022-2023)

(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	Per Unit	per unit rate for the academic year

#### Allied Health Sciences

##### REHABILITATION SCIENCE—DOCTOR OF PHILOSOPHY

Year	Units	Tuition	Per Unit
Multi Year	Units vary per quarter	Varies	\$740

##### HEALTH PROFESSIONS EDUCATION—MASTER OF SCIENCE—Units vary (online and face-to-face)

Year	Units	Tuition	Per Unit
Multi Year	Units vary per quarter	Varies	\$800

##### HEALTH PROFESSIONS EDUCATION—CERTIFICATE—units vary (online and face-to-face)

Year	Units	Tuition	Per Unit
Multi Year	Units vary per quarter	Varies	\$800

#### Cardiopulmonary Science

##### RESPIRATORY CARE—BACHELOR OF SCIENCE (TRADITIONAL)

Year	Units	Tuition	Per Unit
1	53	\$32,436	\$612
2	62	\$37,944	\$612

##### RESPIRATORY CARE—BACHELOR OF SCIENCE (POSTPROFESSIONAL)

Year	Units	Tuition	Per Unit
1	48	\$21,600	\$450
2	12	\$5,400	\$450

##### RESPIRATORY CARE—MASTER OF SCIENCE RESPIRATORY CARE

Year	Units	Tuition	Per Unit
1	29-34	\$17,980-\$21,080	\$620
2	11-13	\$6,820-\$8,060	\$620

##### POLYSOMNOGRAPHY—CERTIFICATE

Year	Units	Tuition	Per Unit
1	27	\$12,825	\$475

#### Clinical Laboratory Science

##### CLINICAL LABORATORY SCIENCE—BACHELOR OF SCIENCE

Year	Units	Tuition	Per Unit
1	63	\$42,840	\$680
2	63	\$42,840	\$680

##### PHLEBOTOMY—SCHOOL CERTIFICATE

Year	Units	Tuition	Per Unit
1	5	\$2,365	\$473

#### Communication Sciences and Disorders

##### COMMUNICATION SCIENCES AND DISORDERS—BACHELOR OF SCIENCE

Year	Units	Tuition	Per Unit
1	48-51	\$29,088-\$30,906	\$606
2	39-47	\$23,634-\$28,482	\$606

##### COMMUNICATION SCIENCES AND DISORDERS—MASTER OF SCIENCE (TRANSITIONAL PROGRAM)

Year	Units	Tuition	Per Unit
1	37	\$29,378	\$794
2	39	\$30,966	\$794
3	23	\$18,262	\$794

**Note:** CMSD 589 (<http://llucatalog.llu.edu/search/?P=CMSD%20589>) Remediation/Advance Directed Teaching, CMSD 599 (<http://llucatalog.llu.edu/search/?P=CMSD%20599>) Remediation/Externship (Remediation Clinic) Additional Charge  
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 one unit at the regular tuition rate.

##### COMMUNICATION SCIENCES AND DISORDERS—MASTER OF SCIENCE

Year	Units	Tuition	Per Unit
1	34	\$26,996	\$794
2	23	\$18,262	\$794

**Note:** CMSD 589 (<http://llucatalog.llu.edu/search/?P=CMSD%20589>) Remediation/Advance Directed Teaching, CMSD 599 (<http://llucatalog.llu.edu/search/?P=CMSD%20599>) Remediation/Externship (Remediation Clinic) Additional Charge  
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 one unit at the regular tuition rate.

##### SPEECH-LANGUAGE PATHOLOGY—DOCTORATE

Year	Units	Tuition	Per Unit
1	18	\$14,742	\$819
2	24	\$19,656	\$819
3	9	\$7,371	\$819

**Health Informatics, Information Management, and Administration  
HEALTH INFORMATION MANAGEMENT—BACHELOR OF SCIENCE**

Year	Units	Tuition	Per Unit
1	47	\$20,210	\$430
2	44	\$18,920	\$430
Part-time	Units Vary	Varies	\$430

**HEALTH INFORMATION MANAGEMENT—CERTIFICATE**

Year	Units	Tuition	Per Unit
1	45	\$19,350	\$430
2	40	\$17,200	\$430

**HEALTH INFORMATICS—MASTER OF SCIENCE (ON CAMPUS AND ONLINE)**

Year	Units	Tuition	Per Unit
1	24	\$17,040	\$710
2	24	\$17,040	\$710

**HEALTH-CARE ADMINISTRATION—BACHELOR OF SCIENCE**

Year	Units	Tuition	Per Unit
Multi Year	Units Vary	Varies	\$490

**CODING SPECIALIST—CERTIFICATE**

Year	Units	Tuition	Per Unit
1	20	\$3,980	\$199
2	12	\$2,388	\$199

**Nutrition and Dietetics**
**NUTRITION AND DIETETICS—BACHELOR OF SCIENCE (TEACH OUT)**

Year	Units	Tuition	Per Unit
1	50	\$31,800	\$636
2	48	\$30,528	\$636

**NUTRITION AND DIETETICS—b.s. AND m.s. (COORDINATED PROGRAM)**

Year	Units	Tuition	Per Unit
1	50	\$31,800	\$636
2	48	\$30,528	\$636
3	48	\$37,008	\$771

**NUTRITION AND DIETETICS—MASTER OF SCIENCE (DPD TRACK)**

Year	Units	Tuition	Per Unit
1	37	\$28,527	\$771
2	37	\$28,527	\$771
3	6	\$4,626	\$771

**NUTRITION AND DIETETICS—MASTER OF SCIENCE (FOR THOSE WHO HAVE AN RD)**

Year	Units	Tuition	Per Unit
1	48	\$37,008	\$771

**NUTRITION AND DIETETICS—MASTER OF SCIENCE  
(COORDINATED PROGRAM FOR BACHELOR'S DEGREE GRADUATES IN NON-NUTRITION AREAS)**

Year	Units	Tuition	Per Unit
1	48	\$30,528	\$636
2	46	\$35,466	\$771
3	33	\$25,443	\$771

**Occupational Therapy**
**OCCUPATIONAL THERAPY—Doctor OF OCCUPATIONAL THERAPY (ENTRY LEVEL)**

Year	Units	Tuition	Per Unit
1	56	\$42,000	\$750

**OCCUPATIONAL THERAPY—MASTER OF OCCUPATIONAL THERAPY (ENTRY LEVEL- MOT) (teach out)**

Year	Units	Tuition	Per Unit
2	49	\$34,300	\$700
3	16	\$11,200	\$700

**OCCUPATIONAL THERAPY—DOCTOR OF OCCUPATIONAL THERAPY (postprofessional)**

Year	Units	Tuition	Per Unit
1	18	\$13,050	\$725
2	24	\$17,400	\$725
3	11	\$7,975	\$725

**OCCUPATIONAL THERAPY—DOCTOR OF OCCUPATIONAL THERAPY (POSTPROFESSIONAL/intense track)**

Year	Units	Tuition	Per Unit
1	39-42	\$28,275-\$30,450	\$725
2	11-14	\$7,975-\$10,150	\$725

**Orthotics and prosthetics**
**ORTHOTICS AND PROSTHETICS—B.S./M.S.O.P**

Year	Units	Tuition	Per Unit
1	54	\$31,482	\$583
2	63	\$36,729	\$583
3	39	\$22,737	\$583

**ORTHOTICS AND PROSTHETICS—M.S.O.P Hybrid**

Year	Units	Tuition	Per Unit
1	40	\$24,000	\$610
2	60	\$36,600	\$610

**Physical Therapy**
**PHYSICAL THERAPIST ASSISTANT—ASSOCIATE IN SCIENCE (does not include prerequisite units)**

Year	Units	Tuition	Per Unit
1	57	\$26,106	\$458
2	6	\$2,748	\$458

**PHYSICAL THERAPY—DOCTOR OF PHYSICAL THERAPY (ENTRY LEVEL)**

Year	Units	Tuition	Per Unit
1	71	\$43,807	\$617
2	66	\$40,722	\$617
3	21	\$12,957	\$617

**PHYSICAL THERAPY—DOCTOR OF PHYSICAL THERAPY (POSTPROFESSIONAL 45-UNIT TRACK)**

Year	Units	Tuition	Per Unit
1	35	\$22,155	\$633
2	10	\$6,330	\$633

**PHYSICAL THERAPY—DOCTOR OF PHYSICAL THERAPY (POSTPROFESSIONAL 66-UNIT TRACK)**

Year	Units	Tuition	Per Unit
1	32	\$20,256	\$633
2	34	\$21,522	\$633

**PHYSICAL THERAPY—DOCTOR OF PHILOSOPHY**

Year	Units	Tuition	Per Unit
1	30	\$19,530	\$651
2	36	\$23,436	\$651

**Physician Assistant Sciences****PHYSICIAN ASSISTANT—MASTER OF PHYSICIAN ASSISTANT**

Year	Units	Tuition	Per Unit
1	76	\$55,860	\$735
2	52	\$38,220	\$735

**Radiation Technology****MEDICAL RADIOGRAPHY—ASSOCIATE IN SCIENCE**

Year	Units	Tuition	Per Unit
1	37	\$18,500	\$500
2	23	\$11,500	\$500

**BS – RADIATION SCIENCE (entry level)**

Year	Units	Tuition	Per Unit
1,2,3	Units may vary depending upon units transferred into Loma Linda University.	Varies	\$500

**RADIATION SCIENCES—BACHELOR OF SCIENCE (postprofessional)**

Year	Units	Tuition	Per Unit
1,2	Units may vary depending upon units transferred into Loma Linda University.	Varies	\$500

**RADIATION THERAPY—BACHELOR OF SCIENCE**

Year	Units	Tuition	Per Unit
1- (w/ RT background)	38	\$25,650	\$675
2- (w/ RT background)	42	\$28,350	\$675
1- (w/o RT background)	52	\$35,100	\$675
2- (w/o RT background)	42	\$28,350	\$675

**DIAGNOSTIC MEDICAL SONOGRAPHY—BACHELOR OF SCIENCE (GENERAL/ VASCULAR TRACK)**

Year	Units	Tuition	Per Unit
1- (General/ Vascular)	37	\$24,975	\$675
2- (General/ Vascular)	33	\$22,275	\$675
3- (General/ Vascular)	9	\$6,075	\$675

**DIAGNOSTIC MEDICAL SONOGRAPHY—BACHELOR OF SCIENCE (CARDIAC TRACK)**

Year	Units	Tuition	Per Unit
1- (Cardiac)	38	\$25,650	\$675
2- (Cardiac)	34	\$22,950	\$675
3- (Cardiac)	6	\$4,050	\$675

**DIAGNOSTIC MEDICAL SONOGRAPHY—CARDIAC (CERTIFICATE)**

Year	Units	Tuition	Per Unit
1- (Cardiac)	17	\$14,025	\$825
2- (Cardiac)	4	\$3,300	\$825

**NUCLEAR MEDICINE TECHNOLOGY—BACHELOR OF SCIENCE (NON-RAD TECH BACKGROUND)**

Year	Units	Tuition	Per Unit
1	56	\$37,800	\$675
2	59	\$39,825	\$675
3	13	\$8,775	\$675

**NUCLEAR MEDICINE TECHNOLOGY—BACHELOR OF SCIENCE (RAD TECH BACKGROUND)**

Year	Units	Tuition	Per Unit
1	44	\$29,700	\$675
2	51	\$34,425	\$675
3	13	\$8,775	\$675

**SPECIAL IMAGING TECHNOLOGY: ct AND mri—CERTIFICATE**

Year	Units	Tuition	Per Unit
1	19	\$12,825	\$675
2	7	\$4,725	\$675

**SPECIAL IMAGING TECHNOLOGY: MAGNETIC RESONANCE IMAGING (MRI) —Certificate**

The two-quarter MRI program is offered twice per year. One cohort starts Spring Quarter and one cohort starts Autumn Quarter. Part-time, 9-month option available to qualified students.

Quarter	Units	Tuition	Per Unit
1	7	\$4,725	\$675
2	9	\$6,075	\$675

**SPECIAL IMAGING TECHNOLOGY: CT—CERTIFICATE**

Year	Units	Tuition	Per Unit
1	14	\$9,450	\$675

**RADIATION SCIENCES—MASTER OF SCIENCE IN RADIATION SCIENCES**

Year	Units	Tuition	Per Unit
1	19	\$12,825	\$675
2	26	\$17,550	\$675

**RADIOLOGIST ASSISTANT—MASTER OF SCIENCE IN RADIATION SCIENCES**

Year	Units	Tuition	Per Unit
1	40	\$32,000	\$800
2	35	\$28,000	\$800

**CARDIAC AND VASCULAR IMAGING—CERTIFICATE**

Year	Units	Tuition	Per Unit
1	30-33	\$15,000-\$16,500	\$500
2	7	\$3,500	\$500



**CARDIAC ELECTROPHYSIOLOGY TECHNOLOGY—ASSOCIATE IN SCIENCE**

Year	Units	Tuition	Per Unit
1	49	\$24,500	\$500
2	13	\$6,500	\$500

**NOTE: Tuition excludes a quarterly enrollment fee****Supplies**

Estimated annual expense of \$1,600-\$2,000 for supplies (textbooks, professional apparel, and materials), depending on program and year of study.

**Program specific fees**

\$65	Examsoft Tech fee for Entry Level DPT, PPDPT and PhD PT
\$45	Quarterly fee for Medical Radiography, AS
\$50	Quarterly fee for Radiation Therapy, BS (w/o and with RT), Nuclear Medicine, BS (RT and Non-RT, Diagnostic Medical Sonography, BS and Cert. (General and Cardiac)
\$1250	Quarterly fee for M.S.O.P. Hybrid year 2 only

**Special charges**

\$25	Application fee for Phlebotomy Program
\$60	Application fee for all other SAHP programs. There is no school application fee for DPT, OT, and PA.
\$30	Reapplication
\$500	Acceptance deposit, nonrefundable (applied on tuition)—M.P.A.
\$500	Acceptance deposit, nonrefundable (applied on tuition)—entry-level D.P.T.
\$200	Acceptance deposit, nonrefundable (applied on tuition)—CMSD M.S. and TM, PP D.P.T., entry-level OT, O.T.D.; and entry-level M.S.O.P.
\$100	Acceptance deposit, nonrefundable (applied on tuition)—all other SAHP programs (excludes Phlebotomy, which is \$25)
\$200	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
\$950	Enrollment fee (not applicable to some online programs)

**On- and off-campus student housing**

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) (<http://www.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.

**Robert and Ruth Hervig SAHP 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.

**Cardiopulmonary Sciences****Cardiopulmonary Sciences Scholarship Fund**

The CPS scholarship fund is given to students enrolled in the department who require financial aid.

**American Medical Response Southern California Scholarship Fund**

The American Medical Response Scholarship is given to a student who demonstrates excellence in the clinical practice of emergency medical service and outstanding academic achievement in the Emergency Medical Care Program.

**Faculty Award**

The Faculty Award is presented to a student from the Emergency Medical Care B.S. degree, and/or the postprofessional Respiratory Care B.S. degree, and/or Masters in Respiratory Care (M.S.R.C.) programs who has shown promise of outstanding professional achievement and whose performance is in harmony with the objectives and goals of the University.

**Louisa & Peter Jezerinac Cardiopulmonary Scholarship**

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

**Robert L. Wilkins Memorial Scholarship**

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.

**Loma Linda University Medical Center and Children's Hospital, Dept. of Respiratory Care Scholarship**

The LLUMC & LLUCH Department of Respiratory Care scholarship fund is given to students enrolled in the department.

**Brian Po-Lin Lee Cardiopulmonary Science Award**

The Brian Po-Lin Lee CPS scholarship fund is given to students enrolled in the department who demonstrate a charismatic quality both in class and clinical setting, and who spend time helping other colleagues in class and clinical setting.

**Cardiopulmonary Scholarship for Clinical Excellence in Respiratory Care**

The CPS scholarship for Clinical Excellence in Respiratory Care fund is given to students enrolled in the department who excel in clinical practice in respiratory care.

## 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 financial need.

### Dr. James L. Welch Scholarship

The Dr. James L. Welch Scholarship is presented to CLS students interested in education, research or treatment related to Acquired Immune Deficiency Syndrome .

### Faculty Award

The Faculty Award is presented to a senior clinical laboratory science student who has shown promise of outstanding professional achievement and who intends to pursue a career in the area of laboratory medicine. Selection is based on recommendation of the faculty.

### Moncrieff Scholarship

The Moncrieff Scholarship 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

The Walsch-Loock Scholarship is presented annually to a clinical laboratory science student on the basis of need, leadership capabilities, academic achievement, and community service orientation.

### John Lewis Endowment Fund

Students enrolled in the CLS program with financial need. Preference given to students coming from outside the United States to attend the school.

## Communication Sciences and Disorders (CSMD)

### Evelyn Britt Promising Student Award

The Evelyn Britt Promising Student Award is presented to outstanding clinical and/or academic senior-year students enrolled in the department who have potential to continue with graduate studies.

### Speech-Language Pathology and Audiology Scholarship Endowment

The Speech-Language Pathology and Audiology Scholarship Endowment is given to students in the CMSD program to provide financial aid assistance.

## Health Informatics, Information Management, and Administration

### Elizabeth M. Guerra Scholarship

The Elizabeth M. Guerra 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.

### Davidian Scholarship

The Davidian Scholarship Fund is for female students enrolled in the HIIM program that are 30 years of age or older.

### 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.

### The Rising Star Award

The Rising Star Award is presented to a senior student whose overall performance exemplifies significant potential for future professional contribution and contributions to the department and/or University.

## Health Informatics, Information Management, and Administration

The Health Health Informatics, Information Management, and Administration Scholarship is given to students enrolled in the department to provide financial aid assistance.

### Margaret B. Jackson Scholarship

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

## Nutrition and Dietetics

### Nutrition and Dietetics Alumni Association Scholarship Award

Given to a student based on scholarship and promise of professional achievement.

### Kathleen Keen Zolber Scholarship

The Kathleen Keen Zolber Scholarship is given to a student in recognition of scholarship and promise of outstanding professional achievement.

### Jennie S. Hudson Scholarship

The Jennie S. Hudson Scholarship is given to students enrolled in the department to provide assistance based on academic performance and promise of professional achievement.

### Martha Miller Scholarship Award

The Martha Miller Scholarship Award is given to a student based on scholarship and promise of outstanding professional achievement.

### Nutrition and Dietetics Scholarship Endowment Fund

The Nutrition and Dietetics Scholarship Endowment Fund is given to a student based on scholarship and promise of professional achievement.

### Ruth Little Nelson Scholarship Award

The Ruth Little Nelson Scholarship Award is presented to a student who has demonstrated leadership, integrity, dependability, and initiative.

### **Winifred Van Pelt Schmitt Scholarship Endowment**

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

### **Georgia W. Hodgkin Scholarship**

To fund scholarships for students enrolled in the department.

### **Erma Vhymeister Award**

The family of Erma Vhymeister requests these funds be given to a student who has good scholastic ability, is Spanish speaking and is South American or European.

### **Dr. Donna Rubano Galluzzo Scholarship**

The Dr. Donna Rubano Galluzzo Scholarship is given to students enrolled in a Nutrition and Dietetics program within the school. Recipients must embody the mission and values of the University to further the healing and teaching ministry of Jesus Christ "to make man whole" and must be recognized by the department as living up to their academic and professional potential.

## **Occupational Therapy**

### **Faculty Award**

This award is presented to a graduating student who has demonstrated the values and mission of the Department of Occupational Therapy and Loma Linda University, exemplified academic achievement, commitment to service, and positive contributions to the learning environment.

### **Alumni Award**

This award is presented to a graduating student who has exemplified the vision of the Department of Occupational Therapy to transform lives through occupation-based practice, service, and advocacy, and demonstrated leadership in sharing our vision with others.

### **Edwinna Marshal Leadership Award**

This award is presented to a graduating student in recognition of potential for leadership and education in the field of occupational therapy.

### **Lynn Arrateig Practice Award**

This award is presented to a graduating student in recognition of commitment to the practice of pediatric and geriatric occupational therapy.

### **Community Outreach Award**

This award is presented to a graduating student who has been a positive role model and change agent, actively engaged in community service to provide improved quality of life in the local and global community.

### **Hamid Javaherian Memorial Award**

The Hamid Javaherian Award is given to a student enrolled in the Masters of Occupational Therapy program, or any student in the postprofessional Doctor of Occupation Therapy program. Student exemplifies compassion, leadership, program innovation, and dedication to the community in the spirit of occupational justice. Awards are to be given upon merit not financial need.

### **Occupational Therapy Endowment Scholarship**

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

## **Physician Assistant (PA)**

### **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 goals, 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.

### **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.

### **Neidigh Physician Assistant Scholarship**

The Neidigh Physician Assistant Scholarship is for students enrolled in the department program who are qualified in their first year and awarded in their second year, have a G.P.A. of 3.0 or higher; and demonstrate sound judgement, willingness to lead, mature and responsible behavior, rapport with colleagues and community service involvement.

## **Physical Therapy**

### **Physical Therapy Faculty Award**

In recognition for demonstrating outstanding potential and promise in the profession of physical therapy.

### **Jeanne Middleton Scholarship**

The Jeanne Middleton Scholarship is to provide scholarship assistance to students in their first year enrolled in the DPT program and is based on the financial need and professional potential.

### **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 Scholarship**

The Fred B. Moor scholarship is presented to a student enrolled in the department with a G.P.A. of 3.0 or greater and has financial need.

**Matthew Lynn Schrader Memorial Scholarship**

The Matthew Lynn Schrader Memorial Scholarship is for PTA students enrolled in the program who exhibit: a passion for helping people, connecting with their patients, and financial need.

**Physical Therapy Leadership Award**

In recognition of leadership in school and community activities.

**Physical Therapy Endowment Scholarship**

The Physical Therapy Scholarship Endowment is to provide financial aid assistance that are enrolled in the department program.

**Randall C. Isley Memorial Award**

The Randall C. Isley Memorial Award recognizes a graduating PTA student who demonstrates scholarship, outstanding compassion, and inspiration in their 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.

**Thomas G. Burke Memorial Scholarship**

The Thomas G. Burke Memorial Scholarship is given to students enrolled in the doctoral degree program of the department and have satisfactorily completed at least one quarter of the program and have financial need.

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

The Faculty Award is given by the department in recognition of superior scholarship for the top G.P.A. in the graduating class as well as based on how the student has represented the University and program's mission and values.

**Radiation Technology Scholarship Endowment**

These scholarships have been awarded to recognize and reward the educational endeavors of outstanding Radiologic Technology students in gaining the professional imaging skills, training, and experience necessary to join the ranks of the Radiologic Technology profession. These particular scholarships are made possible by the gifts of generous alumni and friends of the school.

**Walter L. Stilson Awards**

The Walter L. Stilson Award is given to a student based on exemplary clinical performance and who has shown promise of outstanding professional achievement in the clinical setting. In addition, whose performance is in harmony with the objectives of the Medical Radiography program.

**Rising Star Award**

This award is given to one student in the department who demonstrates an above-and beyond attitude. This student is also known to help faculty on projects and support the program in a broad variety of ways. The Rising Star recipient is going places and will be a great representative in the profession they will join after graduation. Criteria for this award include advancing the profession, invention or leadership entrepreneurship, research, mentoring, community Service, and contribution the the school.

**Southern California Kaiser Permanente Radiologic Technology Scholarships**

The Southern California Kaiser Permanente Radiologic Technology scholarship has been created to encourage the Radiologic Technology

students at Loma Linda University School of Allied Health Professions to continue their education and reward outstanding students so that they gain the professional imaging skills, training, and experience necessary to join the ranks of the Radiologic Technology profession. The scholarships are based on a combination of scholastic achievement and commitment to the imaging profession and are awarded as a LLU SAHP Radiologic Technology or Diagnostic Medical Sonography scholarship.

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- Special Imaging MRI – Certificate (<http://llucatalog.llu.edu/allied-health-professions/special-imaging-ct-mri-certificate/>), Comparison (<http://llucatalog.llu.edu/allied-health-professions/special-imaging-ct-mri-certificate/comparison-ct-mri/>)
- Speech-Language Pathology – S.L.P.D. (p. 85)



## 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 programs offered in conjunction with other schools of the University. It also houses academic programs which are not a natural subset of existing departments of the school.

### Life Support Education (LSE)

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

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

#### Courses offered

##### Basic Life Support (BLS)

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

##### Prerequisite

Proof of a current AHA BLS card is needed if the candidate is renewing their certificate. Candidates include anyone who needs to know how to perform CPR in a health-care setting. The 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](http://www.llu.edu/life-support-education) (<http://www.llu.edu/life-support-education/>).

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

This course is designed to certify/re-certify 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 a current AHA BLS card is required if candidate needs certification for the first time, or proof of a current AHA BLS and ACLS card for renewal of the certificate. A candidate must be a health-care provider whose activities demand proficiency in ACLS skills. A required manual must be brought on the day of class. A self-assessment test (<http://www.llu.edu/assets/lifesupport-education/documents/ACLS-Pre-Test.pdf>) is required. Participants must study the textbook prior to class attendance.

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

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

This course is designed to certify/re-certify 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 a current AHA BLS card is required if the candidate needs to be certified for the first time, or proof of a current AHA BLS and PALS card if they are renewing certification. The candidate must be a health-care provider whose activities demand proficiency in PALS skills. The required manual must be brought on the day of class. A self-assessment test (<http://www.llu.edu/assets/lifesupport-education/documents/ACLS-Pre-Test.pdf>) is required. Participants must study the textbook prior to class attendance.

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

##### Neonatal Resuscitation Program (NRP)

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

##### Prerequisite

Proof of a current NRP card is required for renewing a certificate. The candidate must be a health-care provider whose activities demand proficiency in NRP skills. The manual is required for the online component. Completion of the online component is required before attending the scheduled skills class.

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

##### Prerequisite

This class is for health-care and non-health-care providers whose activities demand proficiency in CPR and first-aid skills. The required manual must be brought on the first 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](http://www.llu.edu/life-support-education) (<http://www.llu.edu/life-support-education/>).

### LSE terms and conditions

#### Registration

The student should register 1-3 months before their renewal window to ensure availability. Classes start promptly at scheduled time. Anyone who is more than 15 minutes late will be asked to reschedule. Registration closes when classes are full. If a student registered online, they must bring a printed registration confirmation on the first day of class.

#### Certification

American Heart Association certificates are provided upon course completion for BLS, ACLS, 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

Per the American Heart Association, students must bring the required book(s) to class. Anyone without the required book(s) will not be granted

admission and will be rescheduled. Rescheduling fees apply. Books may be purchased at the Life Support Education office, at the Campus Bookstore, or online at shopcpr.org.

### 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 and BLS. No refunds will be given for no-shows.

### CME/CEU/ICEMA

The California Medical Association, California Board of Nursing, and Inland Counties Emergency Medical Agency have approved ACLS, PALS, and NRP provider courses for 16 continuing education units, as well as renewal courses for eight continuing education units. PEARS has been approved for eight 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

Rasha Abdrabou

Gurinder Bains

Lee Berk

Kent Chow

Noha S. Daher

G. Charles Dart, Jr.

Terry D. Douglas

Lida Gharibvand

Craig R. Jackson

Arthur B. Marshak

Ernest R. Schwab

Donna Thorpe

### Adjunct faculty

Allan R. Handysides

### Associated faculty

Everett B. Lohman III

### Emeritus faculty

Joyce W. Hopp

## Programs

- Health Professions Education – Certificate, M.S. (p. 63)
- Rehabilitation Science – Ph.D. (p. 61)

## Health-Care Administration – B.S.

### Program director

Karla Lavin Williams

### Advisory Committee

Richard Aguilar

Mary Banaag

Ben Bunker  
Jonathan Deroko  
Laura Evans  
Debbie Hamada  
Melanie Hanson  
Casey Hokenson  
Ron Holk  
Craig Jackson  
Denise Rotollo  
Garth Schultz  
Pete Spanos  
Barry Stimmel  
Austin Tool  
Karla Lavin Williams

Health-care administration is a broad-based discipline that serves individuals, communities, and entire populations in a variety of health-care environments. Health-care administration is an excellent career choice for the person who desires a profession in health care in one or more of the following areas: health-care policy and strategy, marketing, communication, business continuity and sustainability, law and ethics, business and project management, human resources, health information systems, and organizational behavior. Health-care professionals have the opportunity to plan marketing and communication initiatives; develop institutional strategies, policies, and procedures; manage staff and resources; and develop sustainability and continuity plans, among other responsibilities.

The Health-Care Administration Program leading to the Bachelor of Science degree contains a distinctive online curriculum designed to prepare individuals to serve in entry- and mid-level administration in a variety of health-care environments. Such environments include assisted living and skilled nursing facilities; rehabilitation centers; private, public, and proprietary clinics; and medical centers and hospitals. The program's online curriculum provides a flexible and dynamic environment for students seeking to balance full-time employment, family life, and higher education. Courses emphasize LLU's values-based approach to health care.

The program meets the needs of students who have previously taken coursework equal to at least 96 quarter units (64 semester units) or have earned an associate's degree at another accredited college or university to complete a bachelor's degree. Applicants with health-care clinical backgrounds (e.g., nursing, radiography, respiratory therapy, occupational therapy, physical therapy, and dental hygiene) may transfer vocational-specific didactic units earned at accredited academic institutions into the degree program. Some restrictions apply.

## Program learning outcomes

Upon completion of this program, the graduate should be able to:

1. Apply health-care management concepts and theory to sustainable decision-making practices, operations management, and strategic health-care administration.
2. Apply advanced proficiency in communicating with the public, staff, and constituencies.
3. Apply health-care law to policy and procedure development.
4. Demonstrate skill in managing human resources and providing effective conflict-resolution strategies.
5. Utilize financial management models to inform financial decisions within health-care organizations.

6. Employ innovative information systems skills in the health-care environment.
7. Develop advanced emotional and social intelligence skills applicable to health-care management.

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), applicants must also demonstrate the following requirements:

- Minimum of 90-quarter units (60 semester units) academic credit —students transferring from a community college may transfer a maximum of 105 quarter units (70 semester units); all other credits must come from a senior college
- Minimum 2.5 G.P.A. for all freshman and sophomore coursework from accredited educational institutions
- High school diploma or its equivalent (e.g., the GED) is required
- Statement of purpose
- Complete prerequisites listed below

### Prerequisites

Courses are listed in general education domain order.

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- College algebra or statistics.
- Additional units must be selected from any of the following content areas: biology, chemistry, geology, mathematics, or physics, and one course must include a lab.

#### Domain 4: Social sciences (minimum 12 quarter units)

- One course (or components integrated into several courses) dealing specifically with issues of human diversity is required.
- Select additional units, as needed, from: anthropology, economics, geography, political science, psychology, and sociology.

#### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Introduction to computers.
- Oral communication, public speaking, or interpersonal communication.

#### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

For total unit requirements for graduation, see LLU General Education Requirements (p. 26).

### Other

Medical terminology

For total unit requirements for graduation, see LLU General Education Requirements

### Electives

Some students may need to complete additional elective coursework to bring their overall course unit total to a minimum of 180 quarter units while enrolled at Loma Linda University in order to meet graduation requirements.

### Professional core

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

## Program requirements

### Major

AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
AHRM 475	Health-Care Research and Statistics	4
HCAD 305	Health-Care Communication	3
HCAD 328	Health-Care Organizational Behavior	3
HCAD 359	Health-Care Marketing	3
HCAD 374	Health-Care Human Resources	3
HCAD 380	Writing for Health-Care Administrators	3
HCAD 409	Principles of Health-Care Administration	3
HCAD 414	Sustainability for Health-Care Management	3
HCAD 461	Portfolio for Health-Care Administration I	3
HCAD 462	Portfolio for Health-Care Administration II	3
HCAD 491	Health-Care Administration Practicum I	2
HCAD 492	Health-Care Administration Practicum II	2
HCAD 498	Health-Care Policy and Strategy	3
HCBL 345	Project Management in Health Care	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HCBL 434	Financial Management for Health Care	3
HCBL 471	Information Systems Management in Health Care I	4
HLIN 430	Quality Management and Performance Improvement in Health Care	3

### Religion

RELE 4__	Religion elective	2
REL R 445	Wholeness and Health <sup>2</sup>	3
Choose one from 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 <sup>1</sup> 25

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 314	Managing Stress
AHCJ 324	Psychosocial Models and Interventions
ANTH 315	Cultural Anthropology
DTCS 301	Human Nutrition
HGIS 422	Principles of Geographic Information Systems
HLCS 241	Medical Terminology
HLIN 248	Pathopharmacology for Health Information Management
HLIN 344	Health-Care Informatics and Database Management
HLIN 437	Data Analytics and Visualizations for Health Care
HLIN 438	Revenue Cycle Management for Health Care
HLIN 472	Information Systems Management in Health Care II
PEAC 110	Independent Activities
RTCH 464	Moral Leadership
RTED 476	Adult Learning Theory for the Radiation Science Student
RTII 354	Introduction to Informatics
RTII 358	PACS Planning and Implementation
RTII 378	Systems Management in Informatics
RTII 384	Advanced Imaging Informatics
<b>Total Units</b>	<b>90</b>

<sup>1</sup> Available online courses if needed to bring the overall course unit total to a minimum of 180 quarter units to meet graduation requirements. The elective-unit requirement is based on a student matriculating with a minimum of 90 quarter units.

<sup>2</sup> Fulfills service learning requirement.

## Normal time to complete the program

Four (4) years – two (2) years at LLU based on full-time enrollment; part time enrollment permitted

# Rehabilitation Science – Ph.D.

### Program director

Terry D. Douglas

The School of Allied Health Professions offers the Doctor of Philosophy degree in rehabilitation science. By design, the degree program 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.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Provide vision and direction for the integration of the rehabilitation professions.
2. Commit themselves to whole-person care.
3. Advance the theory and practice of rehabilitation science through research.
4. Acquire and integrate knowledge related to the social and basic medical sciences.

5. Assess, develop, and implement interdisciplinary community-based services.

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admissions requirements, applicants must meet the following minimum requirements:

- 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 coursework.

Prospective students are required to submit the following:

1. A formal letter of support from a primary research faculty member at Loma Linda University whose research interests and availability most closely match those of the applicant. The program director will coordinate meetings between applicants and prospective research faculty members.
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).
4. Proof of involvement in a complete research project (group or individual) that involved data collection and production of a research paper or research poster.

## Program requirements

A minimum of 80 units beyond the master's degree is required for students holding a master's or doctoral degree in a professional area. The student's program coursework for the degree must be approved by the Doctor of Philosophy in Rehabilitation Science Committee.

### Domain 1

Rehabilitation Science and LLU Values (16 units)		
RESC 517	Profession Advocacy in Allied Health Professions	4
RESC 519	Rehabilitation Theories and Applications in Health Care	3

Choose from the following (9 units minimum): 9

AHCJ 528	Lifestyle Health and Wholeness
AHCJ 541	Managing Stress
AHCJ 545	Legal and Ethical Issues in the Health Professions
AHCJ 568	Spirituality and Health: The Wholeness Connection
NUTR 664	Vegetarian Nutrition: Person, Population, Planet
ORPR 575	Couples, Families, and Disabilities

### Domain 2

Leadership		
Choose from the following (6 units minimum): 6		
AHCJ 548	Human Resource Management in the Health-Care Environment	
AHCJ 556	Administration in Higher Education	
OCTH 606	Leadership for Health Professionals	
PHCJ 607	Professional Leadership	
PHCJ 609	Building Healthy Individuals	
PHCJ 610	Building Healthy Communities <sup>1</sup>	
PHCJ 617	Building Healthy Systems	

PTGR 514	Professional Systems in Management I	
SLPD 580	Clinical Issues in Speech-Language Pathology	
<b>Domain 3</b>		
Education		
Choose from the following (6 units minimum):		6
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	
IDMT 521	Instructional Design I	
OCTH 605	Education for Health Professionals	
PHCJ 614	Pedagogy: The Art and Science of Teaching	
PHCJ 618	Transformative Communication	
<b>Religion and wholeness</b>		
Include 9 units of religion, chosen from the following ethical, theological, and relational courses; and the Graduate Wholeness Portfolio		
AHCJ 519	Graduate Wholeness Portfolio	1
Choose from the following (3 units minimum):		3
RELE 524	Bioethics and Society	
RELE 525	Ethics for Scientists	
RELE 535	Ethical Issues in Health-Care Management	
RELE 548	Christian Social Ethics	
RELE 567	World Religions and Bioethics	
RELE 588	Philosophical Ethics	
Choose from the following (3 units minimum):		3
RELR 540	Wholeness and Health	
RELR 584	Culture, Psychology, and Religion	
RELR 587	Religion and the Social Sciences	
Choose from the following (3 units minimum):		3
RELT 509	Biblical Perspectives in Religion and Health	
RELT 540	World Religions and Human Health	
RELT 557	Theology of Human Suffering	
<b>Research and dissertation</b>		
Didactic coursework (15 units minimum)		
AHRM 581	Research and Statistics I	3
AHRM 582	Research and Statistics II	3
EPDM 509	Principles of Epidemiology	3
Select from the following (6 units minimum):		6
AHCJ 555	Writing for Health-Care Professionals	
AHRM 518	Nonparametric Statistics for the Health Professions	
AHRM 605	Critical Analysis of Scientific Literature	
EPDM 520	Data Collection Methods	
HPRO 589	Qualitative Research Methods	
SLPD 600	Components of Clinical Inquiry	
STAT 515	Grant- and Contract-Proposal Writing	
<b>Selectives</b>		
Advanced coursework in speciality area		6
RESC 697	Research (1-12)	21
<b>Total Units</b>		<b>80</b>

<sup>1</sup> Fulfills service learning requirement

## Service learning requirement

This requirement may be met by taking PHCJ 610 Building Healthy Communities or a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

## 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 coursework from the three domains and six 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. The examination will cover the student's research proposal and 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 preliminary oral comprehensive examinations, and (b) securing the approval of their 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, resulting in at least two publications in peer-reviewed journals. One paper must be accepted for publication in a peer-reviewed journal 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. 33) and the School of Allied Health Professions (p. 47).

## Normal time to complete the program

Four (4) to five (5) years based on three-quarter-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

Doyle Nick

Gail Rice

Ernie Schwab

Tammi Thomas

Dolores Wright

## The program

The 27-unit health professions education certificate and the 48-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 learning outcomes

In addition to the stated institutional learning outcomes, the graduate of the Master of Science degree in health professional education should be able to:

1. Construct learning modules that incorporate teaching and learning theory.
2. Create learning activities that stimulate interaction and reflection.
3. Apply current educational research to teaching.
4. Formulate curricular objectives and outcomes.
5. Design educational experiences.
6. Develop a curriculum and course assessment plan.
7. Formulate a personal philosophy of leadership.
8. Apply leadership competency in managing change, developing policy, coaching, and mentoring.

## Admissions

In addition to Loma Linda University (p. 23) 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. 64), M.S. (p. 64)

## Health Professions Education – M.S.

### Required

AHCJ 506	Educational Evaluation and Clinical Assessment	3
AHCJ 509	Transformational Teaching and Learning	3
AHCJ 515	Curriculum Development in Higher Education	3
or NGNE 501	Curriculum Development in Higher Education	
AHCJ 555	Writing for Health-Care Professionals	3
AHCJ 556	Administration in Higher Education	3
RELR 540	Wholeness and Health <sup>1</sup>	3

### 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	Master's Thesis I	
HPED 552	Master's Thesis II	

### Domain I electives

Teaching, learning, assessment and evaluation

Select 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

Select from the following: 6-18

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**

<sup>1</sup> Fulfills service learning requirement

## Normal time to complete the program

Three (3) years, based on half-time enrollment

## 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
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AHCJ 515	Curriculum Development in Higher Education	3
or NGNE 501	Curriculum Development in Higher Education	

### Domain I electives

Teaching, leading, assessment, and evaluation

Select 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 (additional courses may be chosen in consultation with the program director)	

### Domain II electives

Leadership electives

Select of the following: 3-6

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

Three (3) years based on less than half-time enrollment.

## 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 care. The department's goal is to offer excellent education through small class sizes, access to expert faculty members, and a faith-based educational environment. Graduates become advocates and leaders while serving as patient-care providers, researchers, and administrators.

### Chair

David López

### Primary faculty

David López

Abdullah K. Alismail

Alan Alipoon

Evelyn Massey

Paul M Casillas

### Secondary and adjunct faculty

Benjamin J. Becerra

Emily Jo Berry

Paresh Giri

Niranjan Jeganathan

Adrian Lavery

Thurman A. Merritt

N. Lennard Specht

Laren Tan

### Clinical faculty

Stanley Baldwin

Benga Agbelemose

Christian Arias

Emily Jo Berry

Anthea Gibbons

Leo M. Langga

Michael Lum

Fabian Lora

Joseph Pimentel

Loreen K. Scott

Marco Soto

Michael H Terry

Carter Tong

### Associated faculty

Noha S. Daher

## Programs

- Polysomnography – Certificate (p. 65)
- Respiratory Care – B.S. (Entry Level) (p. 67), B.S. (Postprofessional) (p. 69), M.S.R.C. (p. 71)

## Polysomnography – Certificate

### Program director

Abdullah Alismail

### Medical advisor

Ramiz Fargo

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 that may be deferred for months at a time due to inadequate staffing, resulting in delay of sleep disorder diagnoses and appropriate treatments.

The certificate in polysomnography is designed for current clinical practitioners and students who are interested in specializing in sleep disorder studies. Both didactic theory and clinical application offered in the program 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 includes laboratory/clinical rotations, online and classroom discussions, and a case study presentation. Graduates of this program are eligible to sit for the sleep disorder 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 the required clinical hours and requirements for each board examination. \*Please see professional examination section.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate basic knowledge and clinical skills in utilizing sleep technology equipment following evidence-based practices.
2. Demonstrate the ability to score sleep studies following evidence-based practices in sleep medicine.
3. Analyze and interpret sleep study results following evidence-based practices in sleep medicine.
4. Apply appropriate sleep treatment interventions using evidence-based practices in sleep medicine.
5. Demonstrate professional behavior and leadership skills.
6. Demonstrate effective and professional interaction and education skills with patients.

## Professional examination and certification eligibility

Graduates of this program are eligible to take the SDS examination by the NBRC and/or the RPSGT examination by the BRPT after completion of the required clinical hours and meeting the requirements of each

examination. This program is designated as a STAR-focused program under the BRPT. Graduates will be eligible for the RPSGT (Pathway 4) and CPSGT (Pathway 3) after meeting the requirements of each pathway. NBRC inquiries can be made to 10801 Mastin Street, Suite 300, Overland Park, KS 66210; telephone: 913/895-4900; fax: 913/712-9283; or website: [www.nbrc.org](http://www.nbrc.org). BRPT inquiries can be made to 8400 Westpark Drive, 2nd Floor, McLean, VA 22102; telephone: 703/610-9020; fax: 703/610-0229; website: <http://www.brpt.org/>. (<http://www.brpt.org/>)

## Accreditation

Loma Linda University is accredited by the WASC Senior College and University Commission (WSCUC), 1001 Marina Village Parkway, Suite 402, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

## Admissions

To be eligible for this program, in addition to the Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admission requirements, the following criteria must be met:

1. Current Basic Life Support certification from the American Heart Association.
2. Minimum of 2.5 G.P.A. of college credit (minimum of 36 quarter units).
3. Interview with program faculty.
4. Three positive personal and/or professional references.
5. For current students in the Loma Linda University Cardiopulmonary Sciences program, an agreement and acceptance from both program directors is required to add the sleep track/units to the current student plan.

**Prerequisite** (*All coursework must be completed at an accredited institution.*)

- Human anatomy and physiology or general biology with laboratory, complete sequence
- Introductory chemistry with laboratory; or general chemistry with laboratory—minimum of one quarter or semester
- High school-level physics or introductory physics, one quarter/semester in college; or general physics, one quarter/semester in college
- Two years of mathematics selected from: algebra I (elementary), algebra II (intermediate), or geometry; may be taken in high school or college
- English composition, complete sequence

**Co-requisite**

- Medical terminology

**Recommended coursework**

- Speech
- Sociology or anthropology.
- Psychology
- Microbiology

## Basic Life Support

Because this program will have clinical rotations and patient contact, students are required to have a cardiopulmonary resuscitation/basic life support (BLS) card certification. This certification has to be current

and obtained from an authorized American Heart Association training center. The BLS course is offered at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102.

## Program requirements

Autumn Quarter		Units
RSPS 210	Foundation of Polysomnography and Sleep Medicine	2
RSPS 216	3- and 12-Leads ECG Interpretation	2
RSPS 227	Neuroanatomy and Physiology of Sleep	3
RSPS 230	Polysomnography Science Methodology	2
Winter Quarter		
RSPS 234	Polysomnography Patient Education and Safety	1
RSPS 256	Polysomnography Monitoring and Scoring	2
RSPS 274	Polysomnography Diseases	3
RSPS 295	Polysomnography Practicum I	4
Spring Quarter		
RELR 475	Whole Person Care	2
RSPS 286	Polysomnography Case Study	2
RSPS 296	Polysomnography Practicum II	4
<b>Total Units:</b>		<b>27</b>

## Clinical Rotations

The polysomnography program offers clinical practicum course at 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, students are 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 (three [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 aging adult patients are treated for a wide range of problems—infant respiratory distress syndrome, trauma, cardiopulmonary arrest, conditions brought on by shock, and postoperative surgical complications; as well as 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 older adult 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 is for students who have had no previous education in respiratory care and who have completed the program prerequisites. The second 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 website, <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 website: <http://www.csrc.org>.

## Programs

- Respiratory Care – B.S. (Entry Level) (p. 67), B.S. (Postprofessional) (p. 69), M.S.R.C. (p. 71)

## Respiratory Care (Entry Level) – B.S.

**Program director**  
Abdullah K. Alismail

**Director of clinical education**  
Paul M. Casillas

**Medical director**  
N. Lennard Specht

Loma Linda University offers two Bachelor of Science degree curricula in respiratory care therapy. The entry-level curriculum is ideal for students who have met the program prerequisites but have not previously completed a respiratory care program accredited by the Commission on Accreditation for Respiratory Care (CoARC). The postprofessional B.S. degree 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.

For its commitment to excellence through high-quality education, evidence-based medicine, and patient safety, the B.S. in respiratory care entry-level program has received the American Association for Respiratory Care APEX Educational Award for 2021-2022—the first program to receive this award in the state of California as well as the West Coast of the U.S. Students in the program are eligible and encouraged to join the American Association for Respiratory Care

(AARC). Information about AARC may be found at the website: <https://www.aarc.org/>.

Loma Linda University is a chapter of the Lambda Beta Society, the national honor society for the respiratory care profession. Students who rank in the top 25 percent in their program are eligible to be nominated as a member. Information on the nomination process may be found at the website: <https://www.lambdabeta.org/membership-information/>.

Loma Linda University is an institutional member of the Coalition for Baccalaureate and Graduate Respiratory Therapy Education (CoBGRTE). A listing of CoBGRTE institutional members may be found at the website: <http://www.cobgrte.org/institutionalmembers.html>.

The two-year, upper-division curriculum leading to the bachelor of science degree is a sequence of professional coursework intended to prepare competent respiratory therapists with advanced abilities in clinical care. Coursework 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 their junior and senior years within a four-year period.

## Program goals

1. To prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by registered respiratory therapists (RRTs).
2. To prepare leaders for the field of respiratory care through acquisition of skills in one or more of the following: management, education, research, and/or advanced clinical practice.

## Program learning outcomes

In addition to the stated institutional learning outcomes, the respiratory care graduate should be able to:

1. Apply fundamental and progressive adult, pediatric, and neonatal respiratory care concepts and treatment plans in the areas of pathophysiology, diagnostics, gas exchange therapy, airway care, and application of invasive and non-invasive ventilator support.
2. Apply critical thinking skills to respiratory care practice.
3. Apply problem-solving skills in the areas of pulmonary physiology, related diagnostics, and comprehensive pulmonary rehabilitation programs.
4. Perform fundamental and progressive patient assessment and diagnostic skills appropriate for various cardiopulmonary diseases.
5. Demonstrate essential knowledge, skills, and abilities required to enter the practice of respiratory care, including passing the National Board for Respiratory Care (NBRC) Therapist Multiple-Choice Self-Assessment Examination (TMC-SAE).
6. Demonstrate clinical competency expected of the respiratory care practitioner, including passing the National Board for Respiratory Care (NBRC) Clinical Simulation Self-Assessment Examination (CSE-SAE).

## Professional licensure and credentialing

Graduates of CoARC-accredited respiratory care programs must apply to the state of California Department of Consumer Affairs Respiratory Care Board (RCB) for licenses 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 any felony convictions, and undergo fingerprinting. License denial may occur due to prior criminal conviction(s). Inquiries regarding the RCB may be directed to 3750 Rosin Court, Suite 100, Sacramento, CA 95834; telephone: 916/999-2190; fax: 916/263-7311; or website: [www.rcb.ca.gov](http://www.rcb.ca.gov) (<http://www.rcb.ca.gov/>) or via email: [RCBinfo@dca.ca.gov](mailto:RCBinfo@dca.ca.gov).

The NBRC provides nationally recognized credentialing examinations for graduates of accredited respiratory care programs. Those who successfully complete the therapist multiple choice examination and the advanced clinical simulation examination receive the RRT credential. Additional advanced practitioner examinations are required for the adult critical care specialist (ACCS) credential, neonatal-pediatric specialist (NPS) certification, certified (CPFT) and registered (RPFT) pulmonary function technologist, and sleep disorders specialty (SDS) credentials. The RRT credential is required by the state of California for licensure to practice respiratory care. NBRC inquiries may be made to 10801 Mastin Street, Suite 300, Overland Park, KS 66210; telephone: 913/895-4900; fax: 913/712-9283; or website: [www.nbrc.org](http://www.nbrc.org).

## Accreditation

Respiratory Care Program accreditation is provided by the Commission on Accreditation for Respiratory Care (CoARC). Standards and guidelines published by CoARC must be met, and should be relevant to general and respiratory care education and ongoing program assessment and improvement. The Respiratory Care (entry level) B.S. Program at Loma Linda University is CoARC-accredited. Inquiries regarding CoARC can be directed to 264 Precision Blvd, Telford, TN 37690; telephone, 817/283-2835; or website: <http://www.coarc.com/>.

## Admissions

Admission to the Bachelor of Science degree program in respiratory care is open for Autumn Quarter each year. An alternate earlier acceptance to Summer Quarter may be approved by the program director for applicants to enroll in corequisite coursework. In addition to Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- A minimum of 78 degree transferable quarter units (52 semester units) per program director approval or hold an A.S. degree.
- Complete the subject requirements noted as prerequisites.
- Arrange for an interview at the University by appointment (an off-campus or telephone interview can be arranged for the distant applicant).
- Complete a minimum four hour observation/interaction with a respiratory therapist. This may be scheduled following the interview.

### Prerequisites

Listed below are the admission and prerequisite requirements listed in general education domain order. A maximum of 105 quarter or 70 semester units (didactic only) from an accredited junior college will be accepted as transfer credit.

### Prerequisites

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- 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 (high school courses do not count toward the 12 units required to fulfill GE requirements).
- Two years high school mathematics with grades of C or above; or intermediate algebra in college. (These courses do not count toward the 12 units required to fulfill GE requirements.)

#### Domain 4: Social sciences (minimum 12 quarter units)

- Introductory or general psychology course.
- Select additional units, as needed, from: anthropology, economics, geography, political science, psychology, and sociology.
- Cultural diversity requirement is met within the program.

#### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

#### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

For total unit requirements for graduation, see LLU General Education Requirements (p. 26).

### Electives

Electives as needed to meet the minimum total degree requirements of 192 quarter units

## Program requirements

### Junior Year

#### Autumn Quarter

AHCJ 326	Fundamentals of Health Care	2
AHCJ 328	Wholeness Portfolio I	0
HLCS 241	Medical Terminology	2
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 <sup>3</sup>	Wholeness Portfolio I	1
AHCJ 403	Pathology II	3
RELE 457 <sup>1</sup>	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**

RSTH 316	12-Lead ECG Interpretation	2
RSTH 393	Respiratory Care Practicum III	5
RSTH 404	Critical Care	4
RELT 406	Adventist Beliefs and Life	3

**Autumn Quarter**

AHCJ 465	Seminars in Leadership	2
AHCJ 498	Wholeness Portfolio II	0
AHRM 471	Statistics and Research for Health Professionals I	3
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	3

**Winter Quarter**

AHCJ 498	Wholeness Portfolio II	0
AHRM 472	Statistics and Research for Health Professionals II	3
RELR 475 <sup>1</sup>	Whole Person 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
RELT 416 <sup>2</sup>	God and Human Suffering	2
RSTH 318	Cardiology	3
RSTH 435	Professional Development in Respiratory Care	1
RSTH 464	Case Management and Health Promotion in Respiratory Care	2
RSTH 471	Instructional Techniques I	2
RSTH 496	Respiratory Care Practicum VI	3

**Total Units:****114**<sup>1</sup> May substitute with another course of the same prefix and level.<sup>2</sup> May substitute with any REL\_ course of the same level<sup>3</sup> Fulfills service learning requirement

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

**Normal time to complete the program**

Four (4) years overall with two (2) years (seven [7] academic quarters) at LLU based on full-time enrollment

## Respiratory Care (Postprofessional) – B.S.

**Program director**

Alan Alipoon

Loma Linda University offers two bachelor of science (B.S.) degree curricula in respiratory care. The postprofessional curriculum is for students who have an associate in science (A.S.) degree in respiratory care from a Commission on Accreditation for Respiratory Care-accredited (CoARC) respiratory care program and who wish to earn a B.S. degree in respiratory care.

The one-year, upper-division program leading to the B.S. degree is a sequence of professional coursework intended to further train individuals who have acquired advanced knowledge in the respiratory care profession—including assessment, therapeutic interventions, and management of patients with cardiopulmonary-related disorders—as well as who uphold the mission and goals of the School of Allied Health Professions. The program is offered in two modalities: face-to-face and online. \*See *online distance education section*.

**Program goals**

The goals of the curriculum are to:

1. Provide therapists for 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 as well as allows progression into graduate programs.

**Program learning outcomes**

In addition to the stated institutional learning outcomes, the graduate should be able to:

1. Demonstrate advanced knowledge in respiratory care.
2. Apply fundamental and progressive adult, pediatric, and neonatal respiratory care concepts and treatment plans in the areas of pathophysiology, diagnostics, and gas exchange therapy, as well as airway care and ventilator support for both invasive and non-invasive application.
3. Apply critical-thinking skills to respiratory care practice.
4. Apply problem-solving skills in the areas of pulmonary physiology, related diagnostics, and comprehensive pulmonary rehabilitation programs.

5. Perform fundamental and progressive patient assessment and diagnostic skills appropriate for various cardiopulmonary diseases.
6. Develop fundamental skills to conduct and interpret research in the health-care arena.
7. Develop fundamental skills in leadership.
8. Develop fundamental skills in topic presentation to the health-care profession and patient-care community, using appropriate lecture and demonstration techniques.

## Admissions

Admission to the Postprofessional Respiratory Care Program is open all year long. Students may apply to autumn, winter, spring, or summer Quarter. In addition to Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- Be a graduate of a Commission on Accreditation for Respiratory Care-approved (CoARC) 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.
- Arrange an interview at the University by appointment. An off-campus interview can usually be arranged for the distant applicant.

For applicants from outside the state of California, please check the list of states (<http://home.llu.edu/distance-education/>) that have authorized Loma Linda University online students to ensure that students from your state are eligible before proceeding with the application.

## Prerequisites

Prerequisites are listed according to the general education domains they fulfill.

### Domain 1: Religion (5 quarter units) (completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- 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 college algebra.

### Domain 4: Social sciences (minimum 12 quarter units)

- General psychology or sociology
- Selected from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- One course (or components integrated into several courses) dealing specifically with issues of human diversity.

### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university
- Speech
- Other areas of study in communication may include courses in computer information systems, and critical thinking.

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

## Electives

To meet the minimum requirement of 96 quarter units required for matriculation, electives may be selected from the previous four domains. For more information regarding GE requirements for graduation, see LLU (p. 26) general education requirements .

## Program requirements

### Program unit requirements

To meet the Bachelor of Science degree requirement of 180 quarter units, students are required to complete 60 core units in the program. Students may transfer a maximum of 105 units from an associate's degree at a community college (105+60=165 quarter units). The remaining 15 units may be taken as electives (see options below).

For total unit requirements for graduation, LLU General Education Requirements (p. 27).

## Core program courses (online)

### Senior Year

Autumn Quarter		Units
AHCJ 328	Wholeness Portfolio I	0
AHCJ 465	Seminars in Leadership	2
AHRM 471	Statistics and Research for Health Professionals I	3
RELE 4__	Upper-division religion	2
RSTH 301	Advanced Respiratory Therapy Science I	3
RSTH 434	Advanced Patient Assessment	2
RSTH 431 <sup>1</sup>	Senior Project I	2
RSPS 210	Foundation of Polysomnography and Sleep Medicine	2

### Winter Quarter

AHCJ 328	Wholeness Portfolio I	0
AHCJ 402	Pathology I	4
AHRM 472	Statistics and Research for Health Professionals II	3
RSTH 401	Cardiopulmonary Intensive Care	3
RSTH 424	Exercise Physiology and Pulmonary Rehabilitation	3

RSTH 466	Advanced Diagnostic Techniques	2
RSTH 485	Evidenced-Based Medicine in Respiratory Care I	2
<b>Spring Quarter</b>		
AHCJ 328 <sup>2</sup>	Wholeness Portfolio I	1
AHCJ 403	Pathology II	3
RELT 423, 406, or 436	Loma Linda Perspectives	2-3
RSTH 316	12-Lead ECG Interpretation	2
RSTH 318	Cardiology	3
RSTH 432 <sup>1</sup>	Senior Project II	2
RSTH 486	Evidenced-Based Medicine in Respiratory Care II	2
<b>Summer Quarter</b>		
RSTH 422	Advanced Perinatal and Pediatric Respiratory Care	2
RSTH 433 <sup>1</sup>	Senior Project III	2
RSTH 448	Clinical Practice Seminar	2
RSTH 471	Instructional Techniques I	2
RSTH 487	Evidenced-Based Medicine in Respiratory Care III	2
RELE 4__	Upper-division religion	2-3
<b>Total Units:</b>		<b>60</b>

<sup>1</sup> 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.

<sup>2</sup> Fulfills service learning requirement

## Electives

Students can take electives from the following options

### Polysomnography certificate (sleep studies)

Students can take courses from the polysomnography certificate program to be counted as electives and earn a University certificate in polysomnography along the way. Total units offered/available by the polysomnography program are 27 units. Students can either choose selected courses or take the whole certificate as a subspecialty. To earn the certificate, the student must apply to the polysomnography program and obtain approval from both program directors.

### Other option

Students may transfer electives from another four-year accredited university to count toward their electives with program director approval. Check with the program director regarding the the availability of other cardiopulmonary courses within the department.

### Normal time to complete the program

Four (4) years – one (1) year (four [4] academic quarters) at LLU – based on full-time enrollment

## Respiratory Care – M.S.R.C.

**Program director**  
Abdullah Alismail

**Medical director**  
Laren D. Tan

**Advisory committee**

2	Benga Agbelemose
2	Alan Alipoon
	Abdullah Alismail
	Anthea Gibbons
1	David Lopez
3	Michael Lum
2-3	Loreen Scott
	Marco Soto
2	Laren D. Tan
3	Michael Terry

## Program description

The faculty of the Loma Linda University Master of Science in Respiratory Care Program believe in the promotion of and support for excellence in the profession of respiratory care and cardiopulmonary sciences through education, knowledge development, research, leadership, and public service. The mission of the program is to:

1. Support the mission and goals of Loma Linda University and the School of Allied Health Professions.
2. Facilitate student professional development, expansion of knowledge, and contribution to the field of respiratory care and cardiopulmonary sciences through guidance, resources, and leadership.
3. Support the medical community's needs for qualified graduate respiratory therapists and cardiopulmonary researchers who will facilitate positive changes through patient advocacy, leadership, and knowledge discovery and implementation.
4. Encourage continuing professional and personal development within the community through volunteerism and community service geared toward disease prevention, education, and intervention.

The four-quarter program is designed to allow customizable options for interactions with the program faculty—both face-to-face and online—offered through various electives. The core curriculum courses set the foundation for this graduate degree in respiratory care. In addition, electives may be chosen by students, based on their area of interest and with program director approval. Program electives are in the areas of leadership and management, education, research, advanced clinical practice, and polysomnography.

## Program learning outcomes

In addition to the stated institutional learning outcomes (p. 19), by the end of this program, the graduate should be able to:

1. Apply advanced respiratory care clinical skills to cardiopulmonary patients, using current evidence-based medicine practices.
2. Exhibit fundamental skills in leadership and management in health care.
3. Exhibit research interpretation skills in evidence-based medicine.
4. Exhibit presentation skills necessary to successfully promote advancements in the respiratory care profession for health-care professionals.
5. Participate in professional activities promoting professional growth.
6. Exhibit mastery of best practices in treating cardiopulmonary patients.

## Admissions

Admission to the Master of Science in Respiratory Care Program is open all year long. Students may apply to autumn, winter, spring, or summer quarters. In addition to Loma Linda University (p. 23) and School of Allied

Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- An earned baccalaureate degree from a U.S. accredited institution of higher education or an international institution having appropriate government recognition as a degree-granting institution
- Have earned the Registered Respiratory Therapist credential from the National Board for Respiratory Care; and licensed in their state of residence or eligible to practice by the government or equivalent
- Interview
- GPA of 3.0 or higher

## Program requirements

<b>Core</b>			AHCJ 545	Legal and Ethical Issues in the Health Professions
AHCJ 519	Graduate Wholeness Portfolio <sup>3</sup>	1	AHCJ 548	Human Resource Management in the Health-Care Environment
AHCJ 566	Theoretical Foundations of Leadership	3	AHCJ 549	Professional Responsibility in Allied Health Professions
RELE 524	Bioethics and Society	3	AHCJ 550	Organizational Theory
RSTH 541	Advanced Concepts in Critical Care I	2	AHCJ 557	Integrating Emotional Intelligence Leadership into the Healthcare Professions
RSTH 550	Advanced Procedures in Cardiopulmonary Science	2	AHCJ 567	Personal Leadership
RSTH 560	Advanced Cardiopulmonary Assessment, Diagnostics, and Monitoring	2	AHCJ 576	Basics of Marketing
RSTH 571	Advanced Pathophysiology of Cardiopulmonary Diseases I	3	AHCJ 588	Fundamentals of Human Resource Management
RSTH 580	Research Concepts in Respiratory Care Sciences	3	AHCJ 589	Strategic Planning in Health-Care Organizations
RSTH 698	Capstone Project in Respiratory Care (1, 2) <sup>1</sup>	6	HADM 506	Fundamentals of Health-Care Finance
<b>Elective Domains <sup>2</sup></b>		<b>20</b>	HADM 508	Accounting Fundamentals in Health-Care Management
Choose courses from the different elective domains below with program director approval.			HADM 514	Health-Care Economics
<b>Domain I: Research Methods and Statistics</b>			HADM 528	Organizational Behavior in Health Care
AHCJ 555	Writing for Health-Care Professionals		HADM 564	Health-Care Finance
AHRM 595	Research and Statistics Concepts and Methods: Intermediate		HADM 574	Managing Human Resources in Health-Care Organizations
AHRM 604	Research-Proposal Writing		HADM 604	Health Systems Strategic Planning
AHRM 605	Critical Analysis of Scientific Literature		HLIF 510	Health-Care Information Systems
EPDM 509	Principles of Epidemiology		HLIF 515	The U.S. Health-Care System
STAT 515	Grant- and Contract-Proposal Writing		HLIF 526/ HADM 605	Quality and Performance Improvement for Health Care
STAT 548	Analytical Applications of SAS and R		RSTH 585	Current Issues in Respiratory and Health Care Policy
Only one of the following standalone statistics courses or sequences may count toward degree units:			RSTH 684	Management and Leadership in Respiratory Care Project
AHRM 514	Biostatistics		<b>Domain III: Education</b>	
or			AHCJ 506	Educational Evaluation and Clinical Assessment
AHRM 571	Statistics and Research for Health Professionals I <sup>2</sup>		AHCJ 509	Transformational Teaching and Learning
AHRM 572	Statistics and Research for Health Professionals II <sup>2</sup>		AHCJ 515	Curriculum Development in Higher Education
or			AHCJ 556	Administration in Higher Education
AHRM 581	Research and Statistics I		AHCJ 564	Collaborative Learning in Higher Education
AHRM 582	Research and Statistics II		AHCJ 579	Instructional Effectiveness
or			AHCJ 586	Curricula Planning in Health Sciences
STAT 509	General Statistics		RSTH 685	Respiratory Care Education Project
or			<b>Sleep</b>	
STAT 521	Biostatistics I		RSPS 510	Sleep Neurophysiology and Pathologies
STAT 522	Biostatistics II		RSPS 511	Methodologies in Sleep Disorder Assessment and Intervention
STAT 523	Biostatistics III		RSPS 512	Advanced Polysomnography Practicum
<b>Domain II: Leadership and Management</b>			<b>Advance Respiratory Care Practicum</b>	
			RSTH 596	Advanced Clinical Practice in Respiratory Care I
			RSTH 597	Advanced Clinical Practice in Respiratory Care II
			<b>Total Units</b>	<b>45</b>

<sup>1</sup> Multiple registrations required to complete total unit requirement.

<sup>2</sup> Students lacking research and statistics must take AHRM 571 Statistics and Research for Health Professionals I and AHRM 572 Statistics and Research for Health Professionals II (or equivalent) as part of their degree completion requirements.



<sup>3</sup> Fulfills service learning requirement.

## **Capstone**

The capstone project must be completed as a written document of publishable quality and presented orally as a seminar (face-to-face or online). It must be prepared either for publication or implementation (including protocol) at the facility for which it was designed. The program director will assign each student a mentor having expertise in the student's chosen capstone topic area.

## **Normal time to complete the program**

One (1) year (four [4] academic quarters) based on full-time enrollment; part time permitted

## Department of Clinical Laboratory Science

The Clinical Laboratory Science Department is home to the programs associated with laboratory medicine: clinical laboratory science (medical technology or medical laboratory science), and phlebotomy (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 Science Department are as follow:

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 their chosen profession.
2. To help the student accept responsibility for integrity, ethical relationships, and empathetic 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 the medical centers sponsored by the Seventh-day Adventist Church—both in the United States and abroad.

### Chair

Rodney M. Roath

### Primary faculty

Eric Shadrach Aldovino

Craig E. Austin

Jonrey Avellano

Linda S. Buckert

Shalini Carter

Lauren Drake

Monique K. Gilbert

Susie M. Johnson

Valerie Laida

Thuan H. Nguyen

Nove Oliver

Elde M. B. Paladar

Rodney M. Roath

Teri H. Ross

Edward Rowsell

Linda J. Shain

Benjamin Siapco

Richard B. Thorpe

Alicia M. Triplett

Jane N. Zappia

### Secondary faculty

Paul C. Herrmann

Pamela J. Wat

## Programs

- Clinical Laboratory Science — B.S. (p. 74)
- Phlebotomy — Certificate (p. 77)

## Clinical Laboratory Science — B.S.

### Program director

Alicia M. Triplett

### Clinical coordinator

Alicia M. Triplett

### Medical director

Paul C. Herrmann

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

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 operate, 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, and analyzes and discusses test results with the medical staff.

## Opportunities

Overall employment of medical laboratory professionals is projected to grow 7 percent through 2029—much faster than the average for all occupations, particularly as the volume of laboratory tests increases with population growth and with the development of new technology. 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 as well as co-requisite and seminar courses. These provide professional clinical experience in the hospital laboratory environment with emphasis on technical proficiency, application of theory to patient care, laboratory organization, and managerial skills.

Senior students' clinical experiences are balanced between Loma Linda University Medical Center's clinical laboratory and supplemental affiliate training laboratories in the community.

### Program objectives

The Clinical Laboratory Science Program provides a complete educational experience that culminates in the Bachelor of Science degree and eligibility for licensure. California state licensure is obtained through the medical laboratory scientist examination offered by the American Society for Clinical Pathology (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.

### Program learning outcomes

By the end of the program, the graduate should be able to:

1. Demonstrate basic knowledge essential to the practice of clinical laboratory science.
2. Demonstrate technical ability essential to the practice of clinical laboratory science.
3. Practice professionalism through ethical behavior and attitudes.
4. Demonstrate leadership and administrative skills in laboratory practice and the community.
5. Adhere to rules and regulations promoting workplace and patient safety.
6. Exhibit analytical skills necessary to succeed in laboratory medicine.

## Clinical affiliations

Multiple clinical affiliations enrich the student's clinical training by providing exposure to procedures in different types of medical facilities. The senior schedule is based on a full-time week (40 hours) arranged on a Monday-through-Friday schedule within a non-standard term. During the 40-week clinical practicum, training may be scheduled at any of the following clinical sites:

### Primary affiliations

Loma Linda University Medical Center  
Loma Linda, California

Loma Linda University Medical Center  
Murrieta, California

### Supplemental affiliations

Community Hospital of San Bernardino  
San Bernardino, California

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

Kaiser Permanente Medical Center  
Fontana, California

LifeStream  
San Bernardino, California

## Transportation to scheduled assignments

Transportation to training laboratories is the responsibility of the student. Depending on the clinical assignment, travel to affiliate sites may be up to 80 miles, 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.

## Professional certification and licensure

Completion of the required sequence of academic coursework 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 website: <http://ascp.org/boc> (<http://ascp.org/boc/>).

## Academic progression

A minimum grade of C (2.0) is required for all courses in the program. A C- grade is not acceptable. A student who receives a grade of less than C in any academic course or who receives an Unsatisfactory (U) in any segment of a clinical practicum is automatically placed on probation. Continued enrollment for the next quarter, term, or rotation segment for a student on probation is subject to the recommendation of the department.

If continued enrollment is not recommended, the department will notify the student in writing. Also, 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 the terms of the learning assistance program contract are not met.

## CPR certification

Students are required to have current health-care provider adult, child, and infant cardiopulmonary resuscitation (CPR) certification 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 Clinical Laboratory Science Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 North River Road, Suite 720, Rosemont, IL 60018; telephone: 773/714-8800; fax: 773/714-8886; email: info@naacls.org; website: <http://www.naacls.org>.

The program meets the requirements in medical laboratory science of the American Society for Clinical Pathology, Board of Certification for Medical Laboratory Science, 33 West Monroe Street, Suite 1600, Chicago, IL 60603; telephone: 312/541/4998; fax: 312/541/4998. 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: <https://www.cdph.ca.gov/Programs/OSPHLD/LFS/Pages/TrainingPrograms.aspx>.

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must complete the following requirements:

- A minimum G.P.A. of 2.75 for science courses.
- A minimum of 96 quarter units or 64 semester units at an accredited college or university.
  - Note: A minimum grade of C (2.0) is required for all transfer courses; C- grades are not acceptable for transfer.
  - For total unit requirements for graduation, see LLU General Education Requirements (p. 27).
- Projected coursework that will be completed before beginning the program will be considered in the application process.
- Note: Students planning to apply to advanced degree programs should verify current admission requirements for those programs.

### Application deadlines

Applications to the Clinical Laboratory Science Program are accepted between March 1 and May 15. Early submission of application is recommended.

### Prerequisites

Courses are listed in general education domain order. To determine which courses meet the requirements, see the transfer patterns for selected colleges and universities at [llu.edu/allied-health/sahp/transfer](http://llu.edu/allied-health/sahp/transfer) (<http://www.llu.edu/allied-health/sahp/transfer/>).

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and Humanities (minimum of 16 quarter or 11 semester units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

#### Domain 3: Scientific and Quantitative Reasoning

Each course or sequence listed below:

- College Algebra or Calculus (one course)
- General Biology (one course with lab)
- General Chemistry (complete sequence with labs)
- Organic Chemistry (complete sequence with labs)
- Physics with lab (must include principles of light and electricity)

#### Domain 4: Social Sciences (minimum of 12 quarter or 8 semester units)

Select units from at least two content areas\* listed below:

- One course (or components integrated into several courses) dealing specifically with issues of human diversity is required.
- Select additional units, as needed, from: anthropology, economics, geography, political science, psychology, and sociology

#### Domain 5: Written and Oral Communication (minimum of 9 quarter or 6 semester units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

#### Domain 6: Health and Wellness (minimum of 2 quarter or 1.5 semester units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

### Electives

Some students may need to complete additional elective coursework to bring their overall course unit total to a minimum of 192 quarter units, including units taken at Loma Linda University, to meet graduation requirements.

## Program requirements

Junior Year		Units
AHCJ 328 <sup>1</sup>	Wholeness Portfolio I	1
CLSM 105	Procedures in Phlebotomy	4
CLSM 303	Urine and Body Fluid Analysis I	2
CLSM 307	Medical Parasitology	3
CLSM 309	Quantitative Analysis (Chemical)	4
CLSM 315	Physiology	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	1
RELE 457	Christian Ethics and Health Care	2

RELT 423	Loma Linda Perspectives	2
<b>Senior Year</b>		
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	5
CLSM 472	Clinical Practicum II	5
CLSM 473	Clinical Practicum III	5
CLSM 474A	Clinical Correlations	1
CLSM 474B	Clinical Correlations	1
CLSM 474C	Clinical Correlations	1
CLSM 496	Clinical Laboratory Science Seminar I	1
CLSM 497	Clinical Laboratory Science Seminar II	1
CLSM 498	Clinical Laboratory Science Seminar III	2
RELT 415	Christian Theology and Popular Culture	2
RELT 416	God and Human Suffering	2
<b>Total Units:</b>		<b>126</b>

<sup>1</sup> Fulfills service learning requirement

## Normal time to complete the program

Four (4) years – Two (2) years (20 months) at LLU – full-time enrollment required

## Phlebotomy – Certificate

### Program director

Teri H. Ross

### Medical director

Paul C. Herrmann

Procedures in phlebotomy education are designed to prepare 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 program

The program prepares the modern phlebotomist to perform venipuncture and capillary punctures. Topics include medical terminology, laboratory safety, basic anatomy and physiology, infectious diseases, and medicolegal issues of phlebotomy. A minimum of 40 hours of supervised clinical experience is provided at Loma Linda University Medical Center

and other medical affiliates, enabling participants to achieve proficiency in the health-care setting.

## School certificate

Students in this certificate program register through the Office of University Records for the courses, but the certificate is issued by the Department of Clinical Laboratory Science in the School of Allied Health Professions. The University Records Office maintains a record of registration but not the certificate; record of the certificate and its awarding are maintained by the Department of Clinical Laboratory Science in the School of Allied Health Professions.

Financial aid is not available to students registered in school certificate programs that 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; website: <http://www.ascp.org> target= (<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: <https://www.cdph.ca.gov/Programs/OSPHLD/LFS/>.

## Admissions

In addition to Loma Linda University (p. 23) 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.
- Possess 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
<b>Total Units</b>		<b>5</b>



## 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 be interested 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 toward meeting eligibility requirements for registration in the state of California as speech-language pathology assistants.

### Student professional association

Students are eligible for membership in the National Student Speech-Language-Hearing Association (NSSLHA) and are also 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>. Further, students are encouraged to become 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

Lamitra Baez

Aieshea Banks

Janine G. Benner

Terry D. Douglas

Julia E. Hollister

Karen J. Mainess

Christina V. Nobriga

Eric Reid

Brian D. Sharp

Jennifer St. Clair

Keith Wolgemuth

### Programs

- Communication Sciences and Disorders – B.S. (p. 78), M.S. (traditional and transitional) (p. 80), Comparison (p. 84)
- Speech-Language Pathology – S.L.P.D. (p. 85)

## Communication Sciences and Disorders – B.S.

#### Program director

Terry Douglas

The curriculum leading to the Bachelor of Science degree in communication sciences and disorders begins 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 arts education. The emphasis in the junior and senior years is focused on pre-professional courses and may include practical experience.

Full-time enrollment in the undergraduate 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 coursework. 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 more advanced 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.

### Program learning outcomes

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

By the end of the program, graduates should be able to:

1. Articulate characteristics of typical human speech, language, hearing, communication, and swallowing processes—including their biological, neurological, acoustic, psychological, developmental, and linguistic and cultural bases.
2. Articulate characteristics of atypical human speech, language, hearing, communication, and swallowing—including etiological, biological, neurological, acoustic, psychological, developmental, and linguistic and cultural correlates.
3. Implement knowledge of basic clinical processes for the remediation of human speech, language, hearing, swallowing, and communication disorders and differences.

- Incorporate cultural responsiveness to diversity (e.g., linguistic, neurological, economic, age, sexual, gender, ability, and racial) within academic and/or professional environments.
- Use logical reasoning skills to evaluate, research, and solve problems in communication sciences and disorders.
- Incorporate basic components of professional ethics when treating, counseling, advocating for, and documenting care for clients.

## Minimum grade required for graduation

A minimum grade of C (2.0) is required for a course to qualify for graduation.

## Clinical experience

A 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 a practicum and is available for students who have G.P.A.s of 3.0 or above in the major courses.

## Wholeness portfolio

Undergraduate students in the School of Allied Health Professions develop portfolios 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 achievement of the outcomes set by the University. These outcomes were developed to aid students 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 ensure regular standing in the program. If the student's G.P.A. drops below 3.0 by the end of an academic quarter, they will be placed on academic probation for the following quarter. If the student's G.P.A. does not improve to at least 3.0 by the end of that quarter, they 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 their academic or clinical performance.

## Speech-language pathology assistant

Students pursuing the Bachelor of Science in speech-language pathology assistant degree may work toward meeting eligibility requirements for registration in the state of California as a speech-language pathology assistant.

## Admissions

In addition to Loma Linda University (p. 23) 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

Listed by general education domains:

### Domain 1: Religion

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- Statistics required: One course in introductory or basic statistics
- Natural Sciences: At least one natural science course must include a lab component
- One physical science required: must be physics or chemistry
- One biological science required: (human anatomy and/or physiology, general biology, microbiology, and life science are examples of biological sciences)

### Domain 4: Social sciences (minimum 12 quarter units)

Must include two (2) content areas: Choose from anthropology, economics, geography, political science, psychology, and sociology

Must have one course (or components integrated into several courses) dealing specifically with issues of human diversity.

### Domain 5: Written and oral communication (minimum 9 quarter units)

English: Coursework 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)

Additional course may include information systems, critical thinking, and public speaking

### Domain 6: Health and wellness (minimum 2 quarter units)

Health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) One course required

Physical activity: Must include at least two separate physical activity courses totaling a minimum of one quarter unit

### Electives

The student begins the bachelor's degree curriculum in communication sciences and disorders with 96 quarter units (64 semester units) taken at a college or university other than Loma Linda University. 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 degree program does not guarantee that students possess all the academic credits needed to graduate. Some students may need to complete additional academic coursework 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. 27).

## 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 (two 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

AHCJ 305 <sup>1</sup>	Infectious Disease and the Health-Care Provider	1
AHCJ 328 <sup>2,4</sup>	Wholeness Portfolio I	1
CMSD 217	Beginning Sign Language	3
CMSD 284	Introduction to Speech-Language Pathology and Audiology	3
CMSD 314	Language Science	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 Life Span	4
CMSD 445	Techniques for ESL and Accent Modification	2
CMSD 454	Introduction to Audiology	4
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		
RELE 457	Christian Ethics and Health Care	2
Choose one course		
RELT 406, 423, 436, or 437	Adventist Beliefs and Life	2

### Senior Year

AHCJ 498 <sup>2</sup>	Wholeness Portfolio II	1
CMSD 424	Adult Language Pathology	4
CMSD 426	Behavior Management Applications with Special Populations	4
CMSD 436	Speech and Hearing Science	4
CMSD 444	Organic Speech Disorders	4
CMSD 448	Disorders of Fluency	3
CMSD 449	Voice Disorders	3
CMSD 464	Introduction to Aural Rehabilitation	4
CMSD 477	Bilingualism and Biculturalism	3
CMSD 488	Autism Spectrum Disorders	4
Cognates		
AHRM 471	Statistics and Research for Health Professionals I	3
AHRM 472	Statistics and Research for Health Professionals II	3

RELR 4__ Religion elective, relational	2
REL_ 4__ Religion elective	2
<b>Total Units:</b>	<b>96</b>

### Optional<sup>3</sup>

CMSD 467	Speech-Language Pathology and Audiology Practicum
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<sup>1</sup> Can be taken junior or senior year

<sup>2</sup> Course must be registered each quarter.

- 0 units in autumn

- 0 units in winter

- 1 unit in spring

<sup>3</sup> Available for students who have a G.P.A. of 3.0 or above in the major courses.

<sup>4</sup> Fulfills service learning requirement.

### Units

## Normal time to complete the program

Four (4) years – two (2) years (six [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 communication disorders may apply for admission to the two-year master's degree program. Postbaccalaureate foundational coursework 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 coursework 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), California Basic Education Skills Test (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, capstone research, and clinical presentations. 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 educational fieldwork or adult placement 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 coursework 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. The two groups complete the remaining two years simultaneously.

## 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 learning outcomes

By the end of their program, students should be able to:

1. Apply knowledge of human communication disorders and differences as well as swallowing disorders.
2. Integrate skills in assessment and intervention of human communication disorders and differences as well as swallowing disorders.
3. Demonstrate knowledge of the role of the school-based speech-language pathologist.
4. Propose, prepare, and present discipline-related research.
5. Implement counseling principles and practices related to the discipline of speech-language pathology with diverse populations and across the life span.
6. Relate knowledge of service learning to the community served.

## California Basic Educational Skills Test (CBEST)

The California Commission on Teacher Credentialing requires that all students pursuing a credential pass the CBEST. The test must be passed

before beginning the graduate curriculum, or within the first quarter. It 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, a national standardized and publicly administered test (taken at a national testing service), is a multiple choice examination designed to evaluate a student's broad-based knowledge across the disorders. It is required for ASHA certification, for the California license, and for the California school credential. A passing score of 162 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> (<http://www.ets.org/praxis/>). Students in the Master of Science degree curriculum in communication sciences and disorders are not required to take the Praxis while in the graduate program. However, taking the Praxis before graduation is recommended.

## 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 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 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 a year, and on an as-needed basis.

## Accreditation

The Master of Science degree program in speech-language pathology at Loma Linda University is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 220 Research Boulevard, #310, Rockville, MD 20850, 800/498-2071 or 301/296-5700; website: <http://www.asha.org>.

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. 23) 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. Post-

baccalaureate foundational coursework 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 coursework 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, 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 cumulative G.P.A. of 3.0 with a minimum G.P.A. of 3.3 for the last 96 quarter units or 64 semester units (last two undergraduate years). \*Note: The required minimum G.P.A. for consideration 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 January 1 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) must be submitted by January 1 to be included in the first round of selection for the two-year master's program and March 1 for the three-year transitional master's program.

## Programs

- Communication Sciences - M.S. (p. 82), M.S. (Transitional) (p. 83), Comparison (p. 84)

## 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, clinic, and as a graduate assistant.
3. Demonstrate excellence by following through on all activities, 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. 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 (three 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 531	Service-Learning in Speech-Language Pathology I	1
CMSD 554	Swallowing Disorders	3
CMSD 567	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	1
CMSD 575	Instrumentation in Speech and Hearing I	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 <sup>1</sup>	Clinical Practice in Speech-Language Pathology and Audiology, Advanced	1
CMSD 512	Graduate Portfolio II	1
CMSD 532 <sup>3</sup>	Service-Learning in Speech-Language Pathology 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 in Speech and Hearing II	1
CMSD 587	Counseling in Communication Disorders	3
CMSD 588 <sup>3</sup>	Educational Fieldwork II	8
CMSD 597	Fieldwork II	8
CMSD 687A or 687B <sup>2</sup>	Seminar: Open Seminar	4
CMSD 697	Research	1
REL_ 5__		3
<b>Total Units:</b>		<b>74</b>

<sup>1</sup> Choose one course

<sup>2</sup> One unit each time seminar is taken

<sup>3</sup> Fulfills service learning requirement



## Normal time to complete the program

Two years (seven [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.
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. Minimum of one quarter in residence as a graduate student.
2. Minimum G.P.A. of 3.3 for foundational coursework during the first year.
3. Minimum G.P.A. of B (3.0), with no course grade below C (2.0), for years two (2) and three (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	3
CMSD 515 Transcription Phonetics	2
CMSD 520 Communication across the Life Span	3
CMSD 521 Language Disorders of Children	3
CMSD 522 Organic Speech Disorders	3
CMSD 529 Adult Language Pathology	3
CMSD 530 Language Science	3
CMSD 534 Speech Sound Disorders in Children	3
CMSD 537 Clinical Methods in Speech-Language Pathology	3
CMSD 538 Diagnostic Methods in Speech-Language Pathology	3
CMSD 539 Introduction to Audiology	3
CMSD 547 Autism Spectrum Disorders	2
CMSD 548 Disorders of Fluency	2
CMSD 549 Voice Disorders	2
CMSD 577 Bilingualism and Biculturalism	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 531 Service-Learning in Speech-Language Pathology I	1
CMSD 554 Swallowing Disorders	3

CMSD 567 Clinical Practice in Speech-Language Pathology and Audiology, Advanced	2
CMSD 575 Instrumentation in Speech and Hearing I	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
<b>Second Year</b>	
CMSD 567, 586, or 596 <sup>1</sup> Clinical Practice in Speech-Language Pathology and Audiology, Advanced	1
CMSD 512 Graduate Portfolio II	1
CMSD 532 <sup>3</sup> Service-Learning in Speech-Language Pathology 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 in Speech and Hearing II	1
CMSD 587 Counseling in Communication Disorders	3
CMSD 588 <sup>3</sup> Educational Fieldwork II	8
CMSD 597 Fieldwork II	8
CMSD 687A Seminar: Open Seminar	4
or 687B <sup>2</sup>	
CMSD 697 Research	1
REL_ 5__ (Graduate-level religion elective)	3

**Total Units: 115**

<sup>1</sup> Choose one course

<sup>2</sup> One unit each time seminar is taken

<sup>3</sup> Fulfills service learning requirement

## Normal time to complete the program

Three years (11 academic quarters); full-time enrollment required.

## Communication Sciences – M.S., M.S. (Transitional) Comparison

	Course Title	MS (Transitional)	MS
<b>Transitional Year</b>			
CMSD 514	Anatomy of Speech-Hearing Mechanism	3.0	
CMSD 515	Transcription Phonetics	2.0	
CMSD 520	Communication across the Life Span	3.0	
CMSD 521	Language Disorders of Children	3.0	
CMSD 522	Organic Speech Disorders	3.0	
CMSD 529	Adult Language Pathology	3.0	
CMSD 530	Language Science	3.0	
CMSD 534	Speech Sound Disorders in Children	3.0	
CMSD 537	Clinical Methods in Speech-Language Pathology	3.0	
CMSD 538	Diagnostic Methods in Speech-Language Pathology	3.0	
CMSD 539	Introduction to Audiology	3.0	
CMSD 547	Autism Spectrum Disorders	2.0	
CMSD 548	Disorders of Fluency	2.0	
CMSD 549	Voice Disorders	2.0	
CMSD 577	Bilingualism and Biculturalism	2.0	
<b>Totals</b>		<b>40.0</b>	
	Course Title	MS (Transitional)	MS
<b>Master's First Year</b>			
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 531	Service-Learning in Speech-Language Pathology I	1.0	1.0
CMSD 554	Swallowing Disorders	3.0	3.0
CMSD 575	Instrumentation in Speech and Hearing I	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
<b>Totals</b>		<b>35.0</b>	<b>34.0</b>
	Course Title	MS (Transitional)	MS
<b>Master's Second Year</b>			
Select of 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 532	Service-Learning in Speech-Language Pathology 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 in Speech and Hearing 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	Fieldwork II	8.0	8.0
CMSD 687A or 687B	Seminar: Open Seminar <sup>1</sup>	4.0	4.0
CMSD 697	Research	1.0	1.0
REL_ 5__		3.0	3.0
<b>Totals</b>		<b>40.0</b>	<b>40.0</b>
<b>Overall Totals</b>		<b>115.0</b>	<b>74.0</b>

<sup>1</sup> One unit each time seminar is taken

## Speech-Language Pathology – S.L.P.D.

**Program Director**  
Keith Wolgemuth

The Doctor of Speech-Language Pathology is a post-entry level professional degree for individuals who want to increase depth of knowledge in the field of speech-language pathology while also acquiring clinical research experience. Graduates of the program will be trained to take positions as master clinicians, clinical researchers, and university clinical faculty.

The post-entry level professional program at Loma Linda University is one of a handful of such programs in the country and is currently the only such program in California. Current practitioners will gain advanced knowledge in the field of speech-language pathology, with specialized training in evidence-based practice, critical thinking, legal and ethical issues, problem-solving, and clinical research. Doctoral students will become adept at analyzing and synthesizing the existing research literature as they design and conduct their own clinical study in their area of interest. Doctoral students will be required to complete an applied dissertation research capstone project designed by the student and their faculty mentor. This project will be a clinical research study that will be in the form of a written manuscript for potential publication.

### Student learning outcomes

In addition to the institutional learning outcomes (p. 19), by the end of the program, the graduate should be able to:

1. Independently conduct clinically based research.
2. Disseminate information from their novel research findings.
3. Demonstrate specialized knowledge in speech-language pathology.
4. Demonstrate knowledge in disciplines outside the field of speech-language pathology.

### Admissions

*Note: 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 LLU State Authorization (<https://home.llu.edu/llu-state-authorization/>) online or contact the Admissions office for School of Allied Health Professions, 909-558-4599.*

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Be a speech-language pathologist with a Master's degree (M.A./M.S.) in speech-language pathology or equivalent and six months of professional practice.
- Have a current Certificate of Clinical Competence (CCC), and current licensure in one of the 50 United States.
- Document a minimum graduate GPA of 3.3.
- Provide three letters of reference.
- Submit a two- to three-page written statement describing research interests (and experience, if any), professional experience/ accomplishments, reason for pursuing a Doctorate in Speech-Language Pathology, and reason for attending Loma Linda University. If the applicant has a particular faculty mentor in mind, they should be mentioned here.

In the admissions screening process, the applicant's recommendations, interview, personal statement, and work experience are all considered. The most qualified applicants will be selected to be interviewed. The strength of the interview will be evaluated along with the applicant's stated research goals/plans. Admission will be decided based on the perceived potential of the applicant to succeed in this clinical research program as well as availability of a faculty mentor suited to the applicant's research area.

### Program requirements

Courses in the program fall into two broad domains: research and theory. Students will be required to take all courses in each domain

#### Major

SLPD 550	Advanced Seminar in Neuroanatomy and Neuroscience	3
SLPD 570	Special Topics in Speech-Language Pathology (3) <sup>1</sup>	9
SLPD 580	Clinical Issues in Speech-Language Pathology	3
SLPD 600	Components of Clinical Inquiry	3
SLPD 610	Capstone IRB Proposal	4
SLPD 621	Capstone Planning	3
SLPD 622	Capstone Proposal	2
SLPD 623	Capstone II	3
SLPD 624	Capstone III	3
SLPD 625	Capstone IV	3
SLPD 626	Dissemination of Research	3

#### Cognates

Religion (Choose from two of the following areas)	6
RELE_ 5__ Religion elective ethics	
RELR_ 5__ Religion elective ethics	
RELT_ 5__ Religion elective theological	

<b>Electives</b>	<b>6</b>
AHCJ 555	Writing for Health-Care Professionals
AHCJ 546	Therapeutic Humor in Health Care
AHCJ 541	Managing Stress
<b>Total Units</b>	<b>51</b>

<sup>1</sup> Course will be taken three times with a different topic each time.

### Service learning requirement

This requirement may be met by taking a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

### Normal time to complete the program

2.66 years (nine [9] academic quarters) – based on part-time enrollment

## Department of Health Informatics, Information Management, and Administration

The Department of Health Informatics, Information Management, and Administration (HIIMA) offers broad-based educational programs related to leadership, informatics, information management, and administration. Professionals in these domains strive to improve patient experiences with respect to quality and satisfaction, the health of populations, and the per capita costs of health care. Graduates possess the necessary leadership skills to ensure a competent workforce in the health-care industry.

### Mission

In harmony with the mission of Loma Linda University and the School of Allied Health Professions, the Department of Health Informatics, Information Management, and Administration is dedicated to:

- Educating competent health informatics, information management, and administration professionals.
- Promoting health informatics, information management, and administration professions.
- Extending the current knowledge of health informatics, information management, and administration professionals at neighboring health-care facilities.
- Challenging students, department faculty, and staff to maintain high standards of ethical and professional behavior.
- Encouraging students, faculty, and staff to seek a meaningful relationship with God and a balanced Christian lifestyle.

### Purpose

To prepare graduates to be competent health informatics, information management, and administration professionals through excellence in classroom instruction, professional practice experience, advisement, and mentoring—emphasizing global service.

#### Chair

Debra L. Hamada

#### Primary faculty

Pauline J. Calla

Laura Evans

Lida Gharibvand

Debra L. Hamada

Karla G. Lavin Williams

Terri L. Rouse

Ryan Stephan

Braden Tabisula

#### Clinical faculty

Kimberly A. Alcaraz

Jere E. Crispens

Marilyn Davidian

Jennifer Guerrero

Melanie Hanson

D.P. Harris

Audrey J. Shaffer

Brenda Taylor

David Wren

Mark E. Zirkelbach

### Programs

- Coding Specialist – Certificate (p. 87)
- Health-Care Administration – B.S. (p. 59)
- Health Informatics – M.S. (p. 88)
- Health Information Management – B.S., Certificate (p. 89)

### Coding Specialist – Certificate

#### Program director

Ryan Stephan

#### Advisory committee

Susan Armstrong

Pauline J. Calla

Deanna Klure, Chair

Tanya McCandish

Diana McWaid-Harrah

Diana Medal

Beverly Miller

Evelia Munoz

Carel Randolph

Patricia Small

Jessica Stewart

Guadalupe Valdepena

Angela Zucker

#### Invitees

Debra L. Hamada

Terri L. Rouse

Braden Tabisula

### Medical coding professionals

Health-care facilities need coders who accurately select ICD-10-CM/PCS codes, CPT codes, and HCPCS codes, as well as identify appropriate DRG or APC assignments for diagnostic and surgical information filed in health records. In most instances, financial reimbursement is directly tied to these codes. The statistical information generated from these codes is used for 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 critical in California and throughout the nation. Available information about job opportunities is provided to alumni.



## The program

The Coding Specialist Program is an online certificate program that is five quarters in length. Practicum courses in the program require some live, synchronous meetings between instructors and students to ensure the students receive adequate guidance in preparation for the workforce. Before beginning coding courses, students are introduced to foundational concepts in health-care records management as well as disease states and interventions.

## Program learning outcomes

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

1. Assess health record documentation to verify that it is accurate, timely, and complete, and that it supports the diagnosis and other clinical findings.
2. Determine the appropriate medical codes for health-care encounters with accuracy and consistency according to official guidelines.
3. Adhere to the format, organization, and mechanical conventions of the ICD-10-CM/PCS, CPT, E & M, and HCPCS coding systems.
4. Facilitate health data collection and processing through coding, indexing, and maintaining disease and operation statistics.
5. Assess compliance with regulatory requirements and reimbursement methodologies.
6. Perform diagnostic-related group and ambulatory patient-classification assignments using decision trees and computerized patient-data groupers.
7. Develop appropriate physician queries to resolve discrepancies in clinical documentation and coding.

## Professional certification

Upon successful completion of the program, the student is eligible to take the national entry-level certification examinations of the American Health Information Management Association.

## Special coursework/credit

Credit for life experience may be offered through waiver or equivalency examination as allowed by University policy.

## Approval

The Loma Linda University Coding Specialist Certificate Program is approved by AHIMA's Professional Certificate Approval Program (PCAP). This designation acknowledges the coding program as having been evaluated through a peer-review process and against a national minimum set of standards for entry-level coding professionals. This process allows academic institutions, health-care organizations, and private companies to be acknowledged as offering an approved coding certificate program. Any PCAP-related inquiries may be addressed to AHIMA, 233 N. Michigan Avenue, 21<sup>st</sup> Floor, Chicago, IL 60601-5809; telephone 312- 233-1149; email, academic.affairs@ahima.org.

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirement:

- High School Diploma or GED

## Program requirements

### Corequisite

The following corequisites/courses must be completed at a regionally accredited college or university:

- Human anatomy and physiology (must be completed before Winter Quarter of first year)
- Medical terminology

### Year 1

HLCS 242	Coding I	4
HLCS 243	Coding II	4
HLCS 961	Coding Practicum I	2
HLIN 220	Health Information Science and the U.S. Health-Care System	4
HLIN 248	Pathopharmacology for Health Information Management	4
RELE 257	Health Care Ethics	2

### Year 2

HLCS 245	Coding III	4
HLCS 250	Reimbursement and Coding Compliance	4
HLCS 260	Seminar and Portfolio for Health-Care Professionals	2
HLCS 962	Coding Practicum II	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

Fifteen (15) months based on less than half-time enrollment; no full-time option available

## Health Informatics – M.S.

### Program director

Debra L. Hamada

### Program coordinator

Braden Tabisula

### Advisory committee

Maha Hag Alshiekh, chair

Kirk Campbell

Dawn Cardillo

Kent Chow

Jere E. Chrispens

D. P. Harris

Craig Jackson

Art Kroetz

Ghee McConnell

Jennifer Miller

Rodney Roath

Terri L. Rouse

Brenda Taylor

David Wren

Mark Zirkelbach

### Invitees

Pauline J. Calla

Debra L. Hamada

Ryan Stephan  
Braden Tabisula

## Program Overview

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 analytics, project management, process improvement, 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.

## Program learning outcomes

Upon completion of this program, the graduate should be able to:

1. Conduct information system analysis, design, implementation, and management.
2. Evaluate data structure, function and transfer of information, socio-technical aspects of health computing, and human-computer interaction.
3. Recommend information technology, including but not limited to, computer networks, databases and system administration, security, and programming.
4. Develop effective verbal and written communications.
5. Ensure successful project management.
6. Assess quality and performance issues in health care using data analytics and performance improvement tools.

## Accreditation

Loma Linda University is accredited by the WASC Senior College and University Commission (WSCUC), 1001 Marina Village Parkway, Suite 402, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following:

- Provide evidence of completion of a bachelor's degree from an accredited U.S. college or university or the foreign equivalent.
- 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

### Year 1

AHCJ 555	Writing for Health-Care Professionals	3
AHRM 514	Biostatistics	3
HLIF 510	Health-Care Information Systems	4
HLIF 515	The U.S. Health-Care System	4
HLIF 525	Management of Health-Care Data and Information	2
HLIF 545	System Design, Implementation, and Management	3
HLIF 548	Human Computer Interactions	2
HLIF 565	Technical Structures in Health Informatics	3

### Year 2

HLIF 520	Data Management: Modeling and Development	3
HLIF 526	Quality and Performance Improvement for Health Care	2
HLIF 530	Data Analytics and Decision Support	3
HLIF 540	Leadership Perspectives and Practice	4
HLIF 550	Systems Security in Health Care	2
HLIF 555	Health-Care Vendor and Project Management	3
HLIF 570	Professional Portfolio <sup>1</sup>	2
Choose one:		2

HLIF 575	Capstone Project and Special Topics in Health Informatics	
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HLIF 584	Professional Practicum and Seminar for Health Informatics	
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REL_ 5__ Graduate-level Religion		3
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<b>Total Units</b>		<b>48</b>
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<sup>1</sup> Fulfills service learning requirement

## Non-course 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 each course in the program.

## Normal time to complete the program

Two (2) years (six [6] academic quarters) based on full time enrollment

# Health Information Management – B.S., Certificate

### Program director

Pauline J. Calla

### Clinical coordinator

Ryan Stephan

### Recruitment coordinator

Pauline J. Calla

#### Advisory committee

Felicia Chao, Chair  
 Kristen Borth  
 Deborah Critchfield  
 Craig Jackson, ex officio  
 Elaine Lips  
 Raymond Mikaelian  
 Jennifer Miller  
 Eric Morales  
 Gilbert Rodriguez  
 Frieda Smith  
 Braden Tabisula  
 Brenda Taylor  
 Marvin Torres  
 Sally Urquiza

#### Invitees

Pauline J. Calla  
 Debra L. Hamada  
 Terri L. Rouse  
 Ryan Stephan

## Program overview

The Health Information Manager (HIM) maintains health information systems that serve the needs of patients, the health-care team, and the administrative staff. It is an excellent career choice for the person who desires a profession in health care that combines interests in data analytics, computer science, business, management, informatics, law, and medicine. This unique combination provides the HIM professional with great opportunities in a variety of different settings and job titles, along with substantial income.

HIM professionals 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, data governance, managing the Electronic Health Record (EHR), and Health Information Technology (HIT).

One of the many career options chosen by the HIM professional 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.

A HIM professional 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 HIM professional in a health-care facility provides management and leadership in planning and organizing the department, motivating and evaluating employees, and providing in-service programs for departmental employees or other personnel. In addition, strategic planning involvement for health information systems is an important function.

The health information management curriculum is offered in two pathways as follow:

1. Bachelor's degree completion program.
2. Postbaccalaureate degree certificate program for applicants with a bachelor's degree.

The Health Information Management Program, leading to the Bachelor of Science degree, begins with the Autumn Quarter. Freshman and sophomore years, which are taken at an accredited college or university, afford the fundamentals of a liberal arts 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 must complete all coursework within a period specified by University policy.

## Opportunities

Health Information Management provides job flexibility for the person seeking work in a variety of settings. Many are employed by hospitals and medical centers. However, the job market has rapidly expanded beyond hospitals. Many 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 (such as Epic, Cerner, 3M, Optum, etc.), and education.

Job positions include but are not limited to: HIM director, 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, coding manager, vendor client services management, vendor sales, and product management positions.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Conduct assessment and management of data and information needs for a variety of health-care settings.
2. Advocate effective strategies for health information protection—privacy, security, and confidentiality.
3. Recommend technology, database models, and data analytic tools to support decision-making and strategic planning.
4. Discuss and apply revenue cycle management principles, strategies, and processes.
5. Monitor and analyze compliance with standards, regulations, and laws documentation related to health care.
6. Formulate management and leadership plans and strategies in legal and ethical manners to utilize resources effectively and efficiently.
7. Integrate pathophysiology, pharmacology, anatomy and physiology, medical terminology, computer concepts and application, and math statistics into the practice of health information administration.

## Professional practice experience

Two complimentary types of clinical experience are offered. The first is a variety of assignments and simulated exercises that will acquaint the student with managing information in all aspects of the health-care

environment. The second is a minimum of 40-hour affiliation during Spring Quarter of the senior year. Arrangements for internships and affiliation sites are made through the program director and the clinical coordinator. Students are responsible for their own transportation, food, and lodging during this affiliation.

## Professional registration

Upon completion of either the B.S. degree or the certificate, and upon recommendation of the faculty, graduates are eligible to take the qualifying examination of the American Health Information Management Association, 233 North Michigan Avenue, 21st Floor, Chicago, IL 60601-5809, for the designation of Registered Health Information Administrator.

## Professional association

Students and graduates are eligible for becoming members of the American Health Information Management Association and their respective Component State Associations. The purpose of these associations is to promote the art and science of health information management. They grant student memberships at a nominal cost to undergraduates in approved schools. Students are expected to become members 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 per University policy.

## Accreditation

The Health Information Management Program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), 200 East Randolph Street, Suite 5100, Chicago, IL 60601; telephone: 312/235-3255; website: [www.cahiim.org](http://www.cahiim.org) (<http://www.cahiim.org>).

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

### Health Information Management—B.S.

To be eligible for admission to the B.S. degree curriculum in health information management, the applicant must have completed a minimum of 90 quarter units at an accredited college or university. Listed below are the admission and prerequisite requirements listed in general education domain order.

### Prerequisites

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- College algebra or statistics
- Additional units must be selected from any of the following content areas: biology, chemistry, geology, mathematics, or physics, and one course must include a lab.

#### Domain 4: Social sciences (minimum 12 quarter units)

- One course (or components integrated into several courses) dealing specifically with issues of human diversity is required.
- Select additional units, as needed, from: anthropology, economics, geography, political science, psychology, and sociology

#### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Business Communications or Interpersonal Communication
- Additional courses may include information systems, critical thinking, and public speaking

#### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

### Other

Medical terminology

### Electives

As necessary, to meet the minimum total requirement of 82 transferable quarter units. These units added to the 110 undergraduate units required in the program fulfill the 192 total units required for the bachelor's degree.

For total unit requirements for graduation, see LLU General Education Requirements (p. 26).

## Health Information Management—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
- Psychology course
- Business communications or Interpersonal communication

## Programs

Health Information Management — B.S. (p. 92), Certificate (p. 92)

## Health Information Management – B.S.

Junior Year		Units
HCBL 345	Project Management in Health Care	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 220	Health Information Science and the U.S. Health-Care System	4
HLIN 248	Pathopharmacology for Health Information Management	4
HLIN 320	Health Information Science for Alternative Care Settings	4
HLIN 334	Clinical Classification Systems	4
HLIN 335	Advanced Classification Systems and Coding Compliance	4
HLIN 340 <sup>1</sup>	Seminar and Portfolio for Health Information Management	3
HLIN 347	Advanced Information Privacy and Security	4
HLIN 354	Professional Practice Experience	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RELE 457	Christian Ethics and Health Care	2
REL_ 4_	Upper-division religion course	2
Senior Year		
AHRM 475	Health-Care Research and Statistics	4
HCBL 434	Financial Management for Health Care	3
HCBL 471	Information Systems Management in Health Care I	4
HLIN 344	Health-Care Informatics and Database Management	4
HLIN 435	Seminar and Portfolio for Health Information Management II	4
HLIN 437	Data Analytics and Visualizations for Health Care	4
HLIN 438	Revenue Cycle Management for Health Care	4
HLIN 439	Management in Health Care	5
HLIN 440	Leadership and Strategy Management in Health Care	4
HLIN 454	Professional Practice Experience II	4
HLIN 472	Information Systems Management in Health Care II	4
RELT 423, 406, 436, or 437 (choose one course)	Loma Linda Perspectives	2
REL_ 4_	Upper-division religion course	2
<b>Total Units:</b>		<b>91</b>

<sup>1</sup> Fulfills service learning requirement

Graduation Requirements: A minimum grade of C (2.0) is required for all courses in the program. 180 units (maximum junior college units = 105; 60 units must be upper division).

An G.P.A. of 2.0 from LLU must be maintained throughout the program.

## Normal time to complete the program

Four years—two years (six [6] academic quarters) at LLU based on full-time enrollment.

## Health Information Management – Certificate

Junior Year		Units
HCBL 345	Project Management in Health Care	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 220	Health Information Science and the U.S. Health-Care System	4
HLIN 248	Pathopharmacology for Health Information Management	4
HLIN 320	Health Information Science for Alternative Care Settings	4
HLIN 334	Clinical Classification Systems	4
HLIN 335	Advanced Classification Systems and Coding Compliance	4
HLIN 340	Seminar and Portfolio for Health Information Management	3
HLIN 347	Advanced Information Privacy and Security	4
HLIN 354	Professional Practice Experience	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RELE 457	Christian Ethics and Health Care	2
Senior Year		
AHRM 475	Health-Care Research and Statistics	4
HCBL 434	Financial Management for Health Care	3
HCBL 471	Information Systems Management in Health Care I	4
HLIN 344	Health-Care Informatics and Database Management	4
HLIN 435	Seminar and Portfolio for Health Information Management II	4
HLIN 437	Data Analytics and Visualizations for Health Care	4
HLIN 438	Revenue Cycle Management for Health Care	4
HLIN 439	Management in Health Care	5
HLIN 440	Leadership and Strategy Management in Health Care	4
HLIN 454	Professional Practice Experience II	4
HLIN 472	Information Systems Management in Health Care II	4
<b>Total Units:</b>		<b>85</b>

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

An G.P.A. of 2.0 from LLU must be maintained throughout the program. A minimum of 50 units is required for completion.

## Normal time to complete the program

Two years (six [6] academic quarters) at LLU.



## Department of Nutrition and Dietetics Programs

The Department of Nutrition and Dietetics offers degree programs that lead to professional careers in those areas. Graduates are prepared to be registration-eligible and, upon passing board exams, become employed as clinical dietitians in hospitals as well as directors of health-care and school food-service facilities. Some graduates establish private practices, offering consulting services to long-term care facilities, sports teams, and other organizations. The classroom-based coordinated programs leading 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 (ACEND). As a coordinated program, both didactic coursework and 1,000 hours of supervised practice are included in the curriculum. In addition to the ACEND-accredited coordinated programs, a master's-level program is offered for dietitians with a bachelor's degree who want to further their education.

### Chair

Edward K. Bitok

### Primary faculty

Edward Bitok

Lesley Anne Foster-Nicholas

Cory Gheen

Cindy Kosch

JeJe Noval

Kyndra J. Woosley

### Clinical faculty

Adleit F. Asi

Margie I. Carson

Vivien Choi

Febra Johnson

Kalvin Lazcano

Leann Onasch

Jean Sellars

Khongmany Wells

Maryellen Westerberg

Pamela Yong

### Associated faculty

Celine Heskey

Ifeanyi Nwachukwu

Michael Paalani

Sujatha Rajaram

Gina Siapco

- Nutrition and Dietetics – M.S. (Prior RD) (p. 102)
- Nutrition and Dietetics (Coordinated Programs) – B.S. and M.S. (p. 94), M.S. (Prior B.S./B.A.), (p. 96) M.S. (Post DPD), (p. 97) Comparison (p. 99)

## Nutrition and Dietetics – Coordinated Programs

### Advisory committee

Gurinder Bains

Lee Berk

Margie Carson

Elena Chai

Dorothy Chen-Maynard

Teslyn Henry-King

Robin Hernandez

Celine Heskey

Georgia Hodgkin

Gayle Hoxter

Craig Jackson, ex officio

Febra Johnson

Arthur Marshak

JeJe Noval

Larry Roberts

Jean Sellars

Khongmany Wells

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. Medical nutrition therapy centers 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, potentially leading 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:

- Combined B.S. and M.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. Students obtain 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, developing professional competencies concurrently with cognitive and technical skills, enabling 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 as well as specialty areas, allowing them to contribute to the wholeness of humankind. Graduates are awarded an M.S. degree in nutrition and dietetics. The curriculum comprises didactic and supervised professional practice experiences in a health-sciences, liberal arts environment to prepare an educated graduate.

This curriculum includes theory, laboratory, research, and clinical experiences, with 1,000 hours of supervised professional practice experiences scheduled in medical nutrition therapy, community, and administrative nutrition. Students participate as active members of nutrition-care teams in clinical settings.

Three 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 physician offices, clinics, home health-care agencies, mass communications, 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 become 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.

Dietitians in administration are accountable for the food service system. In a health-care institution, they are 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 located at 120 South Riverside Plaza, Suite 2190, Chicago, IL 60606-6995. Along with membership in the Academy of Nutrition and Dietetics, students become members of the California Dietetic Association. Students are also encouraged to join the California Dietetic Association—Inland District.

## Goals of the coordinated program

### 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.

### Program Objectives for Goal 1

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

### 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.

### Program Objectives for Goal 2

1. Seventy percent (70%) or more of coordinated program graduates who seek employment in dietetics will be employed within twelve months of program completion.
2. Sixty percent (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.

## 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 2190, Chicago, IL 60606-6995; telephone, 800/877-1600, ext. 5400; email, ACEND@eatright.org; website: <http://www.eatrightpro.org/acend> (<http://www.eatrightpro.org/acend/>).

## Programs

- Nutrition and Dietetics – B.S. and M.S. (p. 94), M.S. (Prior B.S.) (p. 96), M.S. (post DPD), (p. 97) Comparison (p. 99)

## 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 the undergraduate portion. Students complete

the graduate courses during the third year after which they will be eligible to take the registration exam. Both the bachelors and masters will be awarded simultaneously.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Integrate scientific information and translation of research into practice.
2. Demonstrate beliefs, values, attitudes, and behaviors consistent with the professional dietitian nutritionist level of practice.
3. Develop and deliver information, products, and services to individuals, groups, and populations.
4. Apply principles of strategic management and systems in the provision of services to individuals and organizations.
5. Plan, process, and perform nutrition-related research while protecting the public.
6. Demonstrate an ability to translate evidence-based literature into formats that the lay public can understand, including use of videos, writing articles, and counseling.
7. Evaluate emerging trends in nutrition and give competent, evidence-based answers to the public.
8. Use metabolic pathways to determine patient and client nutritional needs.

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- a 3.0 G.P.A. or above (science and non-science)
- an interview (by telephone or in person)
- program prerequisites
- a 3.0 cumulative G.P.A. at completion of undergraduate courses in order to progress to the graduate level

Listed below are the admission and prerequisite requirements to obtain a bachelor's degree from Loma Linda University. These are listed in general education domain order.

### Prerequisites

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- College algebra or higher
- Anatomy and physiology with laboratory, complete sequence (two terms)
- General chemistry with laboratory, 3 quarters/2 semesters
- Microbiology with laboratory

#### Domain 4: Social sciences (minimum 12 quarter units)

- Psychology elective (one course minimum)
- Sociology elective (one course minimum)
- One course (or components integrated into several courses) dealing specifically with issues of human diversity is required.
- Select additional units, as needed, from: anthropology, economics, geography, political science, psychology, and sociology

#### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

#### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

For total unit requirements for graduation, see LLU General Education Requirements (p. 26).

### Electives

As necessary, to meet the minimum total requirement of 82 transferable quarter units. These units added to the 110 undergraduate units required in the program fulfill the 192 total units required for the bachelor's degree.

## Program requirements

For total unit requirements for graduation for the B.S. degree, see Division of General Studies, LLU General Education Requirements (p. 27).

Junior Year		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1
DTCS 302	Food Selection and Presentation	5
DTCS 304 <sup>2</sup>	Community Nutrition	4
DTCS 305 <sup>1</sup>	Professional Issues in Nutrition and Dietetics	2
DTCS 321	Nutrition and Human Metabolism	4
DTCS 329	Organic Chemistry with Applications for Nutrition	4
DTCS 334	Biochemistry with Applications for Nutrition	4
DTCS 338	Introduction to Clinical Nutrition	2
DTCS 340	Nutrition through Life Stages	3
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	2
REL_ 4_	Upper-division religion	2
Senior Year		
AHCJ 407	Financial Management	2
AHRM 471	Statistics and Research for Health Professionals I	3
AHRM 472	Statistics and Research for Health Professionals II	3
DTCS 395	Nutrition and Dietetics Practicum	12
DTCS 405	Senior Seminar	1

DTCS 445	Nutrition Care Management	4
DTCS 446	Nutrition Counseling and Education	3
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	2
RELT 436	Adventist Heritage and Health	2
<b>Graduate Year</b>		
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHRM 604	Research-Proposal Writing	3
DTCS 526	Pharmacology in Medical Nutrition Therapy	2
DTCS 584	Contemporary Issues in the Dietetic Profession	4
DTCS 589 <sup>2</sup>	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 506	Nutritional Metabolism	3
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
Elective: Any graduate-level course approved by advisor		7
REL_ 5__	Graduate-level religion	3
<b>Total Units:</b>		<b>158</b>

<sup>1</sup> Registered twice to fulfill unit requirement

<sup>2</sup> Fulfills service learning requirement

## Comprehensive Examination

The written comprehensive examination is designed to establish that the student has a broad understanding of nutrition and dietetics, statistics, and basic research methodology. The comprehensive examination will be administered after students have successfully completed the majority of required courses—typically during the Spring Quarter of the student's graduate year.

## Normal time to complete the program

Three (3) years—two (2) years (seven [7] academic quarters) of undergraduate work for the B.S. plus one (1) year (four [4] academic quarters) of graduate-level courses at LLU – based on full-time enrollment; part time permitted

## Nutrition and Dietetics (Prior B.S./B.A.) – M.S.

The M.S. (for bachelor's degree graduates in non-nutrition areas/international students) is a program for persons with a prior bachelor's degree. Students who have completed a bachelor's degree in a nutrition-related field at a non-ACEND accredited program must apply for this degree route. Graduates are eligible to sit for the RDN exam after completion of the M.S. degree.

## Program learning outcomes

At the end of this program, the graduate should be able to:

1. Integrate scientific information and translation of research into practice.
2. Demonstrate beliefs, values, attitudes, and behaviors consistent with the professional dietitian nutritionist level of practice.
3. Develop and deliver information, products, and services to individuals, groups, and populations.
4. Apply principles of strategic management and systems in the provision of services to individuals and organizations.
5. Plan, process, and perform nutrition-related research while protecting the public.
6. Demonstrate an ability to translate evidence-based literature into formats that the lay public can understand, including use of videos, writing articles, and counseling.
7. Evaluate emerging trends in nutrition and give competent, evidence-based answers to the public.
8. Use metabolic pathways to determine patient and client nutritional needs.

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- complete program prerequisites
- have a 3.0 G.P.A. or above (science and non-science prerequisites)
- complete an interview
- Graduate Record Exam (GRE)

## Prerequisites

- College algebra or higher
- Anatomy and physiology with laboratory, complete sequence (2 terms)
- General chemistry with laboratory, two semesters/three quarters
- Microbiology with laboratory
- Human nutrition
- Medical terminology certificate or course

## Program requirements

Junior Year		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1
DTCS 302	Food Selection and Presentation	5
DTCS 304	Community Nutrition	4
DTCS 305 <sup>1</sup>	Professional Issues in Nutrition and Dietetics	2
DTCS 321	Nutrition and Human Metabolism	4
DTCS 329	Organic Chemistry with Applications for Nutrition	4
DTCS 334	Biochemistry with Applications for Nutrition	4
DTCS 338	Introduction to Clinical Nutrition	2
DTCS 340	Nutrition through Life Stages	3
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
<b>Graduate Years</b>		
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHRM 571	Statistics and Research for Health Professionals I	3
AHRM 572	Statistics and Research for Health Professionals II	3
AHRM 604	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 <sup>1</sup>	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	1-8
EPDM 509	Principles of Epidemiology	3
NUTR 506	Nutritional Metabolism	3
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
Elective: Any graduate-level course approved by advisor		4
RELE5___	Graduate-level ethics course	3
<b>Total Units:</b>		<b>115</b>

Affiliation and practicum units are required in addition to the didactic units listed above.

#### Affiliation and practicum

DTCS 778	Clinical Nutrition Affiliation (6, 12)	12
DTCS 795	Nutrition and Dietetics Graduate Practicum	12
<b>Total Units</b>		<b>24</b>

<sup>1</sup> Fulfills service learning requirement

## Comprehensive Examination

The written comprehensive examination is designed to establish that the student has a broad understanding of nutrition and dietetics, statistics, and basic research methodology. The comprehensive examination will be administered after students have successfully completed the majority of required courses—typically during the Spring Quarter of the student's third year in the M.S. program.

## Normal time to complete the program

One (1) year (three [3] academic quarters) of undergraduate preparatory work plus two (2) years (eight [8] academic quarters) of graduate course work at LLU – based on full-time enrollment

## Nutrition and Dietetics (Post DPD) – M.S.

The M.S. degree for graduates of a bachelor-level didactic program 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, establishing eligibility for writing the registration examination for dietitians. This curriculum builds upon didactic coursework in nutrition and dietetics, culminating with an M.S. degree and a verification statement covering both didactic and supervised practice requirements.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Integrate scientific information and translation of research into practice.
2. Demonstrate beliefs, values, attitudes, and behaviors consistent with the professional dietitian nutritionist level of practice.
3. Develop and deliver information, products, and services to individuals, groups, and populations.
4. Apply of principles of strategic management and systems in the provision of services to individuals and organizations;
5. Plan, process, and perform nutrition-related research while protecting the public.
6. Demonstrate ability to translate evidence-based literature into formats lay public can understand, including use of videos, writing articles, and counseling.
7. Evaluate emerging trends in nutrition and give competent, evidence-based answers to the public.
8. Use metabolic pathways to determine patient and client nutritional needs.

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Bachelor's degree from an ACEND-accredited didactic program in dietetics
- complete program prerequisites
- have a 3.0 G.P.A. or above (science and non-science)
- Graduate Record Exam (GRE)
- complete an interview
- provide a DPD verification statement (or equivalent if international)

## Prerequisites

- College algebra or higher
- Anatomy and physiology with laboratory, complete sequence (two terms)
- General chemistry with laboratory, two semester/three quarters
- Microbiology with laboratory



## Program requirements

Junior Year		Units
AHCJ 305	Infectious Disease and the Health-Care Provider	1
<b>Graduate Years</b>		
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHRM 571	Statistics and Research for Health Professionals I	3
AHRM 572	Statistics and Research for Health Professionals II	3
AHRM 604	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 <sup>1</sup>	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 506	Nutritional Metabolism	3
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
Elective: Any graduate course approved by advisor		2
Elective: Nutrition-related graduate course		2
RELE 5___	Graduate-level ethics course	3
<b>Total Units:</b>		<b>62</b>

Affiliation and practicum units are required in addition to the didactic units listed above.

### Affiliation and practicum

DTCS 778	Clinical Nutrition Affiliation (6, 12) <sup>2</sup>	24
DTCS 795	Nutrition and Dietetics Graduate Practicum	12
<b>Total Units</b>		<b>36</b>

<sup>1</sup> Fulfills service learning requirement

<sup>2</sup> Multiple registrations required to fulfill unit requirement

### Comprehensive Examination

Comprehensive Examination is designed to establish that the student has a broad understanding of nutrition and dietetics, statistics, and basic research methodology. The written comprehensive examination will be administered after students have successfully completed the majority of required courses. The comprehensive examination will typically occur during the spring quarter of the student's second year in the MS program.

### Normal time to complete the program

Two (2) years (eight [8] academic quarters) at LLU – based on full-time enrollment

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

	Course Title	BS and MS	MS (Prior BS)	MS (DPD)	MS for RDs
<b>Junior Year</b>					
AHCJ 305	Infectious Disease and the Health-Care Provider	1.0	1.0	1.0	
DTCS 302	Food Selection and Presentation	5.0	5.0		
DTCS 304	Community Nutrition	4.0	4.0		
DTCS 305	Professional Issues in Nutrition and Dietetics <sup>1</sup>	2.0	2.0		
DTCS 321	Nutrition and Human Metabolism	4.0	4.0		
DTCS 329	Organic Chemistry with Applications for Nutrition	4.0	4.0		
DTCS 334	Biochemistry with Applications for Nutrition	4.0	4.0		
DTCS 338	Introduction to Clinical Nutrition	2.0	2.0		
DTCS 340	Nutrition through Life Stages	3.0	3.0		
DTCS 342	Medical Nutrition Therapy I	5.0	5.0		
DTCS 343	Medical Nutrition Therapy II	5.0	5.0		
DTCS 371	Quantity Food Purchasing, Production, and Service	5.0	5.0		
DTCS 372	Food Systems Organization and Management	4.0	4.0		
RELE 457	Christian Ethics and Health Care	2.0			
REL_ 4__	Upper division religion	2.0			
<b>Totals</b>		<b>52.0</b>	<b>48.0</b>	<b>1.0</b>	
	Course Title	BS and MS	MS (Prior BS)	MS (DPD)	MS for RDs
<b>Senior Year</b>					
AHCJ 407	Financial Management	2.0			
AHRM 471	Statistics and Research for Health Professionals I	3.0			
AHRM 472	Statistics and Research for Health Professionals II	3.0			
DTCS 395	Nutrition and Dietetics Practicum	12.0			
DTCS 405	Senior Seminar	1.0			
DTCS 445	Nutrition Care Management	4.0			
DTCS 446	Nutrition Counseling and Education	3.0			
DTCS 452	Advanced Nutrition	4.0			

DTCS 453	Advanced Medical Nutrition Therapy	3.0
DTCS 461	Food Science	4.0
DTCS 473	Medical Nutrition Therapy Affiliation	12.0
DTCS 476	Exercise Physiology in Medical Nutrition Therapy	3.0
RELT 436	Adventist Heritage and Health	2.0
REL_ 4_	Upper-division Religion	2.0

<b>Totals</b>		<b>58.0</b>			
	<b>Course Title</b>	<b>BS and MS</b>	<b>MS (Prior BS)</b>	<b>MS (DPD)</b>	<b>MS for RDs</b>
<b>Graduate Program</b>					
AHCJ 548	Human Resource Management in the Health-Care Environment	3.0	3.0	3.0	3.0
AHRM 604	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 584	Contemporary Issues in the Dietetic Profession	4.0			4.0
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 506	Nutritional Metabolism	3.0	3.0	3.0	3.0
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
REL_ 5_	Graduate-level Religion	3.0			
	Elective: Any graduate-level course approved by advisor	7.0			
AHRM 571	Statistics and Research for Health Professionals I		3.0	3.0	
AHRM 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	
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		
	Elective: Any graduate-level course approved by advisor	4.0		
RELE 5__	Graduate-level Ethics		3.0	
	Elective: Nutrition-related graduate course		2.0	
	Elective: Any graduate-level course approved by advisor		2.0	
	Elective: Any graduate-level course approved by advisor			7.0
REL_ 5__	Graduate-level Religion			3.0
<b>Totals</b>		<b>48.0</b>	<b>67.0</b>	<b>61.0</b>
<b>Overall Totals</b>		<b>158.0</b>	<b>115.0</b>	<b>62.0</b>
				<b>48.0</b>

<sup>1</sup> Registered twice to fulfill unit requirement

	Course Title	BS and MS	MS (Prior BS)	MS (DPD)	MS for RDs
<b>Affiliation and practicum</b>					
DTCS 778	Clinical Nutrition Affiliation <sup>2</sup>		12.0	24.0	
DTCS 795	Nutrition and Dietetics Graduate Practicum <sup>2</sup>		12.0	12.0	
<b>Totals</b>			<b>24.0</b>	<b>36.0</b>	

<sup>1</sup> Multiple registrations required to fulfill unit requirement.

<sup>2</sup> Affiliation and practicum units do not count toward minimum didactic units required for the degree.

## Nutrition and Dietetics (Prior RD) – MS

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

The curriculum is identical to that of the third year of the B.S. plus M.S. track in the Coordinated Program in Nutrition and Dietetics.

### Program learning outcomes

At the end of this program, the graduate should be able to:

1. Plan, process, and perform nutrition-related research while protecting the public.
2. Demonstrate an ability to translate evidence-based literature into formats the lay public can understand, including use of videos, writing articles, and counseling.
3. Evaluate emerging trends in nutrition and give competent, evidence-based answers to the public.
4. Use metabolic pathways to determine patient and client nutritional needs.

### Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) 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

### Program requirements

Graduate Year		Units
AHCJ 548	Human Resource Management in the Health-Care Environment	3
AHRM 604	Research-Proposal Writing	3
DTCS 526	Pharmacology in Medical Nutrition Therapy	2
DTCS 584	Contemporary Issues in the Dietetic Profession	4
DTCS 589 <sup>1</sup>	Capstone Course in Nutrition and Dietetics	3
DTCS 694	Research	4
EPDM 509	Principles of Epidemiology	3
NUTR 506	Nutritional Metabolism	3
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
Elective: Any graduate-level course approved by advisor		7
REL_ 5__ Religion Elective		3
<b>Total Units:</b>		<b>48</b>

<sup>1</sup> Fulfills service learning requirement

### Normal time to complete the program

One (1) year (four [4] academic quarters) at LLU based on full-time enrollment; part time permitted



## Department of Occupational Therapy

*Transforming lives through occupation, service, and advocacy.*

Through the therapeutic use of everyday activities or occupations, occupational therapists help people across the life span—from infancy through older adults—to participate in the things they want and need to do. Common occupational therapy interventions include helping children with disabilities to participate fully in school and social situations, helping people recovering from injury to regain skills, and providing support for older adults experiencing physical and cognitive changes. Practice settings are diverse—hospitals, schools, behavioral health clinics, outpatient clinics, and community sites with at-risk youth and survivors of domestic violence.

Occupational therapy services may include comprehensive evaluations of the client's home and other environments (e.g., workplace or school), recommendations for adaptive equipment and training in its use, and guidance and education for family members and caregivers. Occupational therapy practitioners have a "whole-person" perspective, focusing on adapting the environment to fit the person and considering the person as an integral part of the therapy team.

Following the mission of this University, students immerse themselves in the community, exploring emerging areas of practice including the aging, at-risk youth, domestic violence settings, lifestyle medicine, obesity, and trauma-exposed children.

### Opportunities

Occupational therapy is an exciting field with its broad population areas and diverse settings. The American Occupational Therapy Association has identified eight areas of focus: children and youth, evidence-based practice, health and wellness, mental health, productive aging, rehabilitation, disability, and participation as well as work and industry.

Occupational therapy fosters entrepreneurship that promotes health and wellness as well as meaningful occupational participation. Occupational therapists are moving into areas such as health promotion, obesity, telehealth, and domestic violence.

### 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, 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-49294. Website: <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. Website: <http://www.otaconline.org>; telephone: 888/686-3225.

#### Chair

Liane H. Hewitt

#### Program director, M.O.T.

Heather Javaherian

#### Program director, entry-level O.T.D.

Heather Javaherian

#### Program director, postprofessional O.T.D.

Julie D. Kugel

#### Primary faculty

Liane H. Hewitt

Praveen Injeti

Heather Javaherian

Dragana Krpalek

Julie D. Kugel

Sharon L. Pavlovich

Douglas R. Rakoski

Heather A. Roese

Arezou Salamat

#### Clinical faculty

Beth Aune

Erica V. Johnson-Herrera

Danielle J. Meglio

Harold T. Neuendorff

Yvette M. Paquin

Diana Su-Erickson

Aaron A. Weis

Christine M. Wietlisbach

#### Associated faculty

Noha Salim Daher

Michael S. Deleon

Lida Gharibvand

Cindy Hoang

Ehren Ngo

### Programs

- Doctor of Occupational Therapy – O.T.D. (Entry Level) (p. 103), O.T.D. (Postprofessional) (p. 106)

## Occupational Therapy – O.T.D. (Entry Level)

#### Program director

Heather A. Javaherian-Dysinger

#### Capstone coordinator

Praveen Injeti

#### Academic fieldwork coordinator

Heather Roese

*Transforming lives through occupation, service, and whole-person care.*

The Department of Occupational Therapy's mission is to educate future practitioners who:

- Are *compassionate, mission-focused, servant leaders* who demonstrate *excellence and integrity*.
- Expand knowledge and practice through *research* and innovative programming.
- Provide *client-centered, occupation-based whole-person care* to promote *health, wellness, lifestyle, and service* at individual, community, and societal levels.

Curricular threads:

- Occupation-based practice.
- Evidence-based practice and research.
- Health, lifestyle, and wellness.
- Mission-focused community engagement and service.
- Advocacy and leadership.

## Clinical experience

Aligning with the unique mission of Loma Linda University, students in the Doctor of Occupational Therapy Program have the opportunity to experience fieldwork in community practices and emerging areas as well as traditional sites. Students participate in three Level I fieldwork experiences, exposing them to different areas of practice to observe and begin building an understanding of occupational therapy practice. In addition, students take part in community-engagement experiences throughout the program, building their sense of service and using their skills to serve and collaborate with community partners.

Each student completes two Level II fieldwork experiences. The fieldwork coordinator works with the student to arrange the fieldwork sites in different settings. The program culminates with the doctoral capstone, which is a 14-week (560 hours) individual experience where the student gains advanced skills in a specific area. Students are responsible for their own transportation and must complete the fieldwork within twenty-four months of the didactic coursework. Students must also complete a background check and any specific facility requirements prior to beginning fieldwork.

## CPR certification

Students are required to have current adult and child cardiopulmonary resuscitation (CPR) certification 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, varicella, as well as a yearly tuberculosis test.

## Program goals

Students will:

1. Become competent occupational therapy practitioners who are equipped to pass the certification exam and practice in various settings.

2. Become experts in the use of their occupation to create innovative programs and services to meet local and societal needs.
3. Use research to guide their practice and scholarly contributions to the profession.
4. Reflect values of service, faith, and wellness in their personal and professional lives.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Utilize occupation-based practice to promote life participation, meaning, and health.
2. Embrace values of health, lifestyle, and wellness in interventions and service delivery to promote whole-person care.
3. Utilize evidence-based practice to guide and inform intervention and occupational therapy services.
4. Demonstrate mission-focused community engagement and service.
5. Engage in leadership and advocacy to serve others at the local community, regional, national, and international levels with values of compassion, faith, and occupational justice.

## Professional registration and certification

Upon satisfactory completion of the occupational therapy entry-level O.T.D. degree—including completion of Level II fieldwork within 24 months of completing academic preparation, completion of the doctoral capstone, 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 a registered occupational therapist (OTR).

Many states require licensure in order to practice. The student should consult the Occupational Therapy Board for the state in which they plan to practice. The American Occupational Therapy Association provides recognition essential to the practice of occupational therapy in the United States and most foreign countries.

When graduates apply to write the certification examination with NBCOT, they 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: 1 Bank Street, Suite 300, Gaithersburg, MD 20878; telephone: 301/990-7979; website: [nbcot.org](http://www.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; email: [cbot@dca.ca.gov](mailto:cbot@dca.ca.gov). The office address is: 1610 Arden Way, Suite 121, Sacramento, CA 95815.

## Accreditation

The Entry-level Occupational Therapy Doctoral degree program has applied for accreditation and has been granted Candidacy Status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA). The program must have a pre-accreditation review, complete an on-site evaluation, and be granted Accreditation Status before its graduates will be eligible to sit for the national certification examination for the occupational therapist

administered by the National Board for Certification in Occupational Therapy (NBCOT).

The Master of Occupational Therapy Program is on inactive status with ACOTE as the program is transitioning to the entry-level Doctor of Occupation Therapy.

The Master of Occupational Therapy Program was re-accredited in May 2013, with a full 10-year accreditation status through May 2023, by the Accreditation Council for Occupational Therapy Education (ACOTE), c/o Accreditation Department, American Occupational Therapy Association (AOTA), 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929; telephone: 301/652-AOTA; website: [www.acoteonline.org](http://www.acoteonline.org) (<http://www.acoteonline.org/>).

The program is currently in an inactive status, is closed to admissions, and is in a teach-out mode.

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (<http://llucatalog.llu.edu/about-university/admission-policies-information/#admissionrequirements>) and School of Allied Health Professions admissions requirements (<http://llucatalog.llu.edu/allied-health-professions/#generalregulation>), the applicant must also complete the following requirements:

- Earned a prior bachelor's degree in any major from an accredited college or university.
- A minimum science prerequisite G.P.A. of 3.20, and a minimum cumulative G.P.A. of 3.20.
- Complete program prerequisites no later than December of the year prior to submission of an application.
- Complete observation experience—a minimum of 40 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  
Statistics\*  
Medical terminology

\* Courses must have been taken within 5 years prior to application to our program.

## 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 in Occupational Therapy Practice	1

#### Autumn Quarter

AHCJ 524 Pharmacology	1
OCTH 502 Professional Foundations II: Human Occupation	3
OCTH 510 Functional Kinesiology	1

OCTH 513 Professional Foundations III: Documentation	1
OCTH 514 Conditions in Occupational Therapy: Behavioral Health	4
OCTH 522 Analysis and Intervention: Behavioral Health	3

#### Winter Quarter

AHCJ 705 Infectious Disease and the Health Care Provider	1
OCTH 506 Functional Neuroscience	3
OCTH 508 Splinting	1
OCTH 511 Conditions in Occupational Therapy: Orthopedic	4
OCTH 521 Analysis and Intervention I: Orthopedic	3
RELR 776 Christian Spirituality and the Health Professional	2

#### Spring Quarter

OCTH 507 Trends in Neuroscience	2
OCTH 512 Conditions in Occupational Therapy: Neuroscience	4
OCTH 523 Analysis and Intervention: Neuroscience	3
OCTH 530 Introduction to Neuro Theories and Techniques	1
OCTH 570 Critical Inquiry and Evidence-Based Practice I	1
OCTH 712 Level I Fieldwork	1

### Second Year

#### Summer Quarter

OCTH 504 Professional Foundations IV	1
OCTH 509 Design and Technology	2
OCTH 574 Critical Inquiry and Evidence-Based Practice II	3
RELE 707 Ethics for Allied Health Professionals	3
Elective	1

#### Autumn Quarter

OCTH 515 Conditions in Occupational Therapy: Infants, Children, Youth	4
OCTH 524 Analysis and Intervention: Infants, Children, Youth	3
OCTH 534 Introduction to Sensory Processing	1
OCTH 545 Current Trends in Occupational Therapy Practice	2
OCTH 551 Occupation and Wellness	2

#### Winter Quarter

OCTH 516 Conditions in Occupational Therapy: General Medicine	4
OCTH 517 Introduction to Physical Agent Modalities	1
OCTH 527 Analysis and Intervention: General Medicine	3
OCTH 575 Critical Inquiry and Evidence-based Practice III	2
OCTH 713 Level I Fieldwork	1

#### Spring Quarter

OCTH 580 Capstone Planning I	1
OCTH 721 Level II Fieldwork Experience 1	8

### Third Year

#### Summer Quarter

OCTH 552 Professional Transition	3
OCTH 560 Occupational Therapy Advocacy and Leadership	3
OCTH 576 Critical Inquiry and Evidence-based Practice IV	3
OCTH 581 Capstone Planning II: Proposal	1
RELT 740 World Religions and Human Health	3

#### Autumn Quarter

OCTH 722 Level II Fieldwork Experience 2	8
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#### Winter Quarter

OCTH 582 Capstone Experience & Project I	3
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OCTH 585	Teaching and Learning Lab	1
OCTH 586	Business & Entrepreneurship	2
OCTH 605	Education for Health Professionals	3
<b>Spring Quarter</b>		
OCTH 583	Capstone Experience & Project II	6
<b>Total Units:</b>		<b>133</b>

<sup>1</sup> Fulfills service learning requirement

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

### Normal time to complete the program

Three (3) years (10 academic quarters); full-time enrollment required

## Occupational Therapy – O.T.D. (Postprofessional)

### Program director

Julie D. Kugel

The Doctor of Occupational Therapy degree curriculum provides occupational therapists with an opportunity to further their educations through its flexible online format. The online community fosters learning and professional growth through creative learning experiences, critical reflections, and discussions.

Coursework includes emphasis on spirituality, diversity, critical reasoning, advocacy, participation, education, and research. The capstone project is individually designed by the students, allowing them to creatively explore new areas of practice, and to engage in innovative research and programming.

The intensive track is designed for students who want to complete the postprofessional program as full-time students rather than as a part-time sequence, completing the program in six—as opposed to nine—quarters.

### Program learning outcomes

By the end of this program, the graduate should be able to:

1. Interact with 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

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 for LLU State Authorization (<https://home.llu.edu/llu-state-authorization/>) online 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. 23) and School of Allied Health Professions (p. 47)

admissions requirements, 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 <sup>1</sup>	3
OCTH 605	Education for Health Professionals	3
OCTH 606	Leadership for Health Professionals	3

### Cognates

AHRM 605	Critical Analysis of Scientific Literature	3
OCTH 632	Capstone I: Introduction to Theory & Research	4
OCTH 633	Capstone Proposal: IRB or Program Development	4
OCTH 634	Capstone II	3
OCTH 635	Capstone III	4
OCTH 636	Capstone IV	4
OCTH 637	Professional Publication and Dissemination	4
RELE 524	Bioethics and Society	3
RELR 535	Spirituality and Mental Health	3
___	Elective	3

### Total Units

**53**

<sup>1</sup> Fulfills service learning requirement

### Normal time to complete the program

2.67 years (nine [9] academic quarters) – based on less than full-time enrollment

# Department of Orthotics and Prosthetics

## Chair

Michael Moor

## Program Directors

Aileen Kingsley  
MSOP/Hybrid Director

Michael Moor  
BS/MSOP Director

## Primary faculty

Michael Davidson

Julie Jones

Aileen Kingsley

Matt Mausner

Michael Moor

Johannes Schaepper

## Program

- Orthotics and Prosthetics – M.S.O.P. (p. 107)

## Orthotics and Prosthetics – M.S.O.P.

Loma Linda offers two educational pathways for completion of a Master of Science in Orthotics and Prosthetics (M.S.O.P.) degree:

### Program director, B.S./M.S.O.P. track

Michael Moor

### Program director, M.S.O.P. hybrid track

Aileen Kingsley

The B.S./M.S.O.P. is a mixed, undergraduate and graduate track, accepting students both with and without a bachelor's degree. This is an on campus, 2½-year (10 quarters) program. Six of the ten quarters are undergraduate level and four quarters are graduate level. This is one of the most robust orthotics and prosthetics curricula in the country with 156 academic units. Undergraduate students will simultaneously earn a B.S. in health sciences, and an M.S.O.P. in Orthotics and prosthetics. Bachelor-prepared students will graduate with an M.S.O.P. degree.

The M.S.O.P./hybrid is a 2-year, blended-learning track. The first year is fully online and the second year in-person on the Mentone campus. This track uses a spiral learning format: the first year in theory; and the second year in-person and in-practice, concentrating on clinical, technical, and patient management skills. Quarters seven and eight include two summative courses in which students demonstrate and test their learning—both in practice and in theory. Students who complete this track will graduate with an M.S.O.P. degree.

The curriculum for both M.S.O.P. tracks is designed according to NCOPE's published 2017 standards of the profession, providing the student with the knowledge, behaviors, and skills required to qualify for acceptance into orthotics and prosthetic residencies, as well as for entry into the clinical practice of orthotics and prosthetics.

## 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 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* as well as attend AAOP-sponsored or AAOP-approved local or national meetings.

## Professional practice requirements

Satisfactory completion of the M.S.O.P. degree curriculum requirements qualifies the student to enter an NCOPE-accredited residency site of their choice. After completing a 12-month prosthetic and a 12-month orthotic residency—or an 18-month combined ortho-prosthetic residency, the resident is eligible to sit for the certification examination offered by the American Board of Certification (ABC) in orthotics and prosthetics. Passing the ABC examination will earn certification in orthotics, certification in prosthetics, or dual certification as a prosthetist-orthotist. In addition to certification, and depending on the state where the certified practitioner intends to practice, it may be necessary for the student to pass a state licensure examination in order to practice their profession.

## 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 them for the final quarter clinical affiliations required for the completion of the M.S.O.P. degree curriculum.

All clinical assignments will be made by the academic coordinator for 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 clinical assignments made by the department at any of the affiliated facilities.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Exercise keen insight, progressive care, and critical judgment through careful evaluation in clinical care, skills application, and thinking throughout the profession.
2. Adhere to guiding principles and recognized ethics of the profession.
3. Value and apply new technology, investigation, and knowledge to patient care and the profession through a commitment to discovery and education.
4. Examine the importance of embracing and serving the unmet and ever-changing needs of a diverse world.
5. 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; website: <http://www.ncope.org/>, in collaboration with the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; telephone: 727/210-2350; website: <https://www.caahep.org/>.

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant to the B.S./M.S.O.P track must also complete the following requirements:

- 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 non-science courses.
- A minimum 80 hours of observational field experience at a minimum of two orthotics and prosthetics facilities of their choice. A letter of attestation from the facility owner or clinical supervisor is needed from each facility prior to the start of the program.

Applicants to the M.S.O.P/hybrid track must complete the following requirements:

- A bachelor's degree from an accredited college or university, or the equivalent of a four (4) year U.S. bachelor's degree from a non-U.S. degree-granting institution that is recognized by the appropriate government agency.
- A minimum G.P.A. of 3.0 in both science and non-science courses.
- A minimum 80 hours of observational field experience at a minimum of two orthotics and prosthetics facilities of their choice. A letter of attestation from the facility owner or clinical supervisor is needed from each facility prior to the start of the program.

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.

Prerequisites are listed according to the general education domains they fulfill.

### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- \*Human anatomy with laboratory or biology with laboratory
- \*Physiology
- \*Chemistry

- \*Physics
- \*Statistics

### Domain 4: Social sciences (minimum 12 quarter units)

- General psychology
- \*Human growth and development
- Selected from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- One course (or components integrated into several courses) dealing specifically with issues of human diversity.

### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university
- Other areas of study in communication may include courses in computer information systems, critical thinking, and public speaking.

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

### Electives

Electives can be used to meet the minimum number of units (96 quarter/64 semester units) required for admission. Electives may be selected from the previous domains. For more information regarding GE requirements for graduation, see LLU (p. 26) general education requirements .

## Program requirements

### B.S./M.S.O.P. track

#### Junior Year

#### Autumn Quarter

AHCJ 362	Anatomy	3
AHCJ 375	Physiology	3
ORPR 301	Orthotics and 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

AHRM 471	Statistics and Research for Health Professionals I	3
ORPR 315	Pedorthics	3
ORPR 325	Medical Terminology	3
ORPR 402	Pathology I	3
ORPR 405	Gait Analysis	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1
RELE 457	Christian Ethics and Health Care	2

#### Spring Quarter

AHRM 472	Statistics and Research for Health Professionals II	3
ORPR 320	Biomechanical Evaluation	3

ORPR 330	Lower Extremity Orthotics I	3	ORPR 527	Orthotics III	3
ORPR 340	Lower Extremity Prosthetics I	3	ORPR 540 <sup>1</sup>	Rehabilitative Care in Developing Nations	3
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1	ORPR 506	Advanced Specialty Tracks in Orthotics and Prosthetics	3
ORPR 414	Kinesiology I	3			
RELT 423	Loma Linda Perspectives	2			
<b>Senior Year</b>			<b>Winter Quarter</b>		
<b>Summer Quarter</b>			ORPR 514	Clinical Affiliation	8
			<b>Total Units:</b>		<b>53.5</b>
AHCJ 422	History of Disability	3	<sup>1</sup> Fulfills service learning requirement		
DTCS 301	Human Nutrition	3			
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1			
ORPR 415	Lower Extremity Orthotics II	3	<b>Normal time to complete the program</b>		
ORPR 420	Lower Extremity Prosthetics II	3	Two (2) years (six [6] academic quarters) at LLU at the undergraduate level and one (1) year (four [4] academic quarters) at the graduate level; full-time enrollment required		
ORPR 425	CAD/CAM Technologies	3			
<b>Autumn Quarter</b>			<b>M.S.O.P./hybrid track</b>		
AHCJ 320	ADL and Assistive Devices	3	<b>First Year</b>		
ORPR 323	Economics, Business Management, and Entrepreneurship	3	<b>Summer Quarter</b>		
ORPR 345	Spinal Orthotics	3	ORPR 507	Anatomy for O and P Professionals	2
ORPR 404	Materials Science in Orthotics and Prosthetics	3	ORPR 508	Physiology for O and P Professionals	2
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1	ORPR 516	Orthotics and Prosthetics Materials Science and Technical Skills	2
ORPR 439	Computers and Electronics for O&P Clinicians	3	ORPR 517	Patient Assessment/Kinesiology	2
ORPR 491	Research I	1.5	ORPR 558	Clinical Rotation	1
<b>Winter Quarter</b>			<b>Autumn Quarter</b>		
AHCJ 315	Psychosocial Aspects of Health Care	3	ORPR 509	Pathology for O and P Professionals	2
ORPR 410	Orthotic and Prosthetic Clinical Rotation	1	ORPR 511	Spinal Orthotics	2
ORPR 430	Upper Extremity Orthotics	3	ORPR 519	Biomechanical Evaluation and Gait Analysis	2
ORPR 435	Upper Extremity Prosthetics	3	ORPR 531	Upper-Extremity Orthotics	2
ORPR 440	Bionics and Cyborg Technology	3	ORPR 535	Upper-Extremity Prosthetics	2
RELR 455	Body, Intimacy and Sexuality in Whole Person Care	2	ORPR 558	Clinical Rotation	1
<b>Total Units:</b>		<b>102.5</b>	<b>Winter Quarter</b>		
<b>Graduate Year</b>			ORPR 524	Psychosocial Aspects of Health Care	2
<b>Spring Quarter</b>			ORPR 541	Lower-Extremity Orthotics I	2
AHCJ 516	Clinical Imaging	3	ORPR 545	Lower-Extremity Prosthetics I	2
ORPR 510	Advanced Clinical Rotations	1	ORPR 558	Clinical Rotation	1
ORPR 522	Self-Care Portfolio and Community Outreach	0	ORPR 561	Statistics and Research for OP Professionals I	2
ORPR 526	Prosthetics III	3	<b>Spring Quarter</b>		
ORPR 544	Applied Functional Neuroanatomy	3	ORPR 529	Practice Management	2
ORPR 575	Couples, Families, and Disabilities	3	ORPR 548	Pharmacology in Rehabilitation	2
ORPR 592	Research II	1.5	ORPR 551	Lower-Extremity Orthotics II	2
<b>Summer Quarter</b>			ORPR 555	Lower-Extremity Prosthetics II	2
AHCJ 507	Pharmacology in Rehabilitation	3	ORPR 558	Clinical Rotation	1
ORPR 510	Advanced Clinical Rotations	1	ORPR 562	Statistics and Research for OP Professionals II	2
ORPR 528	Prosthetics IV	3	<b>Second Year</b>		
ORPR 522	Self-Care Portfolio and Community Outreach	0	<b>Summer Quarter</b>		
ORPR 538	Biomechanics	3	ORPR 512	Spinal Clinical Training	2
ORPR 593	Research III	3	ORPR 513	Spinal Technical Skills	2
RELE 524	Bioethics and Society	3	ORPR 530	Patient Management and Documentation	2
<b>Autumn Quarter</b>			ORPR 532	Upper-Extremity Orthotics Clinical Training	2
AHCJ 545	Legal and Ethical Issues in the Health Professions	3	ORPR 533	Upper-Extremity Orthotics Technical Skills	2
ORPR 510	Advanced Clinical Rotations	1	ORPR 536	Upper-Extremity Prosthetics Clinical Training	2
ORPR 522 <sup>1</sup>	Self-Care Portfolio and Community Outreach	2	ORPR 537	Upper-Extremity Prosthetics Technical skills	2

ORPR 559	Advanced Clinical Rotation	1
<b>Autumn Quarter</b>		
ORPR 530	Patient Management and Documentation	2
ORPR 540 <sup>1</sup>	Rehabilitative Care in Developing Nations	3
ORPR 542	Lower-Extremity Orthotics I Clinical Training	2
ORPR 543	Lower-Extremity Orthotics I Technical Skills	2
ORPR 546	Lower-Extremity Prosthetics I Clinical Training	2
ORPR 547	Lower-Extremity Prosthetics I Technical Skills	2
ORPR 559	Advanced Clinical Rotation	1
ORPR 564	Research Proposal	2
<b>Winter Quarter</b>		
ORPR 530	Patient Management and Documentation	2
ORPR 552	Lower-Extremity Orthotics II Clinical Training	2
ORPR 553	Lower-Extremity Orthotics II Technical Skills	2
ORPR 556	Lower-Extremity Prosthetics II Clinical Training	2
ORPR 557	Lower-Extremity Prosthetics II Technical skills	2
ORPR 559	Advanced Clinical Rotation	1
ORPR 565	OP Clinical and Technical Summative Review and ABC Board Prep	2
ORPR 575	Couples, Families, and Disabilities	3
RELR 527	Crisis Care and Counseling	3
<b>Spring Quarter</b>		
ORPR 560	Clinical Affiliation	8
ORPR 566	OP Theoretical Summative Review and ABC Board Prep	2
<b>Total Units:</b>		<b>100</b>

<sup>1</sup> Fulfills service learning requirement

### **Normal time to complete the program**

Two (2) years (8 academic quarters); full-time enrollment required

## Department of Physical Therapy

The full spectrum of entry-level and postprofessional physical therapy degree programs is provided, including Physical Therapist Assistant (A.S.), entry-level Doctor of Physical Therapy (D.P.T.), postprofessional Doctor of Physical Therapy (D.P.T.), and Doctor of Philosophy (Ph.D.).

### Chair

Lawrence E. Chinnock

### Primary faculty

Bruce D. Bradley

Lawrence E. Chinnock

Timothy K. Cordett

Michael DeLeon

Gina Gang

Henry Garcia

Jeremy Hubbard

Susan M. Huffaker

Eric G. Johnson

Theresa M. Joseph

Everett B. Lohmann III

Bradford D. Martin

Pablo Mleziva

Todd Nelson

Ronald M. Rea

R. Wesley Swen

Christine Wilson

### Clinical faculty

Christine Eddow

Steven D. Newton

Kristel J. Zuppan

### Associated faculty

Lee S. Berk

Noha Daher

Michael Davidson

Jeff Gang

Heather Javaherian-Dysinger

Ehren Ngo

Ernest R. Schwab

## Programs

- Physical Therapist Assistant – A.S. (p. 111)
- Physical Therapy – D.P.T. (Entry Level) (p. 113), D.P.T. (Postprofessional) (p. 113), Ph.D. (p. 113)

## Physical Therapist Assistant – A.S.

### Program director

R. Jeremy Hubbard

### Director of clinical education

Jennifer Rae Rubio

### Advisory committee

Karla Barton

Brandi Bolanos

Lisa Ewan

Frank Holder

Carrie Kresser

Douglas Moore

Adam Smith

Steven Snitzer

The physical therapist assistant (PTA) 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 PTA 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 PTAs 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.

## The program

The Physical Therapist Assistant Program, a 15-month curriculum which begins with the sophomore year, leads to the Associate in Science degree and professional licensure. Instruction begins in June, and students participate in graduation ceremonies the following June. Program completion occurs when clinical performance requirements are met—typically by the end of September.

## Clinical learning experiences

The program includes supervised, one-on-one clinical instruction across the human life span in a variety of settings, including acute and sub-acute inpatient facilities and outpatient clinics. Students complete three six-week, full-time clinical experiences, all coordinated and monitored by the director of clinical education or the program director. Although the program makes an effort to accommodate each student's preference, students agree to accept clinical assignments 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 adult, child, and infant cardiopulmonary resuscitation (CPR) 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, California.

## Professional licensing

Satisfactory completion of all degree requirements, including all clinical experience courses, will qualify the graduate for the National Physical Therapy Examination (NPTE) for physical therapist assistants. State licensure or certification is required to practice as a PTA in all 50 states and in the District of Columbia. Information about licensing or certification in the state in which one wishes to practice can be found online at <http://www.apta.org/licensure> (<http://www.apta.org/licensure/>).

## Professional association

Students and graduates are eligible for membership in the American Physical Therapy Association which fosters the development and improvement of physical therapy services and education. The organization grants student membership at a reduced 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 motto of Loma Linda University, "To make man whole," and the mission of the School of Allied Health Professions, "To continue the teaching and healing ministry of Jesus Christ," the program is committed to the highest development of the physical, emotional, mental, and spiritual capacities of its faculty and students. Promoting wholeness constitutes a caring commitment to the well-being of others, to students, and to program personnel; to active engagement in the advancement of the profession; and to a living consecration to God. Students in this program will have opportunities to develop a commitment to excellence in service for others and their profession as well as 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 mission of the Physical Therapist Assistant Program, the program goals are to:

1. Provide adequate space, equipment, and resources in an appropriate learning environment for the technical portion of physical therapist assistant education;
2. Provide opportunities for graduates to practice the concept of wholeness in terms of physical, mental, and spiritual concerns when addressing the needs of the patient/client;
3. Maintain compliance with the Standards and Required Elements for accreditation of PTA educational programs, published by the Commission on Accreditation in Physical Therapy Education.

## Program learning outcomes

Upon program completion, the graduate should be able to:

1. Demonstrate entry-level knowledge and skills appropriate for safe practice as a physical therapist assistant with effective clinical reasoning and lifelong-learning skills.
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, including compassionate respect for differences.
4. Demonstrate consideration of the close interrelationship of physical, mental, and spiritual concerns when addressing the needs of patients/clients and others.

## Accreditation

The Physical Therapist Assistant Program at Loma Linda University is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Avenue, Suite 100, Alexandria, VA 22305-3085; 800/ 999-2782; email: [accreditation@apta.org](mailto:accreditation@apta.org); website: <http://www.capteonline.org>. (<http://www.capteonline.org/>) If needing to contact the program/institution directly, please call 909/558-4634 or email [studyppta@llu.edu](mailto:studyppta@llu.edu) ([jmendes@llu.edu](mailto:jmendes@llu.edu)).

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) 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
- transfer of prerequisite courses from an accredited college or university. Note: Grades below C (2.0) are not transferable for credit.
- a personal interview
- a writing assessment done at the time of the interview
- documentation of work or observation experience; specifically, at least 20 hours of work or 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 80 hours.

## Prerequisites

All prerequisite courses must be completed prior to entering the program. An application for admission may be submitted while some coursework is in progress if the student expects to complete the required coursework



before the program begins. Individuals who have earned a bachelor's degree from an accredited college or university need to complete only the courses denoted with an asterisk (\*):

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 mathematics with grades C or above, or intermediate algebra in college or a college statistics course

\*General psychology

\*Human growth and development or developmental psychology or abnormal psychology

English composition, complete sequence

\*Speech (preferred) or Interpersonal communication (accepted)

Personal health/nutrition, or two physical education/activity courses

\*Medical terminology

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

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 Biophysical Agents	3
PTAS 265	Professional Seminar	0
PTAS 275	Psychosocial Aspects of Health	2
RELE 257	Health Care 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 I	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 275	Whole Person Care	2

#### Spring Quarter

PTAS 241	Applied Pediatrics	2
PTAS 251	Orthopaedics II	3

PTAS 261	Physical Therapy Practice	1
PTAS 265 <sup>1</sup>	Professional Seminar	1
PTAS 293	Physical Therapist Assistant Clinical Experience I	6

#### Summer Quarter 2

PTAS 294	Physical Therapist Assistant Clinical Experience II	6
PTAS 295	Physical Therapist Assistant Clinical Experience III	6

**Total Units:** 72

<sup>1</sup> Fulfills service learning requirement

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

### Normal time to complete the program

1.33 years (Five [5] academic quarters) at LLU – full-time enrollment typical; half-time enrollment (3.25 years) by permission only

## Physical Therapy – D.P.T. (Entry Level), D.P.T. (Postprofessional), Ph.D.

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

Physical therapists teach patients how to prevent injury or disability and manage conditions to 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 skilled nursing facilities. State licensure is required in each state in which a physical therapist practices.

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

- Entry-level Doctor of Physical Therapy.
- Postprofessional Doctor of Physical Therapy.
- Doctor of Philosophy.

## Programs

- Physical Therapy – D.P.T. (Entry Level) (p. 114), D.P.T. (Postprofessional) (p. 115), Ph.D. (p. 117)

# Physical Therapy – D.P.T. (Entry Level)

## Program director

Lawrence E. Chinnock

## Directors of clinical education

Henry Garcia

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's degree in the field of physical therapy. The D.P.T. degree curriculum lasts for three years. Individuals must have an earned bachelor degree in any field prior to entering 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 four-week clinical experience during the spring module. Second-year students complete a four-week clinical experience following the spring module. The major clinical experiences are during the third year. Student are assigned experiences as follows: 12 weeks during the autumn module, 11 weeks during the winter module, and 10 weeks during the spring module.

The director of clinical education (or a designee) plans and schedules all clinical assignments. 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. Students should expect that at least one rotation will be beyond commuting distance from Loma Linda University. Many clinical sites will require the student to have a current flu vaccine if the rotation is during flu season. Therefore, the University requires that all students receive the flu vaccine on a yearly basis.

## Program learning outcomes

Upon completion of the degree, the graduate should be able to:

1. Conduct a safe and effective physical therapy practice.
2. Demonstrate compassion and respect during interactions with individuals from different ethnic and cultural backgrounds.
3. Think critically and integrate evidence-based practice into their clinical decision-making skill set.
4. Apply ethical and legal parameters surrounding the profession of physical therapy.
5. Provide evidence-based clinical care utilizing collaborative relationships among the patient, physical therapist, and other health-care practitioners.
6. Make use of effective verbal and nonverbal communication with instructors, classmates, and clinical personnel as needed to work effectively as a member of a health-care team.

## 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

in member 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 the National Physical Therapy Examination. 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 license to practice. A California application form and fee are submitted to the Physical Therapy Board of California, 2005 Evergreen Street, Suite 2600, Sacramento, CA 95815; telephone: 916-561-8200; website: <http://www.ptbc.ca.gov/>.

## 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), 3030 Potomac Avenue, Alexandria, Virginia 22305-3085; telephone: 800/999-2782; email: [accreditation@apta.org](mailto: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. 23) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- an earned bachelor's degree in any field from an accredited college or university
- a minimum prerequisite G.P.A. of 3.4
- anatomy and physiology, complete sequence with laboratory
- general chemistry, complete sequence with laboratory
- general physics, complete sequence with laboratory
- two additional biological science courses (e.g. cell biology, microbiology, exercise physiology, upper division anatomy and/or physiology)
- statistics
- medical terminology
- general psychology
- human growth and development (developmental psychology, child psychology)
- one course in basic communication (speech)
- 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.
- GRE

## Technology requirement

Students are required to have an iPad that can be brought to class with them as the majority of quizzes and tests are completed on the device. A \$65 technology fee is charged each year.

## Program requirements

### First Year

AHCJ 510	Human Gross Anatomy	9
AHCJ 705	Infectious Disease and the Health Care Provider	1
AHCJ 721 <sup>1</sup>	Wholeness Portfolio I	1
PHTH 505	Integrated Clinical Experience	1
PHTH 506	Exercise Physiology	3
PHTH 508	PT Communication and Documentation	2
PHTH 509	Biophysical Agents	3
PHTH 510	Kinesiology	3
PHTH 513	Therapeutic Procedures	3
PHTH 514	Manual Muscle Testing	3
PHTH 516	Histology	2
PHTH 519	Locomotion Studies	3
PHTH 521A	Orthopaedics 1A	3
PHTH 528	Therapeutic Exercise I	3
PHTH 539	Integrative Physiology	4
PHTH 557	Pediatrics I	3
PHTH 563	Research I	2
PHTH 564	Research II	1
PHTH 565	Research III	1
PHTH 566	Pathology	4
PHTH 568	Integrative Neuroanatomy	4
PHTH 569	Clinical Neurology	2
PHTH 571	Short Clinical Experience I	2
PHTH 586	Orthotics and Prosthetics	2
RELE 707	Ethics for Allied Health Professionals	2
RELR 775	Whole Person Care	2
RELT 718	Adventist Heritage and Health	2

### Second Year

AHCJ 722	Wholeness Portfolio II	1
PHTH 501	Neurology I	3
PHTH 502	Neurology II	3
PHTH 503	Neurology III	3
PHTH 505	Integrated Clinical Experience	1
PHTH 511	Clinical Orthopaedics	2
PHTH 512	Clinical Psychiatry	2
PHTH 517	Movement Science	2
PHTH 518	Aspects of Health Promotion	2
PHTH 521B	Orthopaedics 1B	3
PHTH 522	Orthopaedics II	3
PHTH 523	Orthopaedics III	3
PHTH 525	General Medicine	3
PHTH 526A	Cardiopulmonary I	3
PHTH 526B	Cardiopulmonary II	3
PHTH 530	Therapeutic Exercise II	3
PHTH 534	Soft Tissue Techniques	2
PHTH 540	Concepts of Acute Care	2
PHTH 555	Medical Screening	2
PHTH 558	Pediatrics II	3
PHTH 559	Geriatrics	2

### Units

PHTH 561	Physical Therapy Administration	4
PHTH 575	Orthopaedics IV	1
PHTH 587	Pharmacology	2
PHTH 595	Clinical Imaging	3
PHTH 597	Specialized Interventions in Physical Therapy	2
RELT 740	World Religions and Human Health	3
<b>Third Year</b>		
PHTH 504	Neurology IV	1
PHTH 572	Short Clinical Experience II	2
PHTH 596	Orthopaedics V	3
PHTH 701	Long Clinical Experience I	5
PHTH 702	Long Clinical Experience II	5
PHTH 703	Long Clinical Experience III	5
<b>Total Units:</b>		<b>158</b>

<sup>1</sup> Fulfills service learning requirement

### Noncourse requirement

Program completion and eligibility to sit for the National Physical Therapy Examination (NPTE) is dependent on successful completion of all coursework and passing a final comprehensive examination.

### Normal time to complete the program

Three (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-D.P.T.) degree is designed for the individual with a degree in physical therapy who wishes to pursue advanced studies within the profession.

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

- The 66-unit track is designed for individuals with a bachelor's degree in physical therapy from an accredited program, or who have the equivalent of a U.S. bachelor's degree in physical therapy.
- The 45-unit track is designed for individuals with a bachelor's degree in physical therapy from an accredited program, or who have the equivalent of a U.S. bachelor's degree in physical therapy, and have 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 \$65 technology fee is charged in year one for the 45-unit track, and years one and two for the 66-unit track.

## Program learning outcomes

In addition to the stated institutional learning outcomes (p. 19), by the end of this program, the graduate should be able to:

1. Demonstrate a commitment to discovery.
2. Apply basic sciences to physical therapy practice.
3. Provide advanced patient-specific physical therapy care.
4. 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. 23) 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 four (4) year 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 program.

## Program requirements

### 45-unit track

#### Required

AHCJ 519	Graduate Wholeness Portfolio <sup>1</sup>	1
PTGR 511	Advanced Clinical Practice I: Orthopaedic Rehabilitation	3
PTGR 512	Advanced Clinical Practice II	3
PTGR 513	Advanced Clinical Practice III	3
PTGR 514	Professional Systems in Management I	3
PTGR 515	Cardiopulmonary Approaches to Assessment, Wellness, and Disease	3
PTGR 516	Movement Science of the Upper Quarter	3
PTGR 517	Movement Science: Lower Quarter Biomechanical Relationships	3
PTGR 519	Home Health Physical Therapy for the Post-Acute Patient	3
PTGR 553	Clinical Reasoning and Critical Thinking in Physical Therapy	3
PTGR 571	Advanced Physiology I: Neurobiology	3
PTGR 578	Medical Screening for Physical Therapists	3
PTGR 579	Clinical Imaging for Physical Therapist	3
PTGR 594	Evidence-Based Practice in Physical Therapy	2
RELR 525	Health Care and the Dynamics of Christian Leadership	3

#### Electives

**Choose 3 units from the following:** **3**

PTGR 501	Advanced Orthopaedic Specialty Tracks I
PTGR 505	Orthopaedic Intervention: Regional Interdependency of the Cervical Spine & Upper Extremities
PTGR 509	Function-Based Rehabilitation

PTGR 518	Topics in Rehabilitation
PTGR 529	Integumentary and Lymphatic Systems: Evaluation and Intervention

**Total Units** **45**

<sup>1</sup> Fulfills service learning requirement

### Normal time to complete the program

One (1) year (four [4] academic quarters) – based on full-time enrollment

### 66-unit track

#### Required

AHCJ 519	Graduate Wholeness Portfolio <sup>1</sup>	1
PTGR 501	Advanced Orthopaedic Specialty Tracks I	3
PTGR 505	Orthopaedic Intervention: Regional Interdependency of the Cervical Spine & Upper Extremities	3
PTGR 506	Soft-Tissue Mobilization	3
PTGR 509	Function-Based Rehabilitation	3
PTGR 510	Neurologic Upper Extremity Management	3
PTGR 511	Advanced Clinical Practice I: Orthopaedic Rehabilitation	3
PTGR 512	Advanced Clinical Practice II	3
PTGR 513	Advanced Clinical Practice III	3
PTGR 514	Professional Systems in Management I	3
PTGR 515	Cardiopulmonary Approaches to Assessment, Wellness, and Disease	3
PTGR 516	Movement Science of the Upper Quarter	3
PTGR 517	Movement Science: Lower Quarter Biomechanical Relationships	3
PTGR 519	Home Health Physical Therapy for the Post-Acute Patient	3
PTGR 529	Integumentary and Lymphatic Systems: Evaluation and Intervention	3
PTGR 553	Clinical Reasoning and Critical Thinking in Physical Therapy	3
PTGR 571	Advanced Physiology I: Neurobiology	3
PTGR 573	Pathokinesiology of Gait	3
PTGR 577	Pharmacology in Physical Therapy	3
PTGR 578	Medical Screening for Physical Therapists	3
PTGR 579	Clinical Imaging for Physical Therapist	3
PTGR 594	Evidence-Based Practice in Physical Therapy	2
RELR 525	Health Care and the Dynamics of Christian Leadership	3

**Total Units** **66**

<sup>1</sup> Fulfills service learning requirement

### Normal time to complete the program

1.5 years (six [6] academic quarters) – based on full-time enrollment

# Physical Therapy – Ph.D.

## Program director

Everett B. Lohman III

The Department of Physical Therapy offers the Doctor of Philosophy (Ph.D.) degree in physical therapy. This research-oriented program for physical therapists emphasizes pain and movement sciences as well as lifestyle health and wellness, preparing graduates for research, teaching, and administration. Successful completion of a comprehensive written examination, written dissertation, and an oral defense of the dissertation are required. The diploma will be awarded upon completion of the curriculum and recommendation by the School of Allied Health Professions in conjunction with the Faculty of Graduate Studies.

## Program description

Designed for the working professional, the Ph.D. in physical therapy resonates with the University's Motto, "To Make Man Whole." Physical therapists who are currently treating or teaching will benefit from a modern, evidence-based curriculum aimed at caring for the whole person. Face-to-face classes, two evenings a week, facilitate the balance of work and study. Aligned closely with our core values, this program provides physical therapy graduates with the skills and experience necessary to pursue careers as researchers and educators.

It is the goal of the program to prepare graduates with:

- Skills to design and conduct novel, original research; provide evidence of an understanding of research design, and the ability to formulate and develop methodologies; collect and reduce data; interpret results; draw defensible conclusions; and effectively disseminate research findings.
- Qualities of lifelong learning and commitment to scholarship following graduation.
- Skills to add to the body of knowledge in physical therapy research literature through publications and presentations.
- Ability to demonstrate a commitment to conducting research in neurology, orthopaedics, pain science, movement science, or lifestyle health and wellness.
- Ability to demonstrate a commitment to providing whole-person care.
- Skills to serve as an educator in entry-level, postprofessional, and graduate-level physical therapy programs.
- Ability to demonstrate personal and group leadership skills at institutional, professional, national, and global levels.

## Program learning outcomes

In addition to the stated institutional student learning outcomes (p. 19), by the end of this program, the graduate should be able to:

1. Demonstrate a commitment to discovery.
2. Demonstrate a commitment to the dissemination of knowledge through publications and presentations.
3. Demonstrate a commitment to developing treatment plans that follow current evidence-based and best practice guidelines.

## Technology requirement

Students are required to have iPads for 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 personal computers (minimum: 800 MHz multimedia) with Internet access (minimum: 56

k.b.p.s. [connected at 44+ k.b.p.s.]). A \$65 technology fee is charged in years one and two.

## Research funding

Each student will be required to conduct one or more research projects in partial fulfillment of the requirements for the Doctor of Philosophy degree in physical therapy. Typical costs for student research projects range from \$2,500 to \$10,000. The physical therapy department will cover the first \$2,500 of approved research expenses. The student and/or sponsor will be required to cover research-related expenses over this amount. When necessary, the program director and dissertation chair will assist the student in attempting to secure funding for unmet research expenses. Additional financial support may be awarded by application for seed-grant funding through the SAHP Research Committee.

## General requirements

For more information about program requirements and practices for graduate students, the student should consult the Policies and General Regulations in Section II and the School of Allied Health Professions in Section III of this CATALOG. The student should also consult the Doctor of Philosophy's 26 elements for program-specific requirements. These elements can be found at <http://alliedhealth.llu.edu/academics/physical-therapy/degree-options/physical-therapy-phd> (<http://alliedhealth.llu.edu/academics/physical-therapy/degree-options/physical-therapy-phd/>).

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions (p. 47) admissions requirements, the applicant must also complete the following requirements:

- Bachelors of Science degree in Physical Therapy plus a master's degree, a Masters of Physical Therapy degree, or a Doctor of Physical Therapy degree from an accredited program, or equivalency.
- Minimum grade point average of 3.3 in academic and professional coursework.
- Proof of physical licensure in the U.S. or equivalency in the country of training.

Must also submit:

- At least one example of written work (e.g., personal essay, term paper, publication, master's thesis or project).
- Curriculum vitae, including work history, formal education, continuing education, licensure and certification, professional organizations, honors, awards, publications, presentations, and grants.
- A formal letter outlining research interests.
- A structured oral interview.

## Program requirements

Required units:

- 89 – for students with a Bachelor of Science degree in physical therapy plus a Masters of Physical Therapy (M.P.T.) degree or another appropriate master's degree
- 72 – for students with a Doctor of Physical Therapy (D.P.T.) degree

### Domain 1: Core courses

PTGR 550	Introduction to Psychoneuroimmunology: The Science of Whole Person Care	3
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PTGR 552	Pain Science: Interactions of the Brain and Body	3
PTGR 580	Movement Science: Bio-control	3
PTGR 591	Biomechanics I	3
PTGR 599	Comprehensive Examination	0
STAT 515	Grant- and Contract-Proposal Writing	3

**Domain 2: Clinical and applied sciences**<sup>1</sup> **12-24**

Select from the following: (12 units required for students with a prior D.P.T. degree and 24 units required for students with a prior M.S./M.P.T. degree)<sup>2</sup>

PTGR 501	Advanced Orthopaedic Specialty Tracks I	
PTGR 502	Advanced Orthopaedic Specialty Tracks II	
PTGR 504	Science and Biomechanics of the Fascia and the Art of Myofascial Release	
PTGR 505	Orthopaedic Intervention: Regional Interdependency of the Cervical Spine & Upper Extremities	
PTGR 506	Soft-Tissue Mobilization	
PTGR 508	Current Topics in Neurological Rehabilitation	
PTGR 509	Function-Based Rehabilitation	
PTGR 510	Neurologic Upper Extremity Management	
PTGR 511	Advanced Clinical Practice I: Orthopaedic Rehabilitation	
PTGR 512	Advanced Clinical Practice II	
PTGR 513	Advanced Clinical Practice III	
PTGR 515	Cardiopulmonary Approaches to Assessment, Wellness, and Disease	
PTGR 516	Movement Science of the Upper Quarter <sup>3</sup>	
PTGR 517	Movement Science: Lower Quarter Biomechanical Relationships <sup>3</sup>	
PTGR 518	Topics in Rehabilitation <sup>4</sup>	
PTGR 519	Home Health Physical Therapy for the Post-Acute Patient	
PTGR 520	Cervical Spine	
PTGR 521	Lumbar Spine	
PTGR 522	Assessment and Management of the Knee	
PTGR 523	Advanced Neurological Rehabilitation	
PTGR 524	Women's Health Issues I	
PTGR 529	Integumentary and Lymphatic Systems: Evaluation and Intervention	
PTGR 531	Advanced Orthopaedic Procedures I	
PTGR 532	Advanced Orthopaedic Procedures II	
PTGR 533	Advanced Orthopaedic Procedures III	
PTGR 534	Sensory Integration Disorders	
PTGR 535	Sensory Integration Disorders II	
PTGR 536	Sensory Integration Disorders III	
PTGR 551	Clinical Translation of Pain Science	
PTGR 571	Advanced Physiology I: Neurobiology	
PTGR 573	Pathokinesiology of Gait	
PTGR 577	Pharmacology in Physical Therapy	
PTGR 578	Medical Screening for Physical Therapists	
PTGR 579	Clinical Imaging for Physical Therapist	
PTGR 584	Functional Magnetic Resonance Imaging	
PTGR 585	Three-dimension Medical Imaging Quantitation	
PTGR 592	Biomechanics II	

**Domain 3: Lifestyle health and wellness** **3-6**

Select from the following: (3 units required for students with a prior D.P.T. degree and 6 units required for students with a prior M.S./M.P.T. degree)

AHCJ 528	Lifestyle Health and Wholeness	
AHCJ 541	Managing Stress	
AHCJ 546	Therapeutic Humor in Health Care	
AHCJ 568	Spirituality and Health: The Wholeness Connection	
HPRO 515	Mind-Body Interactions and Health Outcomes	

**Domain 4: Education, administration, and leadership** **9**

Select from the following:

AHCJ 506	Educational Evaluation and Clinical Assessment	
AHCJ 509	Transformational Teaching and Learning	
AHCJ 515	Curriculum Development in Higher Education	
AHCJ 556	Administration in Higher Education	
AHCJ 564	Collaborative Learning in Higher Education	
PTGR 514	Professional Systems in Management I	

**Domain 5: Religion**

One course from each area (RELE, RELR, & RELT) required:

RELR 540	Wholeness and Health <sup>7</sup>	3
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Choose one course from the followings: 3

RELE 524	Bioethics and Society	
RELE 525	Ethics for Scientists	
RELE 534	Ethical Issues in Public Health	
RELE 564	Ethics and Health Disparities	
RELE 567	World Religions and Bioethics	
RELE 568	Bioethics and the Law	
RELE 588	Philosophical Ethics	

Choose one course from the followings: 3

RELT 500	Biblical Hermeneutics	
RELT 540	World Religions and Human Health	
RELT 557	Theology of Human Suffering	
RELT 617	Seminar in Religion and the Sciences	

**Domain 6: Research and statistics (24-26 units)**

Not required of all students. See footnotes for details. 0-3

Required:

AHRM 581	Research and Statistics I	3
AHRM 582	Research and Statistics II	3
PTGR 594	Evidence-Based Practice in Physical Therapy <sup>5</sup>	2
PTGR 693	Research and Statistics III: Development and Approval of Research Topic and Questions	3
PTGR 694	Proposal Development and Institutional Review Board Approval	3
PTGR 695	Research and Statistics V: Data Collection (3) <sup>6</sup>	6
PTGR 696	Research and Statistics VI: Data Analysis	3
PTGR 699	Research and Statistics VII - Dissertation	3

**Total Units** **72-89**

<sup>1</sup> All courses will be focused toward research topic.

<sup>2</sup> Courses to be selected in consultation with program director and dissertation chair to enhance the student's knowledge base in regards to their research topic.

<sup>3</sup> PTGR 516 Movement Science of the Upper Quarter and/or PTGR 517 Movement Science: Lower Quarter Biomechanical Relationships (or

equivalency) required for students who have not taken these courses in prior M.P.T. or D.P.T. program.

<sup>4</sup> PTGR 518 Topics in Rehabilitation are courses related to special topics in rehabilitation (e.g., Sports Medicine, Manual Therapy, Neurological).

<sup>5</sup> Required for M.S./M.P.T. Required for D.P.T. if course, or equivalent, not taken prior to entrance into the program.

<sup>6</sup> Course to be taken twice – each registration (3 units) pertains to the data collection for one of the two required papers.

<sup>7</sup> Fulfills service learning requirement

### **Comprehensive Examination**

PTGR 599 Comprehensive Examination is designed to establish that the student has a broad understanding of physical therapy, research biostatistics and basic research methodology, education, bioethics, and professionalism. Since education is a component of the comprehensive exam, students are encouraged to select a minimum of 9 units of teaching/education-related courses from Domain 5. The written comprehensive examination will be administered after students have successfully completed the majority of required courses in Domains 1-6. The comprehensive examination will typically occur during the summer quarter of the student's second year in the Ph.D. in Physical Therapy program.

### **Noncourse requirement**

#### **Advancement to Candidacy**

The student may apply for advancement to candidacy after a) passing the comprehensive examination, b) securing support from their research guidance committee, and c) successfully defending their research topic and questions. The candidate's capacity for original, independent investigation and scholarly achievements must be demonstrated by the presentation and oral defense of an acceptable dissertation in order to participate in the commencement ceremony. The candidate must submit a written dissertation to the Faculty of Graduate Studies. The candidate must also submit a minimum of two papers for publication. One paper must be accepted for publication to fulfill program completion requirements.

### **Normal time to complete the program**

Four (4) years (16 academic quarters) – full-time enrollment required

## 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 through 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: [pa@llu.edu](mailto:pa@llu.edu); or visit the department website at [llu.edu/allied-health/sahp/pa](http://llu.edu/allied-health/sahp/pa) (<http://www.llu.edu/allied-health/sahp/pa/>).

### Chair

Catherine Oms

### Program director

Courtney Marquez

### Medical director

Wessam Labib

### Program assessment director

Rasha Abdrabou

### Didactic director

Erin Gysbers

### Didactic coordinators

Shannon Rivera

### Clinical director

Kristin Batla

### Clinical coordinators

Lauren Bolda

Charles Huynh

### Adjunct Faculty

Yasmin Chene

Mirella Cortez

Bethania Siviero

William Wilson

## Program

Physician Assistant – M.P.A. (p. 120)

## Physician Assistant – M.P.A.

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 health-care professionals.

The program consists of didactic and clinical phases that run sequentially for eight quarters over a 24-month period. A new class is accepted annually from diverse cultural and ethnic backgrounds—with consideration of academic performance, clinical experiences, and service to the community.

## Mission statement

The Loma Linda University Department of Physician Assistant (PA) Sciences educates primary-care physician assistants who will provide health care in collaboration with physicians as active members of a professional health-care team. We are committed to excellence and compassion for the whole person and quality health care for underserved communities locally and globally, in accordance with the mission of Loma Linda University and the School of Allied Health Professions.

## Vision

Graduates of the Loma Linda University Master of Physician Assistant Program will be recognized for professional excellence, integrity, empathy, teamwork, and advocating lifestyle changes to promote wholeness.

## Program learning outcomes

In addition to the stated institutional learning outcomes (p. 19), at the end of this program, the graduate should be able to:

1. Apply the basic sciences to physician assistant sciences.
2. Demonstrate clinical skills in patient-care settings.
3. Demonstrate critical thinking skills in physician assistant sciences and practice.
4. Exhibit professionalism appropriate for physician assistants.
5. Provide culturally proficient, whole-person care to individuals and communities.
6. Demonstrate a commitment to the promotion of the physician assistant profession.

## Goals

1. Provide a curriculum whose required academic content and clinical experience equip graduates to provide competent medical care that will enhance the services of the medical profession.
2. Graduate PAs who enhance the services of supervising physicians as part of the physician-PA team and collaborate with other members of an interdisciplinary health-care team to provide quality patient care.
3. Graduate PAs who will utilize their education and training to make significant contributions to the health of the community.
4. Graduate PAs who improve access to medical services by providing whole-person care to those living in underserved communities.
5. Graduate PAs who are culturally competent and able to care for diverse populations with compassion and excellence.
6. Graduate PAs who will provide care with the highest ethical standards.

7. Graduate PAs who will be lifelong learners and actively engaged in the PA profession.

## Housing

On-campus housing is available for men and women. For information on Daniells Residence, call 1-909/558-4562. For information on Lindsay Hall, call 1-909/558-4561.

## Financial assistance

For information regarding funding opportunities, see Student Aid (p. 42) in the financial polices section of this CATALOG.

## Accreditation

View our Accreditation History (<http://www.arc-pa.org/accreditation-history-loma-linda-university/>).

The Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA), 3325 Paddocks Parkway, Suite 345, Suwanee GA 30024; telephone, 1-770/476-1224; email, [accreditationservices@arc-pa.org](mailto:accreditationservices@arc-pa.org); website, <http://www.arc-pa.org>; has granted Accreditation-Continued status to the Loma Linda University Physician Assistant program sponsored by Loma Linda University. Accreditation-Continued is an accreditation status granted when a currently accredited program is in compliance with the ARC-PA *Standards*.

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 validation review of the program by the ARC-PA will be March 2027. The review date is contingent upon continued compliance with the Accreditation *Standards* and ARC-PA policy.

## Admissions

Applications are accepted between May 1 and October 1, 11:59 pm EST. Applications must be made through the Central Application Service for Physician Assistants. This service is available at [caspa.liaisoncas.com](http://caspa.liaisoncas.com) (<https://caspa.liaisoncas.com>). 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, 11:59 pm PST. Required interviews are granted to qualified applicants upon invitation by the admissions committee. Applicant must also complete the following requirements:

- A baccalaureate degree from an accredited college or university, 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 reference, including one from a practicing MD/DO/PA who you have worked under in a direct, hands-on, paid patient care experience. Letter of reference from MD/DO/PA **must** be typed on official letterhead. This letter **cannot** be from a friend or relative, and **cannot** be from a shadowing experience.
- Documented paid patient-care experience of 2,000 hours minimum by August 31st of the year of matriculation. Accepted clinical experiences include accredited, credentialed professions that provide patient assessment, treatment, patient care plans, and diagnostic testing. Applicants must have direct patient care experience working in a clinical setting which requires a high level of critical thinking and responsibility to the patient. Only paid hours are acceptable.

Hours completed during the following experiences are **not** accepted: student clinicals, externships, internships, foreign medical positions, shadowing, and volunteer experiences.

- Prerequisites:
  - Please note that a passing grade is considered a C or better. Prerequisite courses which were changed to Pass/Fail (P/F) due to closure of academic institution during the COVID-19 pandemic will not be accepted.
  - All prerequisite coursework must be taken at an accredited college or university in the United States prior to acceptance.
  - A maximum of 2 total prerequisite courses may be outstanding at the time of application; with no more than 1 science prerequisites outstanding.
  - Science courses must be for science majors and include a laboratory component. All prerequisite science courses are required to have been taken within the last 10 years. Introductory courses are not accepted as meeting our science prerequisite course criteria.
  - All outstanding prerequisites must be completed with a grade of C or better by the end of the spring term prior to matriculation.
- International applicants (non-U.S. citizens and non-U.S. permanent residents) must meet all admission requirements, provide suitable recommendations, furnish English evaluations of all official foreign transcripts and credentials, and give evidence of their ability to meet estimated living expenses and all financial obligations to the University during their program. Please refer to the international student information (p. 23) page for a complete list of requirements for international students.
- Admission into the PA Program at Loma Linda University is contingent upon a criminal background check. Falsification of this information or omission of criminal misconduct is not acceptable and may result in retraction of offer of admission.

## Prerequisite courses

The final determination on whether a course will meet our criteria will rest with the admissions committee. Please note, while the Physician Assistant Program at Loma Linda University requires specific courses as prerequisites to enrollment, these prerequisites cannot substitute for more advanced applied content within the Physician Assistant Program curriculum. College-level prerequisite courses include the following:

- Human anatomy and physiology with laboratory. Coursework can be a complete sequence OR separate courses in human anatomy and human physiology. Must cover all organ systems.
- General chemistry, one-year sequence with laboratory **or** a 2- or 3-term complete sequence of inorganic chemistry, organic chemistry, and biochemistry with laboratory for all courses.
- General microbiology with laboratory. Must cover the following areas: bacteria, viruses, fungi, and protozoa.
- General psychology **or** development psychology covering the lifespan.
- General sociology **or** cultural anthropology (must cover multiple groups).
- College algebra: Intermediate algebra does not fulfill this requirement nor do statistics courses, although recommended.
- English composition: one year sequence. English as a second language (ESL) courses do not satisfy this prerequisite.

## Recommended courses

- Statistics
- Medical terminology
- Conversational Spanish

## Admission preferences

- Seventh-day Adventists
- Graduates of Loma Linda University
- Applicants from underrepresented populations
- Applicants with a history of meaningful, continuous involvement in community service consistent with the mission and values of Loma Linda University
- Applicants with documented military service

## Program requirements

### First Year

	Units
PAST 501 Anatomy for Physician Assistants I	2
PAST 502 Anatomy for Physician Assistants II	2
PAST 503 Anatomy for Physician Assistants III	2
PAST 504 Primary Care Pediatrics	3
PAST 505 Women's Health Care	3
PAST 511 Pharmacology for Physician Assistants I	2
PAST 512 Pharmacology for Physician Assistants II	2
PAST 513 Pharmacology for Physician Assistants III	2
PAST 530 Diagnostic Techniques for Physician Assistants I	1
PAST 531 Diagnostic Techniques for Physician Assistants II	1
PAST 532 Diagnostic Techniques for Physician Assistants III	1
PAST 547 Basic Medical Science	3
PAST 551 Normal and Pathologic Physiology for Physician Assistants I	2
PAST 552 Normal and Pathologic Physiology for Physician Assistants II	2
PAST 553 Normal and Pathologic Physiology for Physician Assistants III	2
PAST 554 Clinical Skills for Physician Assistants	4
PAST 556 Preventive Medicine and Health Promotion	2
PAST 558 Psychiatry for Physician Assistants	3
PAST 571 Integrative Spanish for Physician Assistants	3
PAST 572 <sup>1</sup> Culture and Community for Physician Assistants	3
PAST 575 Clinical Correlation for Physician Assistants I	1
PAST 576 Clinical Correlation for Physician Assistants II	1
PAST 577 Clinical Correlation for Physician Assistants III	1
PAST 578 Clinical Correlation for Physician Assistants IV	1
PAST 581 Physical Diagnosis for Physician Assistants I	2
PAST 582 Physical Diagnosis for Physician Assistants II	3
PAST 583 Physical Diagnosis for Physician Assistants III	2
PAST 584 Physical Diagnosis for Physician Assistants IV	2
PAST 591 Clinical Medicine for Physician Assistants I	3
PAST 592 Clinical Medicine for Physician Assistants II	3
PAST 593 Clinical Medicine for Physician Assistants III	3
PAST 594 Clinical Medicine for Physician Assistants IV	2
PAST 601 Evidence-Based Medicine for Physician Assistants I	2

PAST 602 Evidence-Based Medicine for Physician Assistants II	2
RELE 505 Clinical Ethics	3
<b>Second Year</b>	
PAST 516A Physician Assistant Professional Issues	1
PAST 516B Physician Assistant Professional Issues	1
PAST 603A Capstone	1
PAST 603B Capstone	1
PAST 701 Rotation I	6
PAST 702 Rotation II	6
PAST 703 Rotation III	6
PAST 704 Rotation IV	6
PAST 705 Rotation V	6
PAST 706 Rotation VI	6
PAST 707 Rotation VII	6
PAST 708 Rotation VIII	6
<hr/>	
<b>Total Units:</b>	<b>128</b>

<sup>1</sup> Fulfills service learning requirement

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

### Normal time to complete the program

2.33 years (eight [8] academic quarters) – full-time enrollment required



## Department of Radiation Technology

The Department of Radiation Technology comprises diverse specialties, where radiographers image body structures. 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 uses sound waves to image the human body. 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 chairs

Michael F. Iorio

Timothy Seavey

### Primary faculty

Laura L. Alipoon

Brenda L. Boyd

J. Robert Cruise II

Carol A. Davis

Erin Marshall

William J. Edmunds

Raynold Ho

Michael F. Iorio

Arthur W. Kroetz

Brigit C. Mendoza

Teresa R. Mosley

James Rippetoe

Timothy Seavey

### Secondary faculty

Reinhard W. Schulte

### Clinical faculty

Noriece R. Kisinger

Bridgette Clark

David Gentry

Irene M. Bielitz

Anh M. Ly

Enoch Montalban

Glenn A. Rouse

### Associated faculty

Noha S. Daher

Baldev Patyal

## Programs

- Cardiac Electrophysiology Technology – A.S. (p. 123)
- Diagnostic Medical Sonography – B.S. (p. 125), Certificate (p. 127)
- Medical Radiography – A.S. (p. 127)
- Nuclear Medicine Technology – B.S. (p. 129)
- Radiation Sciences – B.S. (Entry Level and Postprofessional) (p. 134)
- Radiation Therapy Technology – B.S. (p. 141)
- Radiologist Assistant – M.S.R.S. (p. 143)
- Special Imaging – CVI, (p. 146) CT, MRI, (<http://llucatalog.llu.edu/allied-health-professions/special-imaging-ct-mri-certificate/>) CT/MRI Certificate (p. 144), Comparison (p. 147)

## Cardiac Electrophysiology Technology – A.S.

### Program director

Ryan Allen

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, as well as for pacemaker, implantable cardioverter defibrillator, and cardiac resynchronization therapy device implantations.

The Cardiac Electrophysiology Technology Program leads to an Associate in Science degree. The program is based on one year of prerequisites completed at any regionally accredited college or university. The four quarters of coursework at Loma Linda University begin with Autumn Quarter of the sophomore year. All didactic coursework is taught online. Clinical experiences are conducted at affiliated cardiac electrophysiology departments within the State of California and other approved states.

## CPR certification

Students are required to have current health-care provider adult, child, and infant cardiopulmonary resuscitation (CPR) certification 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.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate clinical competence.
2. Communicate effectively.
3. Exhibit 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) and Cardiovascular Credentialing International (CCI).

## Accreditation

The Cardiac Electrophysiology Program is accredited by the the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Joint Review Committee on Education in Cardiovascular Technology (JRC-CVT), 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; telephone: 727/210-2350; website: www.caahep.org (<http://www.caahep.org/>).

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

Minimum G.P.A. of 2.4 and prerequisites as follow:

### Prerequisites

- College algebra
- Anatomy and physiology (complete sequence with lab)
- Introductory physics or high school physics
- Medical terminology
- Choose one from the following: general psychology, general sociology, cultural anthropology
- College English composition, complete sequence
- Electives to meet the minimum total requirement of 39 quarter units or 26 semester units for the A.S. degree

## Program requirements

### Autumn Quarter

	Units
AHCJ 326 Fundamentals of Health Care	2
AHCJ 328 <sup>1</sup> Wholeness Portfolio I	0
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

### Winter Quarter

AHCJ 328 <sup>1</sup> Wholeness Portfolio I	0
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 321 Cardiac Electrophysiology Clinical Practicum I	1.5

### Spring Quarter

AHCJ 305 Infectious Disease and the Health-Care Provider	1
AHCJ 328 <sup>2</sup> Wholeness Portfolio I	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 322 Cardiac Electrophysiology Clinical Practicum II	1.5

### Summer Quarter

CEPT 323 Cardiac Electrophysiology Clinical Practicum III	2
CEPT 345 Case Studies in Cardiac Electrophysiology	2
CEPT 348 Cardiac Electrophysiology Seminar	3
RELE 457 Christian Ethics and Health Care	2
REL_ 4__ (Religion elective)	2
RTMR 284 Radiation Protection and Biology	2

**Total Units: 63**

<sup>1</sup> Students receive academic credit for this course in the third quarter of registration.

<sup>2</sup> Fulfills service learning requirement

### Normal time to complete the program

Two (2) years – One (1) year (four [4] academic quarters) at LLU, based on full-time enrollment

## Medical Sonography – B.S., Certificate

### Program director

Erin Marshall

### Medical directors

Ramesh C. Bansal

Glenn A. Rouse

### Clinical coordinators

Bridgette Clark

Emily Unterseher

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

The diagnostic ultrasound professional performs patient assessments, acquiring and analyzing data obtained using ultrasound diagnostic technologies. The sonographer provides a summary of findings to the physician to aid in patient diagnosis and management. They utilize 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 American Registry of Diagnostic Medical Sonographers (ARDMS) national boards.

## Professional credentialing

Upon completion of either the Bachelor of Science degree or certificate requirements, the student is eligible to sit for the national board examination of the ARDMS.

All students are required to take and pass the ARDMS Standard Physics and Instrumentation (SPI) Examination before completion of the program.

## 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 prior to beginning the program. CPR classes are available on campus at Life Support Education, University Arts building, 24887 Taylor Street, Suite 102. It is suggested that CPR Certification completion should be done upon acceptance to the program.

## Accreditation

The medical sonography curricula in both general sonography and echocardiography have been accredited since 1985 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. Contact information for CAAHEP is: 254 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763; 727/210-2350; email: caahep@caahep.org.

## Program Requirements

- Diagnostic Medical Sonography – B.S. (p. 125)
- Diagnostic Cardiac Sonography – Certificate (p. 127)

## Diagnostic Medical Sonography – B.S.

**Program director**  
Erin Marshall

**Medical advisors** Ramesh C. Bansal  
Glenn A. Rouse

**Clinical Coordinators** Bridgette Clark  
Danielle Yanez

The Bachelor of Science degree in diagnostic medical sonography has two concentrations. A general and vascular 27-month curriculum (nine academic quarters) leads to eligibility to take the registered vascular technology (RVT) and registered diagnostic medical sonography (RDMS) national ARDMS board examinations. A second concentration in cardiac sonography is offered as a 24-month curriculum (eight academic quarters), also leading to eligibility to take the registered cardiac national boards RDCS. Last, a one-year certificate in cardiac sonography is offered, leading to the same eligibility with ARDMS.

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 to detect the presence of

clots. The cardiac sonographer performs echocardiograms evaluating the heart function, valves, and all cardiac vessels for pathology.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate effective interaction in health care.
2. Demonstrate basic didactic knowledge essential to the practice of medical sonography.
3. Develop and demonstrate professional behaviors and attitudes of an entry-level sonographer.
4. Utilize oral and written communication in various sonography settings.
5. Demonstrate critical thinking, professional judgement, and discretion within the profession.

## Admissions

In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must meet the following requirements:

- A minimum of 102 degree-transferable units for the general/vascular concentration or 96 degree transferable units for the cardiac concentration
- Minimum G.P.A. of 2.5 (3.0 preferred)
- Attend an ultrasound information session prior to observation
- Eight hours of observation in medical sonography (preferably at LLUMC) is required prior to the interview. Observations are scheduled after October and after application to program has been submitted.
- Interview

## Prerequisites

All the following courses must be completed prior to the start of the program. All prerequisites, including general education courses, must be completed at an accredited college or university.

### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

The following courses must be completed within the past five years.

- \*College algebra or higher
- \*Introductory or general physics at the college level (one quarter/semester)
- Complete sequence of anatomy & physiology with laboratory

\* Must be completed within the past five years.

### Domain 4: Social sciences (minimum 12 quarter units)

- Select from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.

- The human diversity requirement is fulfilled in the portfolio core courses: RTCH 491 Portfolio I and RTCH 492 Portfolio II (approved by the University GE Committee).

**Domain 5: Written and oral communication (minimum 9 quarter units)**

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

**Domain 6: Health and wellness (minimum 2 quarter units)**

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

**Other**

- Medical terminology (must be completed within the past five years).

**Electives**

To meet the minimum requirement of 102 quarter units for general/vascular emphasis or 96 quarter units for cardiac emphasis prior to matriculation, electives may be selected from the previous domains. For more information regarding GE requirements for graduation, see LLU general education requirements (p. 26).

**Program requirements**

**General and vascular concentration**

**Junior Year**

**Summer Quarter 1**

		<b>Units</b>
AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
AHCJ 326	Fundamentals of Health Care	2
RTCH 385	Radiologic Trends in Health Care	2
RTCH 491	Portfolio I	3
RELT 406	Adventist Beliefs and Life	3
RTCH 387	Writing for Health-Care Professionals	3

**Autumn Quarter**

RTMS 344	Introduction to Medical Sonography	5
RTMS 371 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Winter Quarter**

RTMS 348	Abdomen/Neurosonography	5
RTMS 372 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Spring Quarter**

RTMS 345	Ob-Gyn Sonography	5
RTMS 373 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Senior Year**

**Summer Quarter 1**

RTCH 489	Effective Communication for Supervisors	3
RTMS 346	Vascular Technology/Doppler/Scan Techniques	5
RTMS 471 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Autumn Quarter**

RTMS 379	Ultrasound Physics and Instrumentation I	2
RTMS 421	Board Review OB-GYN Sonography	1

RELE 456	Personal and Professional Ethics	3
RTMS 472 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Winter Quarter**

RTMS 387	Ultrasound Physics and Instrumentation II	2
RELR 409	Christian Perspectives on Death and Dying	3
RTMS 422	Board Review Abdomen	2
RTMS 473 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Spring Quarter**

RTCH 464	Moral Leadership	3
RTMS 423	Board Review Vascular	1
RTMS 474 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Summer Quarter**

RTCH 492 <sup>2</sup>	Portfolio II	3
RTCH 467	Management of a Radiologic Service	3
RTMS 424	Professionalism in Medical Sonography	1
RTMS 475 <sup>1</sup>	General Vascular Clinical Affiliation	8

**Total Units: 127**

<sup>1</sup> 27 units of affiliation count toward the 192 units required for the degree. The remaining affiliation units are required for licensure and must be completed prior to the awarding of the B.S. degree.

<sup>2</sup> Fulfills service learning requirement

**Cardiac concentration**

**Junior Year**

**Autumn Quarter**

		<b>Units</b>
AHCJ 326	Fundamentals of Health Care	2
CEPT 245	Cardiovascular Anatomy and Physiology	3
CEPT 248	Cardiovascular Patient Assessment	2
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I	2
RTCH 491	Portfolio I	3

**Winter Quarter**

CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II	2
CEPT 271	Cardiology Diseases and Therapeutics I	2
RTCH 387	Writing for Health-Care Professionals	3
RTCH 467	Management of a Radiologic Service	3
RTED 475	Curriculum Development for the Radiation Sciences	3

**Spring Quarter**

AHCJ 305	Infectious Disease and the Health-Care Provider	1
CEPT 272	Cardiology Diseases and Therapeutics II	2
CEPT 285	Cardiology	3
REL_ Religion elective		3
RTCH 464	Moral Leadership	3

**Summer Quarter**

AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
RELE 456	Personal and Professional Ethics	3
RELT 406	Adventist Beliefs and Life	3
RTCH 489	Effective Communication for Supervisors	3

**Senior Year****Autumn Quarter**

RTMS 339	Echocardiography I	4
RTMS 379	Ultrasound Physics and Instrumentation I	2
RTMS 371	General Vascular Clinical Affiliation	8

**Winter Quarter**

RTMS 347	Echocardiography II	4
RTMS 387	Ultrasound Physics and Instrumentation II	2
RTMS 372	General Vascular Clinical Affiliation	8

**Spring Quarter**

RTMS 373	General Vascular Clinical Affiliation	8
RTMS 385	Board Review Echocardiography	2
RTMS 386	Echocardiographic Case Studies Adult and Pediatrics	2

**Summer Quarter**

RTCH 492	Portfolio II	3
RTMS 424	Professionalism in Medical Sonography	1
RTMS 471	General Vascular Clinical Affiliation	8

**Total Units:** 101

<sup>1</sup> 27 units of affiliation count toward the 192 units required for the degree. The remaining affiliation units are required for licensure and must be completed prior to the awarding of the B.S. degree.

<sup>2</sup> Fulfills service learning requirement

**Normal time to complete the program**

Four (4) years – (two [2] years prior to LLU plus two [2] years [24 months for cardiac and 27 months for general and vascular] at LLU) – full-time only

**Diagnostic Cardiac Sonography – Certificate**

The Diagnostic Cardiac Sonography Certificate Program is a 12-month curriculum leading to proficiency in diagnostic imaging of cardiac function and disease processes. Graduates are eligible to take the adult Registered Diagnostic Cardiac Sonography (RDCS) board examination.

**Admissions**

Admission is based on a selective process. In addition to Loma Linda University (p. 23) 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
- Have graduated from an accredited allied health program, including nursing (two years minimum training), licensed vocational nurse, or registered nurse
- Hold an associate degree (science preferred not required)
- Hold a baccalaureate degree (science preferred not required)

**and must have completed credits in the following from an institutionally accredited college or university:**

- \*Human anatomy and physiology with laboratory, complete two-term sequence
- \*College algebra or higher
- \*Medical terminology
- \*Introduction to physics no lab required.
- Patient-care methods (will be completed at LLU after being accepted into the program) OR complete a Certified Nursing Assistant course, approved by the Program Director

\* Must be completed within the past five years.

**Program requirements****Required**

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 424	Professionalism in Medical Sonography	1
RTMS 385	Board Review Echocardiography	2
RTMS 387	Ultrasound Physics and Instrumentation II	2
RTMS 965	Cardiac Ultrasound Clinical Affiliation	8
RTMS 966	Cardiac Ultrasound Clinical Affiliation	8
RTMS 967	Cardiac Ultrasound Clinical Affiliation	10
RTMS 968	Cardiac Ultrasound Clinical Affiliation	10

**Total Units** 53

**Normal time to complete the program**

47 weeks (four [4] academic quarters) – full-time enrollment required

**Medical Radiography – A.S.****Program director**

William J. Edmunds

**Medical advisor**

Alvin L. Hensel

The medical radiographer, or radiologic technologist, is responsible for the accurate imaging of body structures on an 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 digital technologies to archive and transmit the patient's examination images for physician evaluation.

The technologist may also assist the radiologist in specialized radiographic procedures. This 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 coursework at any regionally accredited college or university. The first quarter at Loma Linda University primarily emphasizes the theoretical aspects of radiography, with two days per week at a clinical affiliation beginning week seven. The remaining six quarters combine clinical training on a two-to-five-days-per-week basis, with more advanced classroom topics. The schedule may



involve limited evening assignments. Clinical and classroom involvement in the program is full time (40 hours/week). Students are free on all national holidays and during 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 goals

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

1. Be clinically competent.
2. Provide excellent patient care for a variety of radiologic examinations with respect to the dignity and diversity of all people.
3. Follow radiation protection standards to minimize occupational and public dose.
4. Safely operate all varieties of diagnostic radiography equipment.
5. Become a board-eligible entry-level professional in the field of radiography.
6. Defend the profession's code of ethics and work within the profession's scope of practice.

### Program learning outcomes

By the end of this program, the graduate should be able to:

1. Utilize knowledge needed to complete radiographic examinations of diagnostic quality, while applying proper patient care and radiation protection standards.
2. Integrate effective communication skills into their health-care practice with both patients and colleagues.
3. Employ critical-thinking and problem-solving skills to both prepare for and apply image critique in order to successfully complete radiography exams.
4. Demonstrate professional values, behaviors, and attitudes as an entry-level radiographer.

## Affiliations

For the clinical portion of the program, students are assigned to an affiliated medical center: Loma Linda University Health in Loma Linda, East Campus, Faculty Medical Offices, Murrieta, SACH clinic, and the Surgical Hospital; Hemet Valley Medical Center, Menfee Global, 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 Geronio, White Memorial Medical Center, and St. Mary Regional Medical Center.

## CPR & IV certification

Students are required to have current health-care provider adult, child, and infant cardiopulmonary resuscitation (CPR-BLS) certification for all scheduled clinical experiences. CPR certification must be completed at the American Heart Association health-care provider level. This may be earned 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.

Intravenous (IV) certification will be required with an online course and on-campus lab. Either of these items is the responsibility of the student to finance as part of the program cost.

## 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. Graduates are encouraged to become members of the California Society of Radiologic Technologists and the American Society of Radiologic Technologists for professional growth and continuing education in their professional discipline.

## Accreditation

The Medical Radiography 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 competitive, selective process. In addition to Loma Linda University (p. 23) 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.
- A minimum of 42 quarter units (or 28 semester units) at an accredited college or university.
- Observation experience—A minimum of eight hours of career observation in a radiology department is required. Contact the department to obtain the appropriate form.
- Online application, three references, an essay, and transcripts from all schools attended including high school. The essay should include: why you are choosing LLU, your process for selecting this profession, what makes you a good candidate, and anything else that helps us get to know you. Contact the department for more information.
- A prerequisite GPA of 2.5 minimum; however, a competitive GPA of 3.1 or higher is preferred.

## Prerequisites

- Human anatomy and physiology, complete sequence of two courses minimum, with a lab for each course
- Medical terminology
- Introductory or general physics at the college level (one quarter/semester)
- General psychology or general sociology
- English composition, complete sequence
- Interpersonal communication, oral communication, or public speaking
- Electives to meet the minimum total requirement of 42 quarter units (such as: cultural anthropology, nutrition, health, life span development, Spanish, or computer science)

## Program Requirements

### Sophomore

#### Autumn Quarter

AHCJ 326	Fundamentals of Health Care	2
AHCJ 328	Wholeness Portfolio I	0
RTMR 202	Clinical Orientation	3
RTMR 224	Legal Issues in Medical Radiography	1
RTMR 246	Professional Communication & Presentation	2
RTMR 253	Medical Radiography Procedures I	3
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	3
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 <sup>1</sup>	Wholeness Portfolio I	1
RELT 423	Loma Linda Perspectives	2
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 372	Medical Radiography Affiliation II	7

#### Clinical Year

##### Summer Quarter

RTMR 373	Medical Radiography Affiliation III	12
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##### Autumn Quarter

REL 275	Whole Person Care	2
RTMR 305	Introduction to Computed Tomography I	2
RTMR 325	Radiologic Pathology	1
RTMR 374	Medical Radiography Affiliation IV	10

##### Winter Quarter

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

##### Spring Quarter

RTMR 344	Professional Development and Service Learning	3
RTMR 365	Comprehensive Review II	2
RTMR 386	Medical Radiography Affiliation VI	10

**Total Units:** 104

<sup>1</sup> Fulfills service learning requirement.

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 each quarter in the program.

## Normal time to complete the program

Three (3) years – two (2) years (seven [7] academic quarters) at LLU – full-time enrollment required

## Nuclear Medicine Technology – B.S.

### Program director

Raynold Ho

## 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 radio-pharmaceuticals; 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.

The Bachelor of Science degree with a major in nuclear medicine is a face-to-face program and is completed in 24 to 27 months. In addition to radiation sciences core courses, this program will include CT didactic courses. With the addition of the B.S. degree core, there are now 27 units taught online (less than 25 percent of the program). These courses are given by faculty members experienced in online teaching. Students will interact with the faculty, their classmates, and the content material.

Content for nuclear medicine courses is guided by the Society of Nuclear Medicine and Molecular Imaging (SNMMI), the Nuclear Medicine Technology Certification Board (NMTCB), and the American Registry of Radiation Technologists (ARRT) content specifications. The content for the computed tomography (CT) courses is guided by the American Society of Radiation Technologists (ASRT), as well as the American Registry of Radiation Technologists (ARRT) specifications. Efforts are also made to assist students in experiencing the core values of Loma Linda University. The state of California requires approximately 1,000 clinical hours in nuclear medicine; this program provides more than 1,550 clinical hours in nuclear medicine and more than 250 clinical hours in CT procedures and patient care.

## Objectives

During the B.S. degree in nuclear medicine technology program, students take formal coursework 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.

Students are required to follow the guidelines given by the NMTCB and the ARRT as well as meet required competencies each quarter. Students should accomplish the required competencies in the following areas: skeletal, CNS, cardiovascular, endocrine/exocrine, gastrointestinal, genitourinary, respiratory, radiopharmacy, venipuncture, vital signs, and EKG placement and monitoring. Students will receive more than 1,550 hours of nuclear medicine and 250 hours of CT clinical experience.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate the knowledge, skills, and responsibilities necessary for the practice of nuclear medicine.
2. Practice safe, compassionate patient care, including appreciation and respect for cultural diversity.
3. Demonstrate appropriate critical-thinking, problem-solving, and decision-making skills in nuclear medicine.
4. Maintain and apply competent skills and knowledge by interacting with fellow professionals, attending educational conferences, and staying current with changing technology.
5. Apply knowledge of departmental organization and function.
6. Apply quantitative reasoning to the practice of nuclear medicine.
7. Achieve required clinical competencies for nuclear medicine.

## Professional registration and certification

Upon completion of the certificate requirements, the student is eligible to write the ARRT qualifying examination in nuclear medicine as well as the NMTCB and California (CTNM) certifying examination.

## Accreditation

The Nuclear Medicine Technology Program is accredited by the Joint Review Committee on Nuclear Medicine Technology (JRCNMT), 840 West Danforth Road, B1, Edmond, OK 73003; telephone: 405/285-0546; website: [www.jrcnmt.org](http://www.jrcnmt.org) (<http://www.jrcnmt.org/>). 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 also accredited by the WASC Senior College and University Commission (WSCUC), 985 Atlantic Avenue, Suite 100, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <https://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

## Admissions

To be eligible for admission to the nuclear medicine program, the applicant must fulfill the following requirements: complete the prerequisite requirements, or be a graduate of an accredited radiologic technology program who has completed the prerequisite requirements in conjunction with that program.

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- 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 eight 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](http://www.llu.edu) (<http://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 adult and child CPR card from the American Heart Association. Classes are available on campus at Life Support

Education, University Arts building, 24887 Taylor Street, Suite 102. It is highly suggested that the student obtain the CPR certification prior to the start of the Nuclear Medicine Program.

## Prerequisites

Prerequisites are listed as they relate to general education domains. All courses must be completed at an institutionally accredited college or university prior to entering the program. Please note: C- grades are not transferable for credit.

### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- College algebra (statistics does not qualify)
- Introduction or general chemistry with laboratory
- Human anatomy and physiology with laboratory, complete sequence (two course minimum)
- Introductory or general physics at the college level (one quarter/semester)

### Domain 4: Social sciences (minimum 12 quarter units)

- Selected from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- The human diversity requirement is fulfilled in the portfolio core courses: RTCH 491 Portfolio I and RTCH 492 Portfolio II (approved by the University GE Committee).

### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university
- Other areas of study in communication may include courses in computer information systems, critical thinking, and public speaking.

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

## Other

- Medical terminology

## Electives

To meet the minimum requirement of 96 units quarter units required for matriculation, electives may be selected from the previous four domains. For more information regarding GE requirements for graduation, see LLU general education requirements (p. 26).

## Program requirements

### ARRT certified students

#### First Year

##### Autumn Quarter

RELE 456	Personal and Professional Ethics	3
RTCH 318	Imaging Modalities	2
RTCH 464	Moral Leadership	3
RTCH 491	Portfolio I	3
RTNM 351	Principles of Nuclear Medicine I	4
RTNM 351L	Principles of Nuclear Medicine I Laboratory	1

##### Winter Quarter

RTCH 387	Writing for Health-Care Professionals	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 364	Nuclear Medicine Statistics	3
RTNM 430	Clinical Affiliation Introduction	1

##### Spring Quarter

RTNM 354	Nuclear Medicine Procedures II	2
RTNM 354L	Nuclear Medicine Procedures II Laboratory	1
RTNM 357	Instrumentation I	4
RTNM 357L	Instrumentation I Laboratory	1
RTNM 361	Radiopharmacy I	3
RTNM 431	Clinical Affiliation I	2

#### Second Year

##### Summer Quarter

AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
RTCH 305	CT Fundamentals	2
RTNM 358	Instrumentation II	4
RTNM 358L	Instrumentation II Laboratory	1
RTNM 362	Radiopharmacy II	3
RTNM 432	Clinical Affiliation II	3

##### Autumn Quarter

RELR 409	Christian Perspectives on Death and Dying	3
RTCH 385	Radiologic Trends in Health Care	2
RTNM 363	Nuclear Cardiology	3
RTNM 433	Clinical Affiliation III	4
RTSI 367 <sup>2</sup>	Cross-sectional Radiographic Anatomy	2
RTSI 369 <sup>2</sup>	CT Physics	2

##### Winter Quarter

RELT 436	Adventist Heritage and Health	2
RTCH 489	Effective Communication for Supervisors	3
RTNM 355	PET/CT	2
RTNM 366	Medical Informatics	1
RTNM 434	Clinical Affiliation IV	4
RTSI 364 <sup>2</sup>	CT Patient Care and Procedures	2

##### Spring Quarter

RTCH 415	Radiation Emergency Procedures	3
RTCH 485	Digital Management in Radiology	3

RTNM 421	Comprehensive Review of Nuclear Medicine I	3
RTNM 435	Clinical Affiliation V	4

#### Third Year

##### Summer Quarter

RTCH 467	Management of a Radiologic Service	3
RTCH 492 <sup>1</sup>	Portfolio II	3
RTNM 422	Comprehensive Review of Nuclear Medicine II	3
RTNM 436	Clinical Affiliation VI	4

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**Total Units: 116**

<sup>1</sup> Fulfills service learning requirement

<sup>2</sup> Waived for prior CT certification and/or graduates of LLU's ASMR program.

### Non-ARRT certified students

#### First Year

##### Summer Quarter

		Units
AHCJ 326	Fundamentals of Health Care	2
RTCH 284	Basic Imaging	3
RTCH 284L	Radiation Clinical Basics Laboratory	1
RTCH 285	The Principles and Physics of Radiation	4
RTMR 224	Legal Issues in Medical Radiography	1
RTMR 284	Radiation Protection and Biology	2

##### Autumn Quarter

RELE 456	Personal and Professional Ethics	3
RTCH 318	Imaging Modalities	2
RTCH 464	Moral Leadership	3
RTCH 491	Portfolio I	3
RTNM 351	Principles of Nuclear Medicine I	4
RTNM 351L	Principles of Nuclear Medicine I Laboratory	1

##### Winter Quarter

RTCH 387	Writing for Health-Care Professionals	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 364	Nuclear Medicine Statistics	3
RTNM 430	Clinical Affiliation Introduction	1

##### Spring Quarter

RTNM 354	Nuclear Medicine Procedures II	2
RTNM 354L	Nuclear Medicine Procedures II Laboratory	1
RTNM 357	Instrumentation I	4
RTNM 357L	Instrumentation I Laboratory	1
RTNM 361	Radiopharmacy I	3
RTNM 431	Clinical Affiliation I	2

#### Second Year

##### Summer Quarter

AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
RTCH 305	CT Fundamentals	2
RTNM 358	Instrumentation II	4
RTNM 358L	Instrumentation II Laboratory	1

RTNM 362	Radiopharmacy II	3
RTNM 432	Clinical Affiliation II	3
<b>Autumn Quarter</b>		
RELR 409	Christian Perspectives on Death and Dying	3
RTCH 385	Radiologic Trends in Health Care	2
RTNM 363	Nuclear Cardiology	3
RTNM 433	Clinical Affiliation III	4
RTSI 367 <sup>1</sup>	Cross-sectional Radiographic Anatomy	2
RTSI 369	CT Physics	2
<b>Winter Quarter</b>		
RELT 436	Adventist Heritage and Health	2
RTCH 489	Effective Communication for Supervisors	3
RTNM 355	PET/CT	2
RTNM 366	Medical Informatics	1
RTNM 434	Clinical Affiliation IV	4
RTSI 364	CT Patient Care and Procedures	2
<b>Spring Quarter</b>		
RTCH 415	Radiation Emergency Procedures	3
RTCH 485	Digital Management in Radiology	3
RTNM 421	Comprehensive Review of Nuclear Medicine I	3
RTNM 435	Clinical Affiliation V	4
<b>Third Year</b>		
<b>Summer Quarter</b>		
RTCH 467	Management of a Radiologic Service	3
RTCH 492 <sup>1</sup>	Portfolio II	3
RTNM 422	Comprehensive Review of Nuclear Medicine II	3
RTNM 436	Clinical Affiliation VI	4
<b>Total Units:</b>		<b>129</b>

<sup>1</sup> Fulfills service learning requirement

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

### Normal time to complete the program

Four (4) years – Based on full-time enrollment, a student who is a radiologic technologist (ARRT) completes the LLU portion of the program in eight (8) quarters (24 months). A student who is not a radiologic technologist (Non-ARRT) starts one quarter earlier and will complete in nine (9) quarters (27 months).

### Comparison

See the comparison (p. 133) 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

	Course Title	ARRT Certified	Non-ARRT Certified
<b>First Year: Summer Quarter</b>			
AHCJ 326	Fundamentals of Health Care		2.0
RTCH 284	Basic Imaging		3.0
RTCH 284L	Radiation Clinical Basics Laboratory		1.0
RTCH 285	The Principles and Physics of Radiation		4.0
RTMR 224	Legal Issues in Medical Radiography		1.0
RTMR 284	Radiation Protection and Biology		2.0
<b>Totals</b>			<b>13.0</b>
	Course Title	ARRT Certified	Non-ARRT Certified
<b>First Year: Autumn Quarter</b>			
RELE 456	Personal and Professional Ethics	3.0	3.0
RTCH 318	Imaging Modalities	2.0	2.0
RTCH 464	Moral Leadership	3.0	3.0
RTCH 491	Portfolio I	3.0	3.0
RTNM 351	Principles of Nuclear Medicine I	4.0	4.0
RTNM 351L	Principles of Nuclear Medicine I Laboratory	1.0	1.0
<b>Totals</b>		<b>16.0</b>	<b>16.0</b>
	Course Title	ARRT Certified	Non-ARRT Certified
<b>First Year: Winter Quarter</b>			
RTCH 387	Writing for Health-Care Professionals	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 364	Nuclear Medicine Statistics	3.0	3.0
RTNM 430	Clinical Affiliation Introduction	1.0	1.0
<b>Totals</b>		<b>15.0</b>	<b>15.0</b>
	Course Title	ARRT Certified	Non-ARRT Certified
<b>First Year: Spring Quarter</b>			
RTNM 354	Nuclear Medicine Procedures II	2.0	2.0
RTNM 354L	Nuclear Medicine Procedures II Laboratory	1.0	1.0
RTNM 357	Instrumentation I	4.0	4.0
RTNM 357L	Instrumentation I Laboratory	1.0	1.0
RTNM 361	Radiopharmacy I	3.0	3.0
RTNM 431	Clinical Affiliation I	2.0	2.0
<b>Totals</b>		<b>13.0</b>	<b>13.0</b>
	Course Title	ARRT Certified	Non-ARRT Certified
<b>Second Year: Summer Quarter</b>			
AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3.0	3.0
RTCH 305	CT Fundamentals	2.0	2.0
RTNM 358	Instrumentation II	4.0	4.0
RTNM 358L	Instrumentation II Laboratory	1.0	1.0
RTNM 362	Radiopharmacy II	3.0	3.0
RTNM 432	Clinical Affiliation II	3.0	3.0
<b>Totals</b>		<b>16.0</b>	<b>16.0</b>
	Course Title	ARRT Certified	Non-ARRT Certified
<b>Second Year: Autumn Quarter</b>			
RELR 409	Christian Perspectives on Death and Dying	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	4.0	4.0
RTSI 367	Cross-sectional Radiographic Anatomy	2.0	2.0
RTSI 369	CT Physics	2.0	2.0
<b>Totals</b>		<b>16.0</b>	<b>16.0</b>
<b>Second Year: Winter Quarter</b>			
RELT 436	Adventist Heritage and Health	2.0	2.0
RTCH 489	Effective Communication for Supervisors	3.0	3.0
RTNM 355	PET/CT	2.0	2.0
RTNM 366	Medical Informatics	1.0	1.0
RTNM 434	Clinical Affiliation IV	4.0	4.0
RTSI 364	CT Patient Care and Procedures	2.0	2.0
<b>Totals</b>		<b>14.0</b>	<b>14.0</b>
<b>Second Year: Spring Quarter</b>			
RTCH 415	Radiation Emergency Procedures	3.0	3.0
RTCH 485	Digital Management in Radiology	3.0	3.0
RTNM 421	Comprehensive Review of Nuclear Medicine I	3.0	3.0
RTNM 435	Clinical Affiliation V	4.0	4.0
<b>Totals</b>		<b>13.0</b>	<b>13.0</b>
<b>Third Year: Summer Quarter</b>			
RTCH 467	Management of a Radiologic Service	3.0	3.0
RTCH 492	Portfolio II	3.0	3.0
RTNM 422	Comprehensive Review of Nuclear Medicine II	3.0	3.0
RTNM 436	Clinical Affiliation VI	4.0	4.0
<b>Totals</b>		<b>13.0</b>	<b>13.0</b>
<b>Overall Totals</b>		<b>116.0</b>	<b>129.0</b>

## Radiation Sciences – B.S.

### Program directors

Will Edmunds, Entry-level  
Timothy Seavey, Postprofessional

### The program

Two tracks lead to the Bachelor of Science degree in radiation sciences:

1. The entry-level track (p. 135) is a three-year program designed to prepare 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.
2. The postprofessional track (p. 139) provides imaging professionals with the foundational education necessary for potential advancement into career possibilities that include advanced imaging modalities.

Both tracks prepare students for graduate degrees and/or professional advancement into entry management, education in imaging, and imaging informatics positions.

Students have the ability to customize their degree by choosing an area of emphasis for their studies. Emphases include: administration

and education, imaging informatics (PACS administration), science (professional only), and advanced imaging modalities (computed tomography, magnetic resonance imaging, cardiac and/ or vascular imaging). Loma Linda University and the Department of Radiation Technology cannot guarantee employment.

### CPR and IV certification

Students attending any clinical affiliation are required to have current health-care provider adult, child, and infant cardiopulmonary resuscitation (CPR-BLS) certification for all scheduled clinical experiences. CPR certification must be completed at the American Heart Association health-care provider level. This may be earned 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.

Intravenous (IV) certification will be provided with an online course and on-campus lab for entry-level students and those in emphases requiring IV training.

Either of these items is the responsibility of the student to finance as part of the program cost.

## Clinical affiliations

For the clinical portion of the program, students are assigned to an affiliated medical center: Loma Linda University Health in Loma Linda, East Campus, Faculty Medical Offices, Murrieta, SACH clinic, and the Surgical Hospital; Hemet Valley Medical Center, Menifee Global, 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 Geronio, White Memorial Medical Center, and St. Mary Regional Medical Center.

## Accreditation

Loma Linda University is accredited by the WASC Senior College and University Commission (WSCUC), 1001 Marina Village Parkway, Suite 402, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

The Radiation Sciences B.S. Entry Level 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.

## Program requirements

Radiation sciences – B.S. (Entry Level) (p. 135), B.S. (Postprofessional) (p. 139)

## Radiation Sciences – B.S. (Entry Level)

### Program directors

Will Edmunds  
Timothy Seavey

### Medical Advisor

Alvin L. Hensel

The medical radiographer, or radiologic technologist, is responsible for the accurate imaging of body structures on an 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 digital technologies to archive and transmit the patient's examination images for physician evaluation.

The technologist may also assist the radiologist in specialized radiographic procedures. This 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 entry-level Radiation Sciences B.S. Program begins with the Autumn Quarter and is based on the completion of one year of prerequisite coursework at any institutionally accredited college or university. The first two years at Loma Linda University primarily emphasizes the core

aspects of medical imaging (radiography), beginning with two days per week at a clinical affiliation beginning the third week of the program. The remaining six quarters combine clinical training on a two-to-three-days-per-week basis, with more advanced classroom topics.

The third year of the program allows students to select an area of emphasis in CT, MRI, Administration and Education, Imaging Informatics, Mammography and MRI, Cardiac Imaging, Vascular Imaging, or Advanced Imaging.

The schedule may involve limited evening assignments. Clinical and classroom involvement in the program is full time (40 hours/week). Students are free on all national holidays and during quarter breaks.

The baccalaureate degree comprises a minimum of 192 quarter units in the following:

- Loma Linda University general education (GE) requirements.
- Radiation sciences professional and core courses.
- Area of emphasis
- E-Portfolio that comprises academic and professional work, a capstone project, and service learning.

## Program goals

1. Demonstrate clinical competence in medial radiography.
2. Demonstrate the values and attitudes of an entry-level radiographer.
3. Apply concepts from institutional learning outcomes (includes critical thinking, written communication, and Oral communication).
4. Investigate concepts of managers and educators who contribute to the imaging disciplines through service and leadership.
5. Discuss leaders who advocate for excellence in patient care.
6. Integrate concepts from chosen area of emphasis.

## Program learning outcomes

In addition to the stated institutional learning outcomes (p. 19), by the end of this program, the graduate should be able to:

By the end of the program, the graduate should be able to:

1. Produce radiographic exams of diagnostic quality.
2. Apply patient care and practices for radiographic procedures.
3. Construct a plan for professional development.
4. Examine the core values and reflect on personal application.
5. Demonstrate moral leadership.
6. Incorporate moral leadership and management skills in a health-care setting.
7. Utilize meaningful communication skills in the health-care context.
8. Actively engage in meaningful reciprocal community service.
9. Apply emotional and social intelligence theories to health-care organizational, management, and leadership problems.
10. Demonstrate competency in clinical and didactic elements of chosen emphasis.

## Professional registration and certification

Upon completion of the requirements for the Radiation Science, BS degree, the graduate is eligible to write the qualifying examination of The American Registry of Radiologic Technologists (ARRT) in Radiography (R). 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 and the American Society of Radiologic Technologists for professional growth and continuing education in their professional discipline.

Graduates completing advanced modalities in their emphasis are eligible for ARRT examinations in CT, MRI, M, CI, and/or VI.

## Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must meet the following requirements:

- High school completion from an accredited institution, or passed the GED.
- A minimum of 45 quarter units (or 30 semester units) at an accredited college or university.
- Observation experience—A minimum of eight hours of career observation in a radiology department is required. Contact the department to obtain the appropriate form.
- Online application—the essay section should include why you are choosing LLU, your process for selecting this profession, what makes you a good candidate, and anything else that helps us get to know you. Contact the department for more information.
- A prerequisite GPA of 2.5 minimum; however, a competitive GPA of 3.0 or higher is preferred.

## Prerequisites and corequisites

Courses are listed as they relate to general education domains. Courses preceded by an asterisk (\*) are required for admission to the program. Remaining general education courses are taken at LLU within the program. Elective credits taken to meet the minimum 45 units required before matriculation may be selected from the following domains.

### Domain 1: Religion (12 quarter units)

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- \*Human anatomy and physiology with laboratory, complete sequence (two course minimum)
- \*Introductory or general physics at the college level (one quarter/semester)

### Domain 4: Social sciences (minimum 12 quarter units)

- Select from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- The human diversity requirement is fulfilled in the portfolio core courses: RTCH 491 Portfolio I and RTCH 492 Portfolio II (approved by the University GE Committee).

### Domain 5: Written and oral communication (minimum 9 quarter units)

- \*English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university

- \*Interpersonal communication, oral communication, or public speaking
- Additional courses may include information systems, critical thinking

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

### Other

\*Medical terminology

## Program requirements

### Sophomore

#### Autumn Quarter

AHCJ 326	Fundamentals of Health Care	2
RTCH 250	Clinical Orientation, Legal, & Professional Standards	3
RTMR 253	Medical Radiography Procedures I	3
RTMR 253L	Medical Radiography Procedures Laboratory I	1
RTMR 285	Principles of Radiography I	3
PSYC 101 <sup>4</sup>	Introduction to Psychology	4

#### Winter Quarter

RTCH 371	Radiography Clinical Affiliation I	2
RTMR 221	Radiologic Patient Care	2
RTMR 254	Medical Radiography Procedures II	3
RTMR 254L	Medical Radiography Procedures Laboratory II	1
RTMR 284	Radiation Protection and Biology	2
RTMR 286	Principles of Radiography II	3
SPAN 101 or humanities elective		

#### Spring Quarter

ANTH 315 <sup>4</sup>	Cultural Anthropology	4
RTCH 372	Radiography Clinical Affiliation II	3
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
REL_ 4__	Religion course <sup>1</sup>	3

### Junior Year

#### Summer Quarter

PSYC 226 <sup>4</sup>	Life-Span Development	4
RTCH 373	Radiography Clinical Affiliation III	3
RTCH 387	Writing for Health-Care Professionals	3
RTCH 467	Management of a Radiologic Service	3
RTCH 491	Portfolio I	3

#### Autumn Quarter

AHCJ 225 <sup>3</sup>	History of Radiation and Imaging 1890-1940	3
RTCH 324	Introduction to CT and Imaging Modalities	3
RTCH 374	Radiography Clinical Affiliation IV	3
RTCH 464	Moral Leadership	3
RTMR 325	Radiologic Pathology	1
REL_ 4__	Religion course <sup>1</sup>	3

**Winter Quarter**

AHCJ 226 <sup>3</sup>	History of Radiation and Imaging 1940-Present Day	3
AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
REL_ 4__	Religion course <sup>1</sup>	3
RTCH 375	Radiography Clinical Affiliation V	3
RTCH 489	Effective Communication for Supervisors	3
RTSI 367	Cross-sectional Radiographic Anatomy	2

**Spring Quarter**

AHRM 475	Health-Care Research and Statistics	4
RTCH 376	Radiography Clinical Affiliation VI	3
RTCH 385	Radiologic Trends in Health Care	2
RTCH 485	Digital Management in Radiology	3

**Senior Year****Summer Quarter**

RTCH 377	Radiography Clinical Affiliation VII	1
REL_ 4__	Religion course <sup>1</sup>	3
RTCH 485	Digital Management in Radiology	3
Area of emphasis coursework (selected from below)		6-7
Emphasis affiliation course (selected from area of emphasis below)		3

**Autumn Quarter**

DTCS 301 <sup>5</sup>	Human Nutrition	3
PEAC 110	Independent Activities	1
RTCH 378	Radiography Clinical Affiliation VIII	1
RTCH 492 <sup>2</sup>	Portfolio II	3
Area of emphasis coursework		6-8
Emphasis affiliation course		3

**Winter Quarter**

RTCH 380	Radiography Clinical Affiliation X	1
RTMR 363	Comprehensive Review I	2
Area of emphasis coursework selected from below		6-8
Emphasis affiliation course		3

**Spring Quarter**

PEAC 110	Independent Activities	1
RTCH 327	Professional Development	1
RTCH 380	Radiography Clinical Affiliation X	1
RTMR 365	Comprehensive Review II	2
Area of emphasis coursework selected from below		5-7
Emphasis affiliation course		3

**Total Units: 169-172**

<sup>1</sup> One religion course must be selected from the following: RELT 406 Adventist Beliefs and Life, RELT 423 Loma Linda Perspectives, RELT 436 Adventist Heritage and Health, or RELT 437 Current Issues in Adventism.

<sup>2</sup> Fulfills service learning requirement.

<sup>3</sup> May substitute with another humanities course.

<sup>4</sup> May substitute for another social science course.

<sup>5</sup> May substitute for another health course.

**Area of emphasis: administration and education**

HCBL 434	Financial Management for Health Care	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RTCH 414	Practicum in Radiation Sciences	3
RTCH 450	Advanced Radiography Clinical Affiliation (3)	12
RTED 475	Curriculum Development for the Radiation Sciences	3
RTED 476	Adult Learning Theory for the Radiation Science Student	3
RTED 477	Learning Activities and Assessment for the Radiation Sciences	3
RTSI 344	Pharmacology for Imaging Professionals	4

**Total Units 37**

**Area of emphasis: advanced medical imaging**

AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RTCH 450	Advanced Radiography Clinical Affiliation (3)	12
RTCH 487	Advanced Radiography Procedures in Trauma	2
RTCH 488	Advanced Radiography Procedures in Orthopedics and Pediatrics	3
RTII 354	Introduction to Informatics	3
RTSI 344	Pharmacology for Imaging Professionals	4

**Total Units 37**

**Area of emphasis: cardiac imaging**

AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
CEPT 245	Cardiovascular Anatomy and Physiology	3
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I	2
CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II	2
RTCH 456	Cardiac Interventional Clinical Affiliation (3)	12
RTCH 487	Advanced Radiography Procedures in Trauma	2
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 345	Cardiac/Interventional Procedures	3
RTSI 360	Cardiac Imaging Review	1

**Total Units 36**

**Area of emphasis: imaging informatics**

HLIN 430	Quality Management and Performance Improvement in Health Care	3
RTCH 450	Advanced Radiography Clinical Affiliation (3)	12
RTED 475	Curriculum Development for the Radiation Sciences	3
RTII 354	Introduction to Informatics	3
RTII 356	Information Technology in Radiology	3
RTII 358	PACS Planning and Implementation	3
RTII 378	Systems Management in Informatics	3



RTII 384	Advanced Imaging Informatics	1
RTII 386	Certification Exam Review	2
RTSI 344	Pharmacology for Imaging Professionals	4
<b>Total Units</b>		<b>37</b>

**Area of emphasis: mammography with MRI**

HCBL 346	Legal and Ethical Environment in Health Care	3
RTCH 455	Magnetic Resonance Imaging Clinical Affiliation (3)	6
RTCH 458	Mammography Clinical Affiliation (3)	6
or RTCH 450	Advanced Radiography Clinical Affiliation	
RTCH 480	Mammography Principles and Procedures	3
RTCH 484	Mammography Certification Review	1
RTCH 486	Fundamentals of Breast Ultrasound	3
RTCH 488	Advanced Radiography Procedures in Orthopedics and Pediatrics	3
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 361	MRI Physics I	2
RTSI 362	MRI Physics II	2
RTSI 365	MRI Patient Care and Procedures	2
RTSI 456	MRI Certification Review	1
<b>Total Units</b>		<b>36</b>

**Area of emphasis: special imaging CT/MRI**

HCBL 346	Legal and Ethical Environment in Health Care	3
RTCH 488	Advanced Radiography Procedures in Orthopedics and Pediatrics	3
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 456	MRI Certification Review	1
RTSI 457	CT Certification Review	1
RTSI 361	MRI Physics I	2
RTSI 362	MRI Physics II	2
RTSI 364	CT Patient Care and Procedures	2
RTSI 365	MRI Patient Care and Procedures	2
RTSI 369	CT Physics	2
RTCH 454	Computed Tomography Clinical Affiliation (3)	6
RTCH 455	Magnetic Resonance Imaging Clinical Affiliation (3)	6
<b>Total Units</b>		<b>34</b>

**Area of emphasis: special imaging CT**

AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RTCH 454	Computed Tomography Clinical Affiliation (3)	6
RTCH 454	Computed Tomography Clinical Affiliation (3)	6
or RTCH 450	Advanced Radiography Clinical Affiliation	
RTCH 488	Advanced Radiography Procedures in Orthopedics and Pediatrics	3
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 457	CT Certification Review	1
RTSI 364	CT Patient Care and Procedures	2

RTSI 369	CT Physics	2
<b>Total Units</b>		<b>37</b>

**Area of emphasis: special imaging MRI**

AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 456	MRI Certification Review	1
RTSI 361	MRI Physics I	2
RTSI 362	MRI Physics II	2
RTSI 365	MRI Patient Care and Procedures	2
RTCH 455	Magnetic Resonance Imaging Clinical Affiliation (3)	6
RTCH 455	Magnetic Resonance Imaging Clinical Affiliation (3)	6
or RTCH 450	Advanced Radiography Clinical Affiliation	
<b>Total Units</b>		<b>36</b>

**Area of emphasis: vascular imaging**

AHCJ 402	Pathology I	4
AHCJ 403	Pathology II	3
RTCH 457	Vascular Interventional Clinical Affiliation (3)	12
RTCH 488	Advanced Radiography Procedures in Orthopedics and Pediatrics	3
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 351	Angio/Interventional Procedures I	3
RTSI 352	Angio/Interventional Procedures II	3
RTSI 356	Vascular Anatomy and Physiology	3
RTSI 359	Vascular Imaging Review	1
<b>Total Units</b>		<b>36</b>

Certain aspects of the curriculum require individual scheduling. Time arrangements may be subject to change. Entrance to the clinical year is contingent upon completion of all prior requirements.

A minimum G.P.A. of 2.5 is required for each quarter in the program.

**Normal time to complete the program**

Four (4) years – three (3) years (eleven [11] academic quarters) at LLU – full-time enrollment required

# Radiation Sciences – B.S. (Postprofessional)

## Program director

Tim Seavey

The postprofessional baccalaureate degree comprises a minimum of 192 quarter units in the following:

- Loma Linda University general education (GE) requirements.
- Professional certification in an imaging modality (entry-level imaging degree).
- Radiation science core requirements.\*
- Area of emphasis: administration and education,\* imaging informatics,\* advanced imaging modalities, or science.\*
- E-portfolio that comprises academic and professional work, a capstone project, and service learning.

### \*Online

Electives to meet the needs of individual students are selected from existing courses after consultation with the program director.

## Program objectives

1. To graduate managers and educators who contribute to the imaging disciplines through service and leadership.
2. To graduate leaders who advocate for excellence in patient care.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Develop meaningful interactions in health care.
2. Demonstrate moral leadership.
3. Discuss health-care advancement and sustainability.
4. Apply emotional intelligence and leadership skills.
5. Integrate concepts from chosen area of emphasis.

## Admissions

Applications are accepted year-round and applicants may enter the B.S. degree program at the start of any quarter. Contact the program director for advisement. Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must meet the following requirements:

- an associate degree or a minimum of 72-96 degree transferable units per program director approval;
- be a graduate of an approved program in radiologic technology, computed tomography, magnetic resonance imaging, radiation therapy, nuclear medicine, cardiac and/ or vascular imaging, or sonography (ultrasound);
- have a certification from the American Registry of Radiologic Technologists (ARRT) (R,N,T), American Registry for Diagnostic Medical Sonography (AB, BR, FE, OB/GYN, PS, AE, PT, and /or VT), or an equivalent specialty credential (NMTCB).

Applicants who are eligible to take the ARRT, NMTCB or ARDMS specialty examination for certification/credential but who have not had the opportunity to do so are given provisional status for one quarter.

Eligibility to continue is subject to the student 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 didactic units from an accredited community college will be accepted as transfer credit. Students who have completed a program with the same programmatic accreditation as LLU's program, are allowed up to 50 junior college-level quarter units of academic credit on the basis of their registry license. Students should be 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. For a complete listing of general education requirements, see LLU General Education Requirements (p. 27). Following is a list of specific requirements and the general education domain to which they apply:

### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- Statistics (taken during the program).
- Additional units must be selected from two of the following content areas: biology, chemistry, geology, mathematics, and physics; and one course must include a lab component.

### Domain 4: Social sciences (minimum 12 quarter units)

- Select from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- The human diversity requirement is fulfilled in the portfolio core courses: RTCH 491 Portfolio I and RTCH 492 Portfolio II (approved by the University GE Committee).

### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

## Electives

To meet the minimum requirement of 72-96 quarter units required for matriculation, electives may be selected from the previous four domains. For more information regarding GE requirements for graduation, see LLU general education requirements (p. 26)

## Program requirements

### Core (30 units) <sup>1</sup>

AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
AHRM 475	Health-Care Research and Statistics	4
RTCH 385	Radiologic Trends in Health Care	2
RTCH 387	Writing for Health-Care Professionals	3
RTCH 464	Moral Leadership	3
RTCH 467	Management of a Radiologic Service	3
RTCH 485	Digital Management in Radiology	3
RTCH 489	Effective Communication for Supervisors	3
RTCH 491	Portfolio I	3
RTCH 492	Portfolio II <sup>4</sup>	3

### Religion (9 units)

RELT 406	Adventist Beliefs and Life	3
RELE 456	Personal and Professional Ethics	3
RELR 409	Christian Perspectives on Death and Dying	3

**Area of emphasis** <sup>2</sup> **12-24**

**Electives** <sup>3</sup> **0-34**

**Total Units** **97**

<sup>1</sup> Core courses are online.

<sup>2</sup> Area of Emphasis selected from options listed below.

<sup>3</sup> Remaining units required for the B.S. program can be obtained from remaining emphases and other available courses offered at Loma Linda University.

<sup>4</sup> Fulfills service learning agreement

### Area of emphasis: administration and education

RTED 475	Curriculum Development for the Radiation Sciences	3
RTED 476	Adult Learning Theory for the Radiation Science Student	3
RTED 477	Learning Activities and Assessment for the Radiation Sciences	3
RTII 354	Introduction to Informatics	3
HCBL 434	Financial Management for Health Care	3
HCBL 346	Legal and Ethical Environment in Health Care	3
HLIN 430	Quality Management and Performance Improvement in Health Care	3
RTCH 414	Practicum in Radiation Sciences	3

**Total Units** **24**

### Area of emphasis: imaging informatics

RTII 354	Introduction to Informatics	3
RTED 475	Curriculum Development for the Radiation Sciences	3
RTII 356	Information Technology in Radiology	3
RTII 358	PACS Planning and Implementation	3
RTII 378	Systems Management in Informatics	3
HCBL 346	Legal and Ethical Environment in Health Care	3
RTII 384	Advanced Imaging Informatics	1
RTII 386	Certification Exam Review	2

HLIN 430	Quality Management and Performance Improvement in Health Care	3
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**Total Units** **24**

### Area of emphasis: cardiovascular imaging (CVI)

Students may select CI, VI, or both.

AHCJ 402	Pathology I <sup>1,2</sup>	4
CEPT 245	Cardiovascular Anatomy and Physiology <sup>1</sup>	3
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I <sup>1</sup>	2
CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II <sup>1</sup>	2
RTSI 344	Pharmacology for Imaging Professionals <sup>1,2</sup>	4
RTSI 345	Cardiac/Interventional Procedures <sup>1</sup>	3
RTSI 351	Angio/Interventional Procedures I <sup>2</sup>	3
RTSI 352	Angio/Interventional Procedures II <sup>2</sup>	3
RTSI 356	Vascular Anatomy and Physiology <sup>2</sup>	3
RTSI 359	Vascular Imaging Review <sup>2</sup>	1
RTCH 456	Cardiac Interventional Clinical Affiliation <sup>1,3</sup>	
RTCH 457	Vascular Interventional Clinical Affiliation <sup>2,3</sup>	

**Total Units** **28**

<sup>1</sup> Required for cardiac interventional (CI). Total units 28

<sup>2</sup> Required for vascular interventional (VI). Total units 27

<sup>3</sup> Clinical affiliation courses take 2-3 times depending on program selection.

### Area of emphasis: special imaging CT/MRI

Students may select CT, MRI, or both.

RTSI 361	MRI Physics I <sup>2</sup>	2
RTSI 362	MRI Physics II <sup>2</sup>	2
RTSI 364	CT Patient Care and Procedures <sup>1</sup>	2
RTSI 365	MRI Patient Care and Procedures <sup>2</sup>	2
RTSI 367	Cross-sectional Radiographic Anatomy <sup>1,2</sup>	2
RTSI 369	CT Physics <sup>1</sup>	2
Clinical affiliation <sup>4</sup>		12
RTCH 454	Computed Tomography Clinical Affiliation <sup>1,3</sup>	
RTCH 455	Magnetic Resonance Imaging Clinical Affiliation <sup>2,3</sup>	

**Total Units** **24**

<sup>1</sup> Required for Computed Tomography (CT). Total 12 units

<sup>2</sup> Required for Magnetic Resonance Imaging (MRI). Total 14 units

### Area of emphasis: science (15-20 units)

15-20 quarter units selected from the natural sciences in the areas of biology, microbiology, chemistry\*, math, statistics, or physics\*. Courses must be taken from two different content areas with the approval of the program director. These courses are taken at your local college/ university. A minimum grade of C (2.0) is required for all courses.

\* Introductory sequences not accepted.

### Area of emphasis: clinical practice (12-31 units)

The didactic (not including clinical units) coursework from a clinically-based imaging specialty\* (from the list below) may be transferred into a clinical practice emphasis. Any clinical practice emphasis requires licensure from the ARRT, NMTCB, or ARDMS:

- Diagnostic Sonography (ARDMS)
- Cardiac Sonography (ARDMS)
- Nuclear Medicine (NMTCB and/or ARRT)
- Special Imaging (Computed Tomography and/or Magnetic Resonance Imaging)(ARRT). Students with special imaging coursework totaling less than 12 units must take additional science or didactic emphasis courses to complete the emphasis. Courses must be approved by the program director.
- Radiation Therapy Technology (ARRT)
- Cardiac Interventional and/or Vascular Interventional (ARRT)

\* Didactic coursework should come from a regionally accredited institution. Coursework from a non-regionally accredited institution will be considered on a case-by-case basis by the program director.

### Normal time to complete the program

Four (4) years - Two (2) years (6 academic quarters) at LLU – based on full-time enrollment; part time permitted

## Radiation Therapy Technology – BS

#### Program director

Carol A. L. Davis

#### Clinical coordinator

Noriece Kisinger

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, be proficient with computers, and able to work with a treatment team. Patient care and empathy are also important assets. The program is intended for radiographers or other allied health, patient-centered professionals who seek additional specialization, or for non-ARRT (American Registry of Radiologic Technologists) students who meet the prerequisites and would like to complete a bachelor's degree in radiation therapy.

### Mission

The mission of the Bachelor of Science degree in radiation therapy is to prepare professionals in the field of radiation therapy who have received broad education and training in all aspects of the profession. This will include critical thinking, clinical competence, effective communication, and professionalism as they apply to the field of radiation therapy. The program encourages intellectual, physical, social, and spiritual development by emphasizing these in its curriculum—all of which reflect the motto of Loma Linda University Health, "To Make Man Whole."

### Program learning outcomes

By the end of this program, the graduate should be able to:

1. Monitor changes in patient condition.
2. Interpret the isocenter shift from CT simulation data to treatment-planning data.
3. Apply critical thinking skills to analyze complex issues.
4. Perform daily quality assessment and assurance.
5. Check that dosimetry data are accurately transferred to the electronic chart.
6. Recognize treatment changes.
7. Demonstrate effective verbal communications skills.
8. Demonstrate effective written communication skills.
9. Treat all persons with respect.
10. Demonstrate knowledge of HIPAA (Health Insurance Portability and Accountability Act of 1996).
11. Accept responsibility and accountability for actions.
12. Demonstrate quantitative reasoning.

### CPR certification

Students are required to have current health-care provider adult, child, and infant cardiopulmonary resuscitation (CPR) certification for all scheduled clinical experience. CPR certification must be completed at the American Heart Association health-care provider level and 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 Radiation Therapy Technology Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, IL 60606-2901; telephone: 312/704-5300; website: [www.jrcert.org](http://www.jrcert.org) (<http://www.jrcert.org>).

### Admissions

Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Prerequisite courses as listed below.
- Complete the prerequisite requirements, or be a graduate of an accredited radiologic technology program who has completed the prerequisite requirements in conjunction with that program.
- 24 hours of career observation in a radiation oncology department.
- GPA of 3.0 or better, higher is more competitive.
- Admissions essay.
- Interview.

### Prerequisite courses

Prerequisites are listed as they relate to general education domains. All courses must be completed at an accredited college or university prior to entering the program. Please note: C- grades are not transferable for credit.

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general

humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- College algebra (completed within five years with a minimum grade of B).
- Human anatomy and physiology with laboratory, complete sequence (two course minimum)
- Introductory physics at the college level (one quarter/semester)

### Domain 4: Social sciences (minimum 12 quarter units)

- General psychology or developmental psychology.
- Select addition units from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- The human diversity requirement is fulfilled in the portfolio core courses: RTCH 491 Portfolio I and RTCH 492 Portfolio II (approved by the University GE Committee).

### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university
- Other areas of study in communication may include courses in computer information systems, critical thinking, and public speaking.

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

### Other

- Medical terminology
- Radiation physics, radiation protection, principles of radiography, and patient care methods - available, as part of the program, for non-ARRT students the first Summer Quarter (ARRT students start Autumn Quarter).

### Electives

**Electives** – may be needed to meet the minimum requirements of 192 quarter units. A maximum of 105 quarter units may be transferred from a community/junior college.

- ARRT-certified students will earn 89 units in the program. (prerequisite units required: 102 quarter/68 semester)
- non-ARRT-certified students will earn 103 units in the program. (prerequisite units required: 90 quarter/60 semester)

Electives may be selected from the GE domains listed above. For more information regarding GE requirements for graduation, see LLU general education requirements (p. 26).

## Program requirements

### ARRT certified students

#### First Year

#### Autumn Quarter

RTCH 491 Portfolio I 3

RTTH 344	Radiation Therapy Procedures	2
RTTH 355	Physical Principles of Radiation Therapy I	3
RTTH 364	Radiation Oncology I	2
RTTH 371	Radiation Therapy Affiliation I	2

#### Winter Quarter

RTCH 387	Writing for Health-Care Professionals	3
RTTH 342	Patient-Care Practices in Radiation Therapy	2
RTTH 356	Physical Principles of Radiation Therapy II	3
RTTH 365	Radiation Oncology II	2
RTTH 372	Radiation Therapy Affiliation II	3

#### Spring Quarter

AHCJ 403	Pathology II	3
AHRM 475	Health-Care Research and Statistics	4
RTTH 332	Radiation Biology	2
RTTH 357	Applied Dosimetry	2
RTTH 366	Radiation Oncology III	2
RTTH 373	Radiation Therapy Affiliation III	3

#### Second Year

#### Summer Quarter

RELT 406	Adventist Beliefs and Life	3
RTTH 354	Quality Assurance in Radiation Therapy	2
RTTH 474	Radiation Therapy Affiliation IV	5
AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3

#### Autumn Quarter

RELR 409	Christian Perspectives on Death and Dying	3
RTSI 367 <sup>1</sup>	Cross-sectional Radiographic Anatomy	2
RTSI 369 <sup>1</sup>	CT Physics	2
RTTH 475	Radiation Therapy Affiliation V	5

#### Winter Quarter

RELT 415	Christian Theology and Popular Culture	2
RTCH 464	Moral Leadership	3
RTSI 364 <sup>1</sup>	CT Patient Care and Procedures	2
RTTH 476	Radiation Therapy Affiliation VI	4
RTCH 467	Management of a Radiologic Service	3

#### Spring Quarter

RTCH 492 <sup>2</sup>	Portfolio II	3
RTTH 348	Radiation Therapy Review	2
RTTH 477	Radiation Therapy Affiliation VII	4

**Total Units: 89**

<sup>1</sup> The CT sequence (RTSI 364, RTSI 367, RTSI 369) may be substituted with the CT sequence (RTMR 305 Introduction to Computed Tomography I, RTMR 306 Introduction to Computed Tomography II, and RTSI 307 Introduction to Computed Tomography Completion Course) completed by LLU's ASMR students.

<sup>2</sup> Fulfills service learning requirement.

### Non-ARRT certified students

#### First Year

#### Summer Quarter

AHCJ 326	Fundamentals of Health Care	2
RTCH 284	Basic Imaging	3



RTCH 284L	Radiation Clinical Basics Laboratory	1
RTCH 285	The Principles and Physics of Radiation	4
RTMR 224	Legal Issues in Medical Radiography	1
RTMR 284	Radiation Protection and Biology	2
RTCH 305	CT Fundamentals	2
<b>Autumn Quarter</b>		
RTCH 491	Portfolio I	3
RTTH 344	Radiation Therapy Procedures	2
RTTH 355	Physical Principles of Radiation Therapy I	3
RTTH 364	Radiation Oncology I	2
RTTH 371	Radiation Therapy Affiliation I	2
<b>Winter Quarter</b>		
RTCH 387	Writing for Health-Care Professionals	3
RTTH 342	Patient-Care Practices in Radiation Therapy	2
RTTH 356	Physical Principles of Radiation Therapy II	3
RTTH 365	Radiation Oncology II	2
RTTH 372	Radiation Therapy Affiliation II	3
<b>Spring Quarter</b>		
AHCJ 403	Pathology II	3
AHRM 475	Health-Care Research and Statistics	4
RTTH 332	Radiation Biology	2
RTTH 357	Applied Dosimetry	2
RTTH 366	Radiation Oncology III	2
RTTH 373	Radiation Therapy Affiliation III	3
<b>Second Year</b>		
<b>Summer Quarter</b>		
AHCJ 318	Emotional Intelligence and Leadership Skills for Health-Care Professionals	3
RELT 406	Adventist Beliefs and Life	3
RTTH 474	Radiation Therapy Affiliation IV	5
RTTH 354	Quality Assurance in Radiation Therapy	2
<b>Autumn Quarter</b>		
RELR 409	Christian Perspectives on Death and Dying	3
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 369	CT Physics	2
RTTH 475	Radiation Therapy Affiliation V	5
<b>Winter Quarter</b>		
RELT 415	Christian Theology and Popular Culture	2
RTCH 464	Moral Leadership	3
RTCH 467	Management of a Radiologic Service	3
RTSI 364	CT Patient Care and Procedures	2
RTTH 476	Radiation Therapy Affiliation VI	4
<b>Spring Quarter</b>		
RTCH 492 <sup>2</sup>	Portfolio II	3
RTTH 348	Radiation Therapy Review	2
RTTH 477	Radiation Therapy Affiliation VII	4
<b>Total Units:</b>		<b>104</b>

<sup>1</sup> May be substituted with another RELR course.

<sup>2</sup> Fulfills service learning requirement.

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

## 1 Normal time to complete the program

- 4 Four (4) years – Based on full-time enrollment, a student who is a radiologic technologist (ARRT) completes the LLU portion of the program in seven (7) quarters. A student who is not a radiologic technologist (Non-ARRT) starts one quarter earlier and will complete in eight (8) quarters.

## 3 Radiologist Assistant – M.S.R.S.

### 3 Program director

2 Brigit Mendoza

## 2 The program

- 3 Students receive didactic and clinical mentoring on neonatal, pediatric, adult, and geriatric populations. Courses combine discussion, projects, case studies, and web-based learning. Students are responsible for finding their own clinical site as well as a 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.

### 3 Mission

- 4 The mission of the Radiologist Assistant Program is to provide students with sound clinical, didactic, and moral foundation so that they can impact patient care in a positive and meaningful manner.

### 2 Vision

- 3 The Radiologist Assistant Program at Loma Linda University seeks to be one of the premier radiologist assistant programs in the nation, providing a diverse and safe learning environment that contributes to and promotes Loma Linda University values and standards.

### 3 Purpose

- 5 The purpose of the Radiologist Assistant Program is to educate students to competently function as radiologist assistants in a variety of imaging environments.

### 3 Program learning outcomes

2 By the end of this program, the graduate should be able to:

- 2 1. Perform procedures and clinical activities of the profession.
- 3 2. Engage in activities that advance the profession.
- 3 3. Impact health-care delivery.
- 2 4. Maintain recognized educational standards of the profession.
- 3 5. Employ proper ethics within the profession.

## 4 Admissions

4 Admission is based on a selective process. In addition to Loma Linda University (p. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Bachelor's degree from an accredited college or university. The degree can be in administration or science.
- Current certification in medical radiography from the American Registry of Radiologic Technologists.
- 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. It does not have to be completed at the time of application, but must be completed prior to starting the program.
- A course in research methods completed within the past five years. It does not have to be completed at the time of application, but must be completed prior to starting the program.

## 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
RTRA 519	Medical-Legal Issues in Radiology	1
RTRA 775	Clinical Internship V	6
REL_ 5_	Graduate-level Religion	3

#### Winter Quarter

RTRA 518	Radiobiology and Health Physics	2
RTRA 588	Comprehensive Review I	1
RTRA 776	Clinical Internship VI	6
RTRS 621	Capstone Project I	3

#### Spring Quarter

RTRA 589	Comprehensive Review II	1
RTRA 614 <sup>1</sup>	Professional Portfolio	1
RTRA 777	Clinical Internship VII	6

RTRS 622	Capstone Project II	3
<b>Total Units:</b>		<b>94</b>

<sup>1</sup> Fulfills service learning requirement

### Normal time to complete the program

Two (2) years (seven [7] academic quarters) – based on full-time enrollment

## Special Imaging – Certificates

### Program director

2 Suzette Sanchez

### Clinical coordinator

1 Suzette Sanchez

The Division of Special Imaging oversees the following certificate programs.

## Overview of programs

### Cardiac and vascular imaging (CVI)

Cardiac interventional and vascular interventional technologists work in a highly specialized field operating sophisticated imaging equipment. This technology provides detailed fluoroscopic images of the human body, assisting physicians with quality patient diagnosis and treatment.

The Cardiac and Vascular Imaging Program is a full-time, 12-month certificate that requires four quarters beginning in autumn. During the program, students receive structured coursework 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. The University cannot guarantee that the student will be assigned close to their residence.

The program's load requires 40 hours per week, which includes didactic and clinical experience—the latter involving up to four 8-hour days per week. Didactic courses are 100 percent online. Clinical affiliation courses require the student to be at the affiliated hospitals.

### Computed tomography (CT) and magnetic resonance imaging (MRI)

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 full-time programs are scheduled as follow:

CT—the six-month certificate program is completed in two quarters (Autumn and Winter). An additional quarter of clinic may be available to students who have not met program requirements, at the discretion of the program director in collaboration with the student.

MRI—the six-month certificate program requires two quarters beginning Spring Quarter or Autumn Quarter. An additional quarter of clinic may be available to students who have not met program requirements, at the discretion of the program director in collaboration with the student. A nine-month, part-time option is available for qualified students. This three-quarter option begins in the Autumn Quarter.

CT/MRI—this twelve-month certificate program is completed in four academic quarters (Autumn through Summer). An additional quarter of clinic may be available to students who have not met program requirements, at the discretion of the program director in collaboration with the student.

During the program, students take formal coursework 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 their residence.

The program's load requires 40 hours per week, which includes didactic education 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. Further details regarding these two requirements can be found in the Admission Policies and Information (p. 23) section of this CATALOG. Students will be responsible for paying fees associated with immunizations and background checks. Loma Linda University and the Department of Radiation Technology cannot guarantee employment.

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

## Program learning outcomes

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

1. Model the ethics, values, and attitudes of special imaging professionals in communication, interactions, and professional behaviors.
2. Demonstrate clinical competency, professional skills, and life-long learning in the chosen special imaging modality.

## The imaging 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. 23) and School of Allied Health Professions admissions requirements (p. 47), the applicant must also complete the following requirements:

- Current ARRT registry in Radiography (R)\*
- Current California (CRT) license\*
- Current BLS card with the American Heart Association
- A minimum G.P.A. of 2.5 maintained in all didactic and clinical course work

- A minimum of twelve hours of observation in each modality. The career observation form is available as a download from the forms page on the website.
- Venipuncture is highly recommended

\* An applicant who is completing a program in radiologic technology prior to the start of the program may apply as long as they have completed ARRT, CRT, and CPR requirements by the program start date.

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.

Students interested in using one of these certificates as part of their Bachelor of Science degree should review the Radiation Sciences , BS program.

## Application dates

1. Applications are accepted starting January 1st of each year.
2. Deadlines for applications are
  - a. May 1 for CT-only applicants, MRI-only fall-start applicants, and CT/MRI combined applicants
  - b. December 1 for MRI-only spring-start applicants
  - c. June 30 for CVI applicants
3. Applicants should submit applications early since interview slots are limited.

## Interviews

CVI interviews are conducted in June or July. CT and MRI interviews are conducted in July for fall-start applicants and January for MRI-only spring-start applicants. 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 personal interviews on campus at Loma Linda. Applicants will be notified by telephone and/or email of their interview schedules. Due to the limited number of interview dates/times, you will be assigned an interview slot, and you should plan around your interview as alternate dates/times are not available. Applicants are rated in the following four areas:

- Work experience or training background
- Recommendations
- Academic record
- Communication skills, knowledge, and motivation.

## Selection

After applicants have been interviewed, the selection committee for the CVI, CT, and MRI programs meet to make final selections. Selections are usually decided by the mid-July for fall-start applicants and early February for spring-start applicants, and confirmation of each decision is mailed to the respective applicant from the Office of Admissions for the School of Allied Health Professions.

## Program requirements

Cardiac and Vascular Imaging (CVI) – Certificate (p. 146)

Computed Tomography (CT) – Certificate (p. 146)

Magnetic Resonance Imaging (MRI) – Certificate (p. 146)

CT/MRI – Certificate (p. 146), Comparison (p. 147)

## Cardiac and Vascular Imaging (CVI) – Certificate

### First Year

Autumn Quarter		Units
CEPT 245	Cardiovascular Anatomy and Physiology	3
CEPT 251	Cardiac Electrophysiology and Rhythm Recognition I	2
RTSI 345	Cardiac/Interventional Procedures	3
Winter Quarter		
AHCJ 402	Pathology I	4
CEPT 252	Cardiac Electrophysiology and Rhythm Recognition II	2
RELE 457	Christian Ethics and Health Care	2
RTSI 351	Angio/Interventional Procedures I	3
Spring Quarter		
RTSI 344	Pharmacology for Imaging Professionals	4
RTSI 356	Vascular Anatomy and Physiology	3
RTSI 360	Cardiac Imaging Review	1
Summer Quarter		
RTSI 352	Angio/Interventional Procedures II	3
RTSI 359	Vascular Imaging Review	1
RTCH 456	Cardiac Interventional Clinical Affiliation	3
RTCH 457	Vascular Interventional Clinical Affiliation	3
<b>Total Units:</b>		<b>37</b>

<sup>1</sup> Required for cardiac interventional (CI). Total units 28.<sup>2</sup> Required for vascular interventional (VI). Total units 27.<sup>3</sup> Multiple registrations required to meet unit requirement.<sup>4</sup> Students pursuing both CI & VI are required to complete 12 units (6 units of RTCH 456 Cardiac Interventional Clinical Affiliation and 6 units of RTCH 457 Vascular Interventional Clinical Affiliation). Students pursuing only one emphasis (i.e., CI or VI) will complete 9 affiliation units in the designed emphasis.

### Normal time to complete the program

One (1) year (four [4] academic quarters)—based on part-time enrollment.

## Computed Tomography (CT) – Certificate

Autumn Quarter		Units
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 369	CT Physics	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
Winter Quarter		
REL_ 4__	Upper-division religion <sup>1</sup>	2
RTSI 364	CT Patient Care and Procedures	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
<b>Total Units:</b>		<b>14</b>

<sup>1</sup> Students take one religion course selected from offerings by the School of Religion. Selection varies by quarter including, but not limited to, the following courses: RELT 423 Loma Linda Perspectives, RELE 457 Christian Ethics and Health Care, RELT 415 Christian Theology and Popular Culture.<sup>2</sup> May register for two (2) units, three (3) times to spread the affiliation over three quarters versus the two quarters for three (3) units to fulfill the 6-unit requirement.

### Normal time to complete the program

Twenty-three (23) weeks (two [2] academic quarters)—based on full-time enrollment

## Magnetic Resonance Imaging (MRI) – Certificate

Autumn Quarter		Units
RTSI 361	MRI Physics I	2
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
Winter Quarter		
REL_ 4__	Religion elective <sup>1</sup>	2
RTSI 362	MRI Physics II	2
RTSI 365	MRI Patient Care and Procedures	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
<b>Total Units:</b>		<b>16</b>

<sup>1</sup> Students take one religion course selected from offerings by the School of Religion. The selection of course varies by quarter including, but not limited to, the following courses: RELT 423 Loma Linda Perspectives, RELT 436 Adventist Heritage and Health, RELE 457 Christian Ethics and Health Care, RELT 415 Christian Theology and Popular Culture.<sup>2</sup> May register for two (2) units, three (3) times to spread the affiliation over three quarters versus the two quarters for three (3) units to fulfill the 6-unit requirement.

### Autumn and Spring starts

### Normal time to complete the program

Twenty-two (22) weeks (two [2] academic quarters)—based on full-time enrollment, part-time permitted

## CT/MRI – Certificate

Autumn Quarter		Units
RTSI 367	Cross-sectional Radiographic Anatomy	2
RTSI 369	CT Physics	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
Winter Quarter		
REL_ 4__	Upper-division religion <sup>1</sup>	2
RTSI 364	CT Patient Care and Procedures	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
Spring Quarter		
RTSI 361	MRI Physics I	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3

**Summer Quarter**

RTSI 362	MRI Physics II	2
RTSI 365	MRI Patient Care and Procedures	2
RTSI 970 <sup>2</sup>	Special Imaging (CT/MRI) Affiliation	2 or 3
<b>Total Units:</b>		<b>26</b>

<sup>1</sup> Students take one religion course selected from offerings by the School of Religion. Selection varies by quarter including, but not limited to, the following courses: RELT 423 Loma Linda Perspectives, RELT 436 Adventist Heritage and Health, RELE 457 Christian Ethics and Health Care, RELT 415 Christian Theology and Popular Culture.

<sup>2</sup> May register for two (2) units, six (6) times to spread the affiliation over six quarters versus the four quarters for three (3) units to fulfill the 12-unit requirement.

**Normal time to complete the program**

Forty-five (45) weeks (four [4] academic quarters) – based on full-time enrollment

**CT, MRI, CT/MRI Comparison**

Course Title	CT	MRI	CT and MRI
<b>First Year: Autumn Quarter</b>			
RTSI 367 Cross-sectional Radiographic Anatomy	2.0		2.0
RTSI 369 CT Physics	2.0		2.0
RTSI 970 Special Imaging (CT/MRI) Affiliation	3.0		3.0
<b>Totals</b>	<b>7.0</b>		<b>7.0</b>
Course Title	CT	MRI	CT and MRI
<b>First Year: Winter Quarter</b>			
REL_ 4__ Upper-division Religion <sup>1</sup>	2.0		
RTSI 364 CT Patient Care and Procedures	2.0		2.0
RTSI 970 Special Imaging (CT/MRI) Affiliation	3.0		3.0
REL_ 4__ Upper-division Religion <sup>1</sup>			2.0
<b>Totals</b>	<b>7.0</b>		<b>7.0</b>
Course Title	CT	MRI	CT and MRI
<b>First Year: Spring Quarter</b>			
RTSI 361 MRI Physics I		2.0	2.0
RTSI 970 Special Imaging (CT/MRI) Affiliation		3.0	3.0
RTSI 367 Cross-sectional Radiographic Anatomy		2.0	
<b>Totals</b>		<b>7.0</b>	<b>5.0</b>
Course Title	CT	MRI	CT and MRI
<b>Second Year: Summer Quarter</b>			
RTSI 362 MRI Physics II		2.0	2.0
RTSI 365 MRI Patient Care and Procedures		2.0	2.0
RTSI 970 Special Imaging (CT/MRI) Affiliation		3.0	3.0
REL_ 4__ Upper-division Religion <sup>1</sup>		2.0	
<b>Totals</b>		<b>9.0</b>	<b>7.0</b>
<b>Overall Totals</b>	<b>14.0</b>	<b>16.0</b>	<b>26.0</b>

<sup>1</sup> Students take one religion course selected from offerings by the School of Religion. The selection of course varies by quarter including, but not limited to, the following courses: RELT 423 Loma Linda Perspectives, RELT 436 Adventist Heritage and Health, RELE 457 Christian Ethics and Health Care, RELT 415 Christian Theology and Popular Culture.

Comparison chart based on MRI spring start date. MRI may also begin in autumn.



# 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 toward 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 participating faculty members.

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." Because several of the professions—for which programs within the School of Behavioral Health 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. As such, the School of Behavioral Health adheres to the policies of the University and affirms that Christian principles are incompatible with the 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 School of Behavioral Health is committed to equal education and employment opportunities for individuals of all races; and does not unlawfully discriminate on the basis of veteran status, handicap, gender identity, sexual orientation, race, color, or national origin in its educational or admissions policies, financial affairs, employment, student life and services, or in any of its programs. 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 ethics and 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 graduates for a life dedicated of service to humanity.

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 at 909/558-1900.

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 postbaccalaureate and post-degree certificates. These programs equip graduates with leading-edge knowledge and practice experiences necessary for careers in behavioral health practice, research, and administration.

## Philosophy

The School of Behavioral Health is grounded in 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 the 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 seeks 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 anti-stigma.
- Integration of spirituality and cultural competency.
- Integration of behavioral health into primary health care.
- A global context of behavioral health practice.
- Collegial and collaborative team practice.
- A 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 a spiritually supportive context for teaching, clinical practice, and research innovation that pursues integrative behavioral health aimed at reducing health disparities and promoting social justice in a global context locally and abroad.

## General regulations

### Application procedure

1. Application instructions, available on the Web at [llu.edu/central/apply](http://llu.edu/central/apply) (<http://www.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 program director or designated admissions coordinator for the program 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 accepted applicants by email and through first class U.S. mail. Accepted applicants must respond affirmatively using the online admissions confirmation system before becoming eligible to register in the School of Behavioral Health. Applicants who have been denied acceptance are currently notified using first class U.S. mail only.

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 can register for courses.

### Admission requirements

A four-year baccalaureate degree (or its equivalent) from an accredited college or university is a prerequisite for admission to School of Behavioral Health's graduate programs. Transcripts of the applicant's scholastic record need to demonstrate 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, admissions consideration may be given if grades from the junior and senior years of the undergraduate degree 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 some degree programs. Waiver of the GRE requirement is program specific. 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 website 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

Regardless of nationality or citizenship, an applicant whose native language is not English or who's secondary education has been obtained outside the U.S. is required to pass an approved English proficiency test. Additionally, any applicant whose English competency is uncertain

in regard to their professional success in course, clinical, or other program requirements will be required to pass an English proficiency test. University policy regarding minimum passing scores and timeline for acceptable test reports all apply.

## Graduate degree requirements

### Minimum required grade point average

Each student must maintain a cumulative grade point average of at least a B (3.0) and receive a grade of B or higher in each graduate-level course to continue in regular standing. Students need to familiarize themselves with the minimum grade requirements applied in their program of study.

All transfer courses must meet the B (3.0) minimum grade requirement and be equivalent to courses appropriate to degree requirements. Grades for transfer courses are not calculated as part of a student's matriculating G.P.A.

### Service learning

All School of Behavioral Health students are required to complete an approved academic service-learning course prior to graduation. Courses currently approved to meet this requirement are specified in each program's curricula.

## 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.

## 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.

## 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 post-baccalaureate and post-degree certificate programs. Students accepted into such programs are assigned an advisor who works with them as they fulfill the program requirements. Students are required to maintain a B (3.0) grade point average, with no course grade below B (3.0). All certificate students are required to take at least one religion course (numbered between 500 and 600). The unit values of the required religion courses are specified in each certificate program.

## 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 advises the student in meeting the program of study and University

requirements. The advisor works with the director of the student's program to support the student's successful progress to 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. In many cases, subject deficiencies do not exclude an applicant from admission or enrollment; but deficiencies must be completed as specified and within the time-frame determined, usually during the first full quarter of study at this University. Applicants need to confer with their specific program of study to determine if there are subject prerequisites or deficiencies.

### 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. Changes to the academic plan must be approved by the student's advisor and the program director.

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. Program extensions can be considered within the limits of University policy.

Course credit allowed toward the master's degree is nullified five 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. Academic documentation of the justification of revalidated courses must be approved by the dean's office.

### 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.

### Comprehensive and final examinations

The student must take 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 program director in association with the program's academic standards committee determines the requirements needed to ameliorate the failed examination. In the case of a failed thesis defense, a written analysis of the candidate's status and program's recommendations are filed with the dean's office. 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.

### 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 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 of study for full-time students.

### 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, three-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

Students writing a thesis must register for at least one unit of thesis credit. The research and thesis preparation are under the direction of a thesis chair and research committee. The timeline for determining a thesis topic and research design are program specific, but 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.

### 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 them 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 two copies of the thesis, one copy to be deposited in the appropriate department or school collection and one for the



student, 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 and professional doctoral degrees

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. Professional doctoral degrees require demonstration of integrated scholar practitioner requirements as determined by professional academic agencies and standards of practice.

### Advisor and doctoral research committee

The School of Behavioral Health requires advisors for candidates in either Doctor of Philosophy degrees or professional doctoral degrees have demonstrated scholarship productivity in their chosen disciplines. Each student, upon acceptance into a doctoral degree program, is assigned an advisor to assist with academic planning and guidance through program requirements. Subsequently (no later than when applying for candidacy), the student is assigned a doctoral research committee. Each program maintains a list of qualified doctoral degree mentors. The doctoral research committee, usually chaired by the advisor, is responsible for screening dissertation and project 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 program prerequisites may not be admitted to a Ph.D. degree program or professional doctoral degree program until prerequisites are completed (at Loma Linda University or elsewhere) with acceptable grades. However, in most cases subject deficiencies do not exclude an applicant from admission or enrollment; but deficiencies must be completed as specified and within the time frame determined, 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 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. Seven years are allowed for completion after admission to a doctoral degree program. Program extensions can be considered within the limits of University policy.

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. Academic documentation of the justification of revalidated courses must be approved by the dean's office with recommendations regarding the student's future relation to the school.

### Residence

The School of Behavioral Health requires two years of residency for the doctoral degrees—D.M.F.T, D.S.W., 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, clinical practice, research, or a combination of these. A full load of courses is eight 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.

### Scholarly competence

Doctoral degree students demonstrate competency in scholarship along with research, clinical competence, 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 director is responsible for arranging preparation and administration of the program specific examination, which may vary in format by program, as well as its evaluation and subsequent reports of results. Success in the comprehensive examination is a prerequisite to candidacy.

Students cannot be admitted to the examination until they have completed the majority of units required beyond the master's degree or its equivalent.

### The final oral examination

After completion of the dissertation or project document, 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/dissertation or project defense.

If a candidate fails to pass this final examination/dissertation or project defense for a graduate degree, the program director in association with the program's academic standards committee determines the requirements needed to ameliorate the failed examination. A written analysis of the candidate's status and the program's recommendations are filed with the dean's office. The student receives a copy of the committee's recommendation.

### Project

All, Doctor of Marital and Family Therapy, Doctor of Psychology, and Doctor of Social Work degree students are required to complete a project. All professional doctoral degree students must register for and complete all research units as specified by the program requirements.

Each student, upon acceptance into a professional doctoral degree program, is assigned an advisor to assist with academic planning and guidance through program requirements. The School of Behavioral Health requires advisors for professional doctoral degree program to have demonstrated scholarship productivity in specific disciplines. Prior



to advancing to candidacy each student is also assigned a doctoral research committee and have an approved topic for research project. Each program maintains a list of qualified doctoral degree mentors. The doctoral research committee, usually chaired by the advisor, is responsible for screening research topics, recommending candidacy, guiding research, administering written and oral examinations, evaluating the research project and other evidence of the candidate's fitness to receive the degree, and recommending the student for graduation.

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 project manuscript is accepted and the final oral defense completed. 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. As such, the student must have active registration during the quarter that the final oral defense is completed.

### Dissertation

All Doctor of Philosophy students are required to complete a dissertation and must register for and complete all of the research units as specified by the program requirements.

Each student, upon acceptance into a Doctor of Philosophy program is assigned an advisor to assist with academic planning and guidance through program requirements. The School of Behavioral Health requires advisors for these doctoral degree program to have demonstrated scholarship productivity. Prior to advancing to candidacy each student is also assigned a doctoral research committee and have an approved topic for the dissertation. Each program maintains a list of qualified doctoral degree mentors. The doctoral research committee, usually chaired by the advisor, is responsible for screening dissertation topics, recommending candidacy, guiding research, administering written and oral examinations, evaluating the dissertation and other evidence of the candidate's fitness to receive the degree, and recommending the student for graduation.

Doctor of Philosophy students are required to be knowledgeable of the dissertation requirements and policies set by the Faculty of Graduate Studies. 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 and the final oral defense completed. 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. As such, the student must have active registration during the quarter that the final oral defense is completed.

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 or professional doctoral degree will include confirmation that all 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. Each unique program's 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 take at least three, three-unit religion courses (numbered between 500 and 600) for a total of nine units of religion courses. 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, qualify for admission to the School of Behavioral Health, and already be admitted to another program at the University. Application may be made at any point in the student's progress in the professional school, though it is usually made during the second year.

Students may, as needed, be required to interrupt their professional study for two or more years 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.

## 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 provides a school-specific *Policies and Procedures Manual* 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 eight 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

The transfer of credits into School of Behavioral Health degree programs is guided by University policy. Transfer credits will not be used to offset coursework at this University that earns less than a B (3.0) average.

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 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 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 and professional/clinical probation

Continued enrollment in a professional degree program or certificate is contingent upon a student's continued satisfactory academic and professional (clinical) performance. Any student whose performance in either of these 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. The academic requirements for post-baccalaureate and post-degree certificate programs is the same as the G.P.A. requirements for all other School of Behavioral Health programs.

#### Professional performance probation

All students enrolled in professional programs are required to adhere to the professional, clinical, and ethical standards set forth by their disciplines, the school, and university. Students obtain copies of the ethical and professional performance and clinical practice standards and requirements set forth by their disciplines through their academic programs. Professional performance requirements for the School of Behavioral Health are included in each program's student handbooks

and in the school's student handbook. Program handbooks and the school's student handbook are provided to students as they begin their degree program. The University's conduct and behavior expectations are provided in the Loma Linda University *Student Handbook*. Any student whose performance is evaluated to fall below these requirements will be placed on professional performance, or clinical, probation at the recommendation of the department's academic standards committee and department chair to the dean of the school. Enrollment in course, clinical work, or other program requirements while on professional performance probation is at the recommendation of the department and approval of the dean, and also conditional based upon the severity of the situation and extent of amelioration. Any student whose professional performance falls below these minimum requirements for two consecutive or dispersed quarters will be evaluated for dismissal from the school.

In addition, a student who receives an Unsatisfactory (U) in any segment or quarter of a practicum or clinical requirement is automatically placed on professional performance, or clinical, probation by the dean's office. Continued enrollment for the next quarter, term, or rotation segment for a student on professional performance probation is subject to the recommendation of the department chair and its academic standards committee to the dean of the school. A student who receives a U grade for a second consecutive or dispersed segment or quarter of practicum will be evaluated for dismissal from the school. Program and professional specific requirements also apply in these situations and will affect the evaluation of the student's continuing status in the program of study, the school, and University.

## Financial information

### Schedule of charges (2022-2023)

#### Tuition

\$862	Per unit, graduate credit
\$431	Per unit, audit
\$4,500	Flat fee for the Play Therapy Certificate Program
\$38,142	Per year: Psychology Psy.D. and Ph.D.

#### Special charges

\$0	Application fee*
\$0	Application fee for combined degrees*
\$945	Enrollment fee per quarter
\$200	Nonrefundable tuition deposit**
\$0	Application to add program or degree*

Programs may have additional fees.\*\*\*

\* Application fees are being waived for the 2022-2023 academic year.

\*\* 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. Additional fees for specialized professional and global practice experiences may also apply.

#### VIP Priority Application Deadline Dates for 2022-2023

Program	Autumn Qtr.	Winter Qtr.	Spring Qtr.	Summer Qtr.
Child Life Specialist	February 1, 2022			

Counseling	December 11, 2021	October 1, 2022	January 2, 2022	March 1, 2022
D.M.F.T.	November 30, 2022			
Drug and Alcohol Counseling Certificate	December 11, 2021	October 1, 2022	January 2, 2022	March 1, 2022
Dual Degrees	December 11, 2021	October 1, 2022	January 2, 2022	March 1, 2022
Marriage and Family Therapy	December 11, 2021	October 1, 2022	January 2, 2022	Applications not accepted
Ph.D./ Systems, Families, & Couples	December 11, 2021	October 1, 2022	Applications not accepted	Applications not accepted
Psychology	December 1, 2021*			
School Counseling Certificate	December 11, 2021	October 1, 2022	January 2, 2022	March 1, 2022
Social Work	November 15, 2022 **		November 15, 2021***	

\* Standard deadline may be extended in consideration of program capacity.

\*\* All hybrid students enroll during fall quarter

\*\*\* Advance standing students only

## Departments

- Department of Counseling and Family Science (p. 156)
- Department of Psychology (p. 172)
- Department of Social Work and Social Ecology (p. 179)

## Programs

- Child Life Specialist – M.S. (p. 156)
- Clinical Leadership – D.S.W. (p. 179)
- Counseling – M.S. (p. 158)
- Criminal Justice – M.S. (p. 181)
- Drug and Alcohol Counseling – Certificate (p. 160)
- Gerontology – M.S. (p. 182)
- Marital and Family Therapy – M.S. (p. 161), D.M.F.T. (p. 161)
- Play Therapy – Certificate (p. 184)
- Psychology – Psy.D. (p. 174), Ph.D. (p. 172)
- School Counseling – Certificate (p. 167)
- Social Welfare and Social Research – Ph.D. (p. 184)
- Social Work – M.S.W. (p. 186)
- Systems, Families and Couples – Ph.D. (p. 169)

## Department of Counseling and Family Sciences

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. The department values local and 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 accreditations and approvals, and have been recognized for their outstanding work, high standards, and superior student outcomes.

As one of the three academic departments in the School of Behavioral Health at Loma Linda University, the Department of Counseling and Family Sciences administers three master's degree programs—child life specialist (M.S.), counseling (M.S.), and marital and family therapy (M.S.), online and campus-based; and two doctoral programs—a Ph.D. degree in systems, families, and couples that offers a clinical specialty (couple and family therapy) and a nonclinical specialty (family studies); and a Doctor of Marital and Family Therapy (D.M.F.T.) degree. The D.M.F.T. degree is offered online only.

Certificate programs are offered to augment academic and professional preparation for future careers. They include drug and alcohol counseling (p. 160) (online only) and the school counseling (p. 167) certificate which leads to the pupil personnel services credential in the state of California. The department also offers a medical family therapy specialization for both M.S. and doctoral students.

### Academic writing support

Students who need assistance can contact their program directors to arrange individual support through the department's writing center.

### Combined degrees

The department offers a dual-degree plus certificate program. Graduates of this program earn an M.S. in counseling and M.S. in marital and family therapy as well as a drug and alcohol counseling certificate.

A complete list of program instructors can be viewed online at [llu.edu/behavioral-health/cfs](http://llu.edu/behavioral-health/cfs) (<http://www.llu.edu/behavioral-health/cfs/>).

### Chair

Winetta A. Oloo

### Primary faculty

Heather Beeson

Bryan M. Cafferky

Brian Distelberg

Zephon Lister

Lena Lopez-Bradley

Michelle Minyard-Widmann

Mary Moline

Winetta Oloo

Nichola Ribadu

Alisha Saavedra

Randall Walker

Jackie Williams-Reade

### Secondary faculty

Siroj Sorajjakool

## Programs

- Child Life Specialist – M.S. (p. 156)
- Counseling – M.S. (p. 158)
- Drug and Alcohol Counseling (online only) – Certificate (p. 160)
- Marital and Family Therapy – M.S. (p. 161) (online and campus-based), D.M.F.T. (p. 161) (online only)
- School Counseling (PPS) – Certificate (p. 167)
- Systems, Families, and Couples – Ph.D. (p. 169)

## Child Life Specialist – M.S.

### Program director

Michelle Minyard-Widmann

### Director of clinical training

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 health-care settings. In addition, practice experiences within the United States and in other countries will provide students with child life practice in diverse environments.

## The child life profession

Child life specialists are professionals in child development. They promote effective coping through play, preparation, education, and self-expression activities. Child life specialists provide emotional support for families and encourage optimal 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 (Association of Child Life Professionals <http://www.childlife.org>).

## Certification for the child life profession

Through the Association of Child Life Professionals, 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. Requirements for certification are based on academic and internship experience, as well as successful completion of an examination process (Association of Child Life Professionals <http://www.childlife.org>).

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Represent and communicate child life practice and psychosocial issues of infants, children, youth, and families.
2. Utilize theories of child development, stress and coping, and family systems in pediatric health environments.
3. Work collaboratively in diverse settings.
4. Identify as a professional child life specialist through membership and participation in professional organizations.
5. Apply the concepts of ethical and legal standards of the profession.
6. Describe the impact of health and health issues on a global level.
7. Satisfactorily complete a supervised practicum and internship in child life.

- Bachelor's degree in the social sciences or equivalent from an accredited college or university
- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's coursework 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. 24):

- Health clearance

## 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-hour internship are required to complete the master's degree. These experiences will provide an opportunity for students to build upon coursework and put theory into practice. Students will also have the opportunity to participate in various events such as grief camps, health fairs, global health trips, and other activities on campus designed to broaden their clinical experiences.

## Financial assistance

Students accepted into the M.S. degree program may receive financial assistance through merit-based awards (teaching fellowships, and a variety of research and student service assistantships) or through need-based financial aid (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 accredited by the WASC Senior College and University Commission (WSCUC), 1001 Marina Village Parkway, Suite 402, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

## Admissions

Applicants must meet Loma Linda University (p. 23) and School of Behavioral Health (p. 149) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Those who meet these requirements, as well as the published deadlines and are accepted into the program, may enroll during Autumn quarter.

Additional admission requirements include:

## Program requirements

Required

CHLS 501	Hospitalized Infant and Toddler Development	3
CHLS 502	Introduction to the Child-Life Profession	3
CHLS 503	Preparation for Clinical Placement	3
CHLS 504	Child Life Administration and Program Development	3
CHLS 505	Cross-Cultural Perspectives in Health Care <sup>3</sup>	3
CHLS 506	Therapeutic Play for Children Affected by Illness and Injury	3
CHLS 507A	Aspects of Illness and Disease	3
CHLS 507B	Aspects of Illness and Disease	3
CHLS 508	Grief and Loss	3
CHLS 509	Child-Life Assessment	3
CHLS 604	Child Life Internship Seminar I	4
CHLS 605	Child Life Internship Seminar II	4
CHLS 606	Parenting Medically Fragile Children	3
CHLS 607	Child Life Professional	3
CHLS 608	Child Life Practicum	1
CHLS 609	Global Practice: Child Life Specialist	3
COUN 576	Exceptional and Medically Challenged Children	3
COUN/MFAM 584	Advanced Child and Adolescent Development	3
MFAM 501	Research Tools and Methodology: Quantitative	3
MFAM 515	Crisis Intervention and Client Advocacy	3
MFAM 516	Play Therapy	2
MFAM 553	Family Systems Theory	3
MFAM 568	Groups: Process and Practice	3
MFAM/COUN 644	Child Abuse and Family Violence	3
RELR 568	Care of the Dying and Bereaved (or equivalent)	3
<b>Total Units</b>		<b>74</b>

**Clinical training**<sup>1, 2</sup>

CHLS 700	Clinical Training	2
CHLS 701	Clinical Training	6
CHLS 702	Clinical Training	6

**Total Units** **14**



<sup>1</sup> Clinical training units (700-numbered courses) are in addition to the minimum didactic units required for the degree

<sup>2</sup> A minimum of 700 hours of clinical child life hours (CHLS 604, CHLS 605 and CHLS 608) completed within the degree program. Students must register for 14 clinical training units (CHLS 700, CHLS 701 and CHLS 702).

<sup>3</sup> Fulfills service learning requirement

#### Other degree requirements

- Residence of at least two academic years.
- Students must meet the knowledge, skills, and professional performance competencies outlined by the program.
- Maintain a minimum grade point average of 3.0 (or a letter grade of B on a 4.0 scale) in order to progress successfully through the program and complete the degree. Any course with a grade below a B (3.0) must be repeated.
- Successful completion of a written comprehensive examination (taken before advancement to candidacy) and final oral and written examinations at the end of the program.
- Background check passed prior to matriculation.

### Normal time to complete the program

Two (2) years (seven [7] academic quarters) — full-time enrollment required

## Counseling — M.S.

#### Interim program director

Randall Walker

The M.S. degree program in counseling is located in the Department of Counseling and Family Sciences within the School of Behavioral Health. Candidates prepare to become licensed professional clinical counselors (LPCC).

The curriculum is designed to give students a broad academic background in mental health counseling with supervised field experience. Degree requirements include completion of 90 quarter units of academic coursework and field experience. Clinical placements range from working as a trainee in University clinics—such as the Behavioral Medicine Center, to off-campus sites of various types.

Graduates who complete Loma Linda University's M.S. degree in counseling meet all educational requirements to treat individuals, families, and groups.

### Additional certification options

Candidates may also pursue preparation for the California Pupil Personnel Services (PPS) credential, qualifying them to work in the public school system as school counselors. See the school counseling (p. 167) certificate program for further details. Candidates may also complete the certificate in drug and alcohol counseling (p. 160) by adding a minimum number of units to their program of study.

Both certificates require separate applications. It is recommended that students apply during their first quarter in their master's program.

## Licensed professional clinical counselor (LPCC)

Loma Linda University counseling program graduates are academically prepared to pursue licensure as professional clinical counselors (LPCC) who are qualified to treat individuals, families, and groups of all ages. LPCCs work in private practices, various mental health settings, substance-use treatment facilities, inpatient and outpatient medical facilities, religious organizations, family courts, employee assistance programs, retirement homes, higher education, and K-12 schools.

The California Business and Professions Code Section 4999.20 defines professional clinical counseling as “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.”

The California Board of Behavioral Sciences (BBS) regulates all master's-level licenses in mental health. State standards for LPCC are consistent with national standards, making it easier for graduates to be granted reciprocity throughout the country. Equivalent licensure in other states may be referred to as licensed professional counselor, licensed clinical mental health counselor (LCMHC), or similar titles. Complete information regarding the scope of LPCC licensure is located on the Board of Behavioral Sciences website [https://bbs.ca.gov/pdf/publications/lpcc\\_couple-fam\\_faq.pdf](https://bbs.ca.gov/pdf/publications/lpcc_couple-fam_faq.pdf).

### LPCC clinical training and field experience

All LPCC candidates must complete field experiences as advised throughout their programs. LPCC completion requires 280 clock hours of clinical training in counseling clients. Additional details related to hours and supervision will be available upon admission.

### Program learning outcomes

Graduates of the M.S. degree program in counseling will be able to:

1. Develop an identity as a professional counselor.
2. Demonstrate an awareness and understanding of the ethical standards of professional counseling organizations and credentialing bodies, and the ability to apply ethical and legal considerations within professional counseling.
3. Demonstrate knowledge of strategies for identifying and eliminating barriers, prejudices, and processes of intentional and unintentional oppression and discrimination in clinical work.
4. Employ ethical and culturally relevant strategies for promoting resilience as well as optimum development and wellness across the life span.
5. Identify strategies for facilitating client skill development for career, educational, and life-work planning and management.
6. Demonstrate knowledge of and competency in a variety of evidence-based counseling strategies and techniques for prevention and intervention.
7. Develop knowledge of group therapy, understanding of group dynamics, and competency in designing, forming, and facilitating groups.

8. Demonstrate ethical and culturally relevant strategies for selecting, administering, and interpreting assessment and test results.

## Financial assistance

For information regarding funding opportunities, see Student Aid (p. 42) in the financial polices section of this CATALOG.

## Accreditation

Loma Linda University is accredited by the WASC Senior College and University Commission (WSCUC), 1001 Marina Village Parkway, Suite 402, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

The Counseling M.S. program has been evaluated and approved by the California Board of Behavioral Sciences (BBS) to meet Licensed Professional Clinical Counselor (LPCC) licensure requirements, pursuant to California Business and Professions Code (BPC) §4999.33. The Pupil Personnel Services Credential Program (PPS) in School Counseling is approved by the California Commission on Teacher Credentialing (CTC) which regulates and issues credentials.

## Admissions

Applicants must meet Loma Linda University (p. 23) and School of Behavioral Health (p. 149) 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 an accredited college or university.
- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's coursework for at least the final 45 units prior to graduation.
  - Special consideration may be given to applicants with grade point averages as low as 2.75 if the last part of their college work shows significant improvement.
  - Applicants whose cumulative grade point averages do not meet minimum requirements may receive further consideration for admission by demonstrating background experience(s) that provides evidence that the applicant has the potential to successfully complete the program. The applicant must verify work or volunteer experience that demonstrates commitment to working as a professional counselor.
- Ability to clearly communicate 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 either on-campus or online using Zoom.

The applicant should view instructions for completing the application for registration as a Licensed Professional Clinical Counselor (LPCC) associate on the California Board of Behavioral Sciences (<https://www.bbs.ca.gov/>) website to understand California requirements for licensure. Applicants with significant legal histories should contact the program director before applying to the program.

Pre-entrance requirements (p. 24):

- Health clearance

## Program requirements

The curriculum for the M.S. degree in counseling is divided into two domains: Core courses and Practicum-Internship courses. Requirements for completing the 90-unit masters degree are met by registering for eight (8) units of electives. The Counseling and Family Sciences department offers two certificates - School Counseling (<http://llucatalog.llu.edu/behavioral-health/school-counseling-certificate/>) and Drug and Alcohol Counseling (<http://llucatalog.llu.edu/behavioral-health/drug-alcohol-counseling-certificate/>). Students may utilize elective units to integrate either of these certificates into their MS Counseling program. All electives must be advisor approved.

Students must maintain a grade point average of 3.0 on a 4.0 scale (or a letter grade of B) in order to progress successfully through the program and complete the degree. In addition, students must meet the knowledge, skills, and professional performance competencies outlined by the program. All course grades should meet the minimum B (3.0) standard, which by university policy indicates satisfactory performance. Courses in which a student earns a grade below a B (3.0) may need to be repeated (or may not apply to the degree) if competency in the subject area is related to practice performance with clients, and a grade less than a 3.0 represents marginal or unsatisfactory practice performance.

### Core courses

COUN 501	Research Tools and Methodology: Quantitative	3
COUN 502	Research Tools and Methodology: Qualitative	3
COUN 515	Crisis Intervention and Client Advocacy	3
COUN 524	Psychopharmacology and Medical Issues	3
COUN 528	Culture, Socioeconomic Status in Therapy	3
COUN 540	Professional Counseling Orientation	3
COUN 547	Social Ecology of Individual and Family Development	3
COUN 556	Psychopathology and Diagnostic Procedures	3
COUN 568	Groups: Process and Practice	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 580	Advanced Counseling Theory and Techniques	4
COUN 584	Advanced Child and Adolescent Development	3
COUN 604	Social Context in Clinical Practice: Gender, Class, and Race	3
COUN 614	Law and Ethics	3
COUN 624	Individual and Systems Assessment	3
COUN 638	Substance Use Disorders, Relationships, and Recovery	3
COUN 644	Child Abuse and Family Violence	3
COUN 674	Human Sexual Behavior	3
COUN 675	Dynamics of Aging	1
COUN 678	Consultation and Program Evaluation	3

### Practicum-internship courses

COUN 541	Clinical Practicum Seminar – Early Counselor Development	2
COUN 542	Clinical Internship Seminar – Spirituality	2

COUN 543	Clinical Internship Seminar – Multicultural and Cross-Cultural Interactions	2
COUN 544	Clinical Internship Seminar – Recovery-Oriented Care	2
COUN 546	Clinical Internship Seminar – Substance Use Disorder Treatment	2
<b>Religion requirement</b>		
RELR 540	Wholeness and Health <sup>2</sup>	3
<b>Electives <sup>1</sup></b>		<b>8</b>
<b>Total Units</b>		<b>90</b>

<sup>1</sup> 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.

<sup>2</sup> Fulfills service learning requirement

## Degree requirements

- A minimum of 90 quarter academic credits of graduate work, which includes credit received for core courses, elective courses, and a three-unit religion course.

## Noncourse requirements

- Residence of at least two academic years.
- A minimum grade point average of 3.0 with no course grade lower than B.
- University-required background check, TB test, annual flu vaccination and health clearance.
- Successful completion of a written comprehensive examination (taken before advancement to candidacy) and a final oral comprehensive examination (or equivalent) at the end of the program.

## Normal time to complete the program

Two [2] years (seven [7] academic quarters) – based on full-time enrollment; part time enrollments are permitted.

# Drug and Alcohol Counseling – Certificate

### Program director

Randall Walker

The Drug and Alcohol Counseling Program is offered online by the School of Behavioral Health through the Department of Counseling and Family Sciences. Students enrolled in the M.S. in marital and family therapy, M.S. in counseling, or the combination of these two programs within the Department of Counseling and Family Sciences are able to graduate with this certificate by taking one advanced course and adding four units of practicum to their program of study.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Effectively counsel individuals with substance-use disorders and their families.
2. Once licensed, apply for national certification through selected professional organizations.

3. Integrate the experience of counseling substance-using and substance-addicted populations with primary professional identity.

## Certificate examinations

Coursework is developed to assist students in meeting the requirements for certifications offered through the Association for Addiction Professionals (formerly the National Association of Alcoholism and Drug Abuse Counselors) and the American Academy of Health Care Providers in the Addictive Disorders (AAHCPAD), as well as others. Students become eligible for these master's level or higher certifications after completing professional licensure and accruing additional experience. Students should refer to credentialing requirements for specific organizations.

## Fieldwork

Students complete four quarters of fieldwork at an approved site, working with individuals with substance-use disorders and their families. Successful completion of fieldwork requires accruing 200 hours of face-to-face supervised, clinical experience (telehealth service delivery is acceptable). Fieldwork provides excellent opportunities for gaining experience in working with a substance-use-disorder population. Students will be evaluated quarterly by field placement supervisors and program faculty members. Students may complete fieldwork in placement sites with which the Department of Counseling and Family Sciences has established relationships; or, with program director approval, students may work in other settings which do not directly serve individuals with substance use disorders, but where it is determined addiction and substance use disorders are a significant focus of clinical attention.

Students participate in online practicum classes, which meet bi-weekly with program faculty. Practicum classes are synchronous and scheduled at a time convenient to most individuals within the continental United States.

## Admissions

The certificate program is open to persons enrolled in a behavioral science master's degree program or those who hold a master's degree or higher in a behavioral science discipline. Qualified individuals who have interests in substance use disorder treatment are encouraged to apply.

Applicants must meet Loma Linda University (p. 23) and the School of Behavioral Health (p. 149) admission requirements outlined in this CATALOG and give evidence of academic ability, professional comportment, and mature judgment. Applicants are screened for appropriateness to complete the certificate program and for their ability to work with substance using individuals and their families.

### Additional admission requirements include:

- A bachelor's degree from an accredited college or university.
- A University application/reapplication to this program (including students currently enrolled in another program at Loma Linda University) and meeting all requirements for application prior to admission into the certificate program.
- As part of the application essay, describe how the applicant will integrate the drug and alcohol counseling certificate into their work as a behavioral health professional, and the contributions the

applicant anticipates making to the substance use disorder treatment field as well as their profession.

- An interview via Zoom, with the program director.

Pre-entrance requirements (p. 24):

- Health clearance

## Program requirements

Required

COUN/MFAM 638 Substance Use Disorders, Relationships, and Recovery <sup>1</sup>	3
MFAM 645 Advanced Treatment Strategies – Substance Use Disorders	3
MFAM 654 Practicum in Drug and Alcohol Counseling <sup>2</sup>	4
RELR 540 Wholeness and Health	3
<b>Total Units</b>	<b>13</b>

<sup>1</sup> Online, asynchronous course

<sup>2</sup> Multiple registrations required to fulfill minimum four unit requirement. Practicums are synchronous online courses.

### Minimum required grade point average

Students must maintain a minimum grade point average of B (3.0) in all courses taken for the certificate.

### Normal time to complete the program

Four (4) academic quarters – based on part-time enrollment

## Marital and Family Therapy – M.S., D.M.F.T.

### 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 as well as other health and behavioral problems, addressing 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 counseling, social work, psychiatry, psychiatric nursing, and psychology. All 50 states also support and regulate the profession by licensing or certifying marriage and family therapists.

### Ongoing program review

The M.S. and D.M.F.T. degrees 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, results of qualifying examinations and clinical demonstrations, 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.

## Financial assistance

Students who are accepted into the M.S. or D.M.F.T. degree curriculums 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 upon the availability of funds. Students may also apply for need-based financial aid, such as a loan or other work-study programs on campus. There are also small school-based scholarships for which students may apply. Students accepted into the 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 is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), the accrediting body for the American Association for Marriage and Family Therapy (AAMFT), 112 South Alfred Street, Alexandria, Virginia 22314; telephone: 703/838-9808; email: [coa@aamft.org](mailto:coa@aamft.org).

## Program Requirements

- Marital and Family Therapy—M.S. (p. 161), D.M.F.T. (p. 165),

## Marital and Family Therapy – M.S

### Program director

Mary E. Moline

The Master of Science (M.S.) in Marital and Family Therapy Program is designed to give students an excellent clinical and academic background, based on Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) guidelines, as well as professional practice for working with individuals, couples, groups, and families in a variety of settings. The program emphasizes systemic and relational practice, and couples and family therapy. These include but are not limited to medical, legal, educational, mental health, managed care, public and private agencies, church settings, and private practice. The program is available to students online and on campus.

Students may also complete the certificate in drug and alcohol counseling (p. 160) (please consult with advisor). A separate application for the certificate program is required.



## Mission, vision, and values

The program's mission: educating marital and family therapy (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." The definition, configuration, and experience of family vary widely; students are trained to regard, respect, and value human difference and family types so as to work successfully with all who seek the services of a marital and family therapist.

The program has adopted four Loma Linda University values as central to the values of this program:

*Compassion*—Reflects the love of God with respect, mercy, and empathy.

*Integrity*—Carries out actions with honesty and trustworthiness.

*Excellence*—Provides service that exceeds expectations with effectiveness, reliability, and efficiency.

*Justice*—Commits to diversity, equity, and inclusion.

## Licensure and program accreditation

Marriage and family therapy is established by law in California as a profession requiring state licensure. Persons who desire to enter the profession must have the academic and clinical preparation, and must pass required licensing examinations. Clinical license requirements vary by state and include additional hours of supervised clinical practice beyond those hours that are completed while studying for the graduate degree. The Board of Behavioral Sciences determined that Loma Linda University's master's degree in marital and family therapy meets the Senate Bill statutory requirements for marriage and family therapy under Business and Professions Code section 4980.36 and 4980.37 ([www.bbbs.ca.gov](http://www.bbbs.ca.gov) (<https://www.bbbs.ca.gov>)).

The program offered by Loma Linda University is fully accredited by the Commission on Accreditation for Marriage and Family Therapy Education, the accrediting body for the American Association for Marriage and Family Therapy. The national commission ensures that academic and clinical training programs adhere to the highest standards of the profession.

The program is 90 quarter units. Students who want to sit for both the Licensed Professional Clinical Counselor (LPCC) and the Licensed Marriage and Family Therapist (LMFT) exams in the state of California have the option to enroll in 4 units of coursework above the 90 required units for the MFT program. These units may not be covered by financial aid. Students interested in this option should consult with the M.S. in MFT program director and the LLU Office of Financial Aid for more information.

## Conduct or disciplinary actions

Applicants should view "instruction for completing application for registration as a marriage and family intern" at the Board of Behavioral Science Examiner's website for possible issues that may prevent them from obtaining a marital and family therapy license in the state of California, or any state in which a license is sought. A person who completes a graduate degree in MFT may be denied licensure due to prior convictions. This should be clearly considered before pursuing studies or licensure.

## Clinical training

In addition to successful completion of 90 quarter units of academic coursework, students in the MFT program must complete field experience at clinical placement sites. Upon completion of 18 quarter units, the student will be evaluated by the teaching faculty to determine if they will continue the program and be permitted to enter the program's clinical phase. Students have numerous choices of placement sites 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. Clinical training includes a seven-quarter practicum sequence and supervision of trainees at a clinical site.

Students must complete the minimum requirements for clinical hours as established by COAMFTE, the program's national accrediting body. To meet this requirement, students must complete clinical hours that are relational (e.g. with couples and/or families) prior to graduation. Students must also receive live supervision of their clinical hours prior to graduation. All clinical hours must occur over a minimum of twelve months of clinical practice.

- 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 *MFT 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 at least 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 Fall, Winter, Spring, and Summer Quarters. First-year students most often 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 training experiences are usually on days students are not in class. In order to participate in the June commencement exercises, students must complete all program requirements, including coursework and clinical training.

## Financial assistance

Students accepted into the Marital and Family Therapy 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. On a limited basis, students receive financial assistance during their clinical traineeships. For further information regarding application for financial aid and financial aid options, please contact:

Student Financial Aid Office  
Student Services  
Loma Linda University  
Loma Linda, CA 92350  
909/558-4509



## Educational outcomes

The program's educational outcomes include program outcomes and student learning outcomes. These are congruent with the missions of the University and the program, and are appropriate to the profession of marriage and family therapy.

### Program goals

Program goals integrate the University's commitment to diversity and quality training of health-care professionals, with the need for diverse master's degree-level practitioners in the field of MFT. These outcomes follow:

1. 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.
2. Maintain a 75 percent or higher graduation rate.
3. Provide a learning environment and resources that allow students to collaborate with other health-care providers and multiple community services or contexts.
4. Graduate a diverse student population prepared to practice in the field of marriage and family therapy.

### Program learning outcomes

The University emphasizes whole-person care. Each of the six program learning outcomes for the M.S. 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. By the end of this program, the graduate should be able to:

1. Identify as a systemic MFT therapist and apply systemic perspective in clinical practice.
2. Apply clinical language and practices in a variety of MFT therapies that enable them to work with diverse populations within a multidisciplinary context.
3. Analyze and present a clinical case using one of the major MFT models.
4. Demonstrate awareness of contextual issues in therapy such as gender, religion/spirituality, sexual orientation, age, and socioeconomic status.
5. Apply legal and ethical standards relevant to the field of marital and family therapy to their clinical practice.
6. Apply for internship status and subsequent licensure as an MFT professional aligned with practice standards.

The M.S. degree in marital and family therapy engages in ongoing review of program outcomes and uses this information to improve program effectiveness. Data on program outcomes are collected through aggregate scores on quarterly evaluations of clinical competency as well as 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. Program faculty also maintain 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 fully accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COMAFTE), the accrediting body for the American Association for Marriage and Family Therapy (AAMFT). The next renewal is 2025. The national commission functions to ensure academic and clinical training programs adhere to the highest standards of the profession. They may be contacted at 112 South Alfred Street, Alexandria, VA 22314-3061; telephone: 703/838-9808; email: [coamfte@aamft.org](mailto:coamfte@aamft.org).

## Admissions

In addition to Loma Linda University (p. 23) admissions requirements, admission to the on-campus and online M.S. in Marital and Family Therapy Program are governed by the policies and procedures established by the School of Behavioral Health (p. 149).

Additional admission requirements include:

- A bachelor's degree from an accredited university or college. The department assesses the liberal arts preparation of each of its applicants in the balance of coursework, in three liberal arts (see Liberal Arts Preparation).
- At least three letters of recommendation from an academic or employment source.
- Meet the minimum academic and professional compatibility criteria established by the program.
- A cumulative grade point average of 3.0 or above (on a 4.0 scale) in bachelor's coursework.
  - Applicants with grade point averages as low as 2.75 may be considered if the last 45 quarter credits (30 semester units) of coursework are 3.0 or higher or if they have additional attributes that demonstrate preparedness and an appropriate fit for marital and family therapy education. They may submit verified work and volunteer experiences that provide evidence for the potential to successfully complete the program. Employer/supervisor verification statements must be submitted 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 careers in marriage and family therapy.
  - Those admitted to the M.S. in Marital and Family Therapy with a cumulative G.P.A. below 3.0 will be required to participate in an individualized academic assessment and a targeted learning assistance program.
- Interviews are scheduled with department faculty members. On-campus group interviews are scheduled during Fall, Winter, Spring and Summer quarters, while on-campus and telephone interviews are scheduled individually.
- 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
  - congruent with the values and mission of Loma Linda University
  - critical thinking ability

- comfort/willingness to work with people from diverse backgrounds, language, culture and abilities
- intuitive judgment & skill, talent, and self-awareness
- understanding of the field
- commitment to the field

No academic credit is given for life experiences or previous work experience for any part for the Marriage and Family Therapy degree program. Admission is granted to the on-campus program in autumn, winter, and spring quarters. The online program entry term is autumn quarter only.

Pre-entrance clearance (p. 24):

- Health clearance

## Program requirements

A grade of B or better indicates that a student has mastered the knowledge, skill, and professional practice performance competencies outlined by the program. In order to progress successfully and complete the degree, students must meet both course and cumulative G.P.A. standards. The University allows students to repeat two courses per degree. Course repeat expectations set by the School of Behavioral Health may be found in the general regulations (p. 149) section of this CATALOG.

### Foundations of relational/systemic practice, theories & models

MFAM 551	Family Therapy: Foundational Theories and Practice	3
MFAM 553	Family Systems Theory	3
MFAM 564	Family Therapy: Advanced Foundational Theories and Practice	3

### Clinical treatment with individuals, couples and families

MFAM 515	Crisis Intervention and Client Advocacy	3
MFAM 552	Couples Therapy: Theory and Practice	3
MFAM 638	Substance Use Disorders, Relationships, and Recovery	3
MFAM 644	Child Abuse and Family Violence	3
MFAM 674	Human Sexual Behavior	3

### Diverse multicultural and/or underserved communities

MFAM 528	Culture, Socioeconomic Status in Therapy	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

### Research and evaluation

MFAM 501	Research Tools and Methodology: Quantitative	3
MFAM 502	Research Tools and Methodology: Qualitative	3

### Professional identity, law, ethics & social responsibilities

MFAM 614	Law and Ethics	3
MFAM 635	Case Presentation and Legal Issues	3

### Biopsychosocial health and development across the life span

COUN 675	Dynamics of Aging	1
MFAM 547	Social Ecology of Individual and Family Development	3
MFAM 584	Advanced Child and Adolescent Development	3

### Systemic/relational assessment and mental health diagnosis and treatment

MFAM 524	Psychopharmacology and Medical Issues	3
MFAM 556	Psychopathology and Diagnostic Procedures	3
MFAM 624	Individual and Systems Assessment	3

### Contemporary issues

Select from the following:		
CFSD 540	Introduction to Medical Family Therapy	
CFSD 544	Health and Illness in Families	
COUN 579	Career Theories and Applications	
COUN 574	Educational Psychology	
COUN 575	Counseling Theory and Applications	
COUN 576	Exceptional and Medically Challenged Children	
COUN 577	Assessment in Counseling	
COUN 678	Consultation and Program Evaluation	
COUN 680	Field Experience in Counseling	
MFAM 516	Play Therapy	
MFAM 539	Solution-Focused Family Therapy	
MFAM 549	Christian Counseling and Family Therapy	
MFAM 555	Narrative Family Therapy	
MFAM 559	Cognitive-Behavioral Couples Therapy	
MFAM 605	Gestalt Family Therapy	
MFAM 606	Emotionally Focused Couples Therapy	
MFAM 645	Advanced Treatment Strategies – Substance Use Disorders	
MFAM 654	Practicum in Drug and Alcohol Counseling	
MFAM 665	Structural and Multidimensional Family Therapy	
MFAM 694	Directed Study: Marriage and Family	

### Community intersections and collaboration

MFAM 535	Case Presentation and Professional Studies	3
MFAM 536	Case Presentation and Documentation	3
MFAM 537	Case Presentation	3
MFAM 636	Case Presentation and Client-Centered Advocacy	3
MFAM 637	Case Presentation and Global Practices	3
MFAM 731	Clinical Training <sup>1</sup>	
MFAM 732	Clinical Training <sup>1</sup>	
MFAM 735	Case Presentation Extension	0

### Religion

RELR 540	Wholeness and Health <sup>2</sup>	3
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### Group

MFAM 568	Groups: Process and Practice	3
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**Total Units** **90**

<sup>1</sup> 700-numbered courses do not count toward total didactic units required for the degree

<sup>2</sup> Fulfills service learning requirement

## Degree requirements

Requirements for the M.S. degree in marital and family therapy from Loma Linda University include the following:

- A minimum of 90 quarter units of graduate work, which includes credit received for core courses, electives, and a three-unit religion course.
- Clinical training in marriage and family therapy - students are required to complete the minimum clinical training requirements established by COAMFTE including relational client contact hours 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 MFT 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).

### Normal time to complete the program

Two (2) years (seven [7] academic quarters) – based on full-time enrollment

## Marital and Family Therapy – D.M.F.T.

### Program director

Nichola Seaton Ribadu

The Doctor of Marital and Family Therapy (D.M.F.T.) program is the only online D.M.F.T. program in the United States that is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE). The program is fully online, and online delivery utilizes synchronous and asynchronous formats.

The curriculum adopts the practitioner-administrator-evaluator approach and focuses on applied skill development for use in clinical practice and administrative positions. 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. Graduates of the D.M.F.T. program use a multicultural lens and are well-prepared to serve as ethically competent leaders who advance the marital and family therapy profession. Alumni most often work as program directors, grant proposal writers, program evaluators, advanced clinicians, and clinical supervisors. Some alumni also serve in university settings as faculty members and adjunct professors.

The 77-unit D.M.F.T. degree curriculum requires a minimum of three years of full-time study for completion. This includes coursework, a doctoral project, and supervised professional development experiences.

## 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. 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. They are also 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 as it relates to the practice of marital and family therapy interventions and program activities at 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. Since it is COAMFTE-accredited, the D.M.F.T. program offers students the opportunity to complete the requirements for becoming AAMFT-approved supervisors prior to graduation. Students are responsible for ensuring they are following the AAMFT Approved Supervisor application processes and submitting their application directly to AAMFT. The application is not a requirement of the D.M.F.T. program.

### Evaluation skills

Students will develop skills and understanding of the process of applied 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. students will focus on evaluation of program performance and outcomes in practice-based settings.

## Program goal and outcomes

The goal of the D.M.F.T. program is to prepare doctoral-level marital and family therapists to serve as program developers, as well as evaluators/administrators, who will promote the health and well-being of individuals, families, and communities. This goal works in combination with the larger University mission of advancing health services that attend to the whole person by developing practiced-based knowledge in marriage and family therapy.

There are two overall program outcomes. These outcomes integrate the University's commitment to diversity and quality training of health-care professionals with the need for diverse doctoral-level practitioners skilled in program development/evaluation and administration. The program outcomes are:

1. Graduating a diverse student body prepared to advance the field of marriage and family therapy through practice-based leadership, founded on the consumption of current and reliable research.
2. Preparing doctoral-level family therapy professionals to apply the systemic/relational principles of the field to develop, evaluate, and administer ethically competent programs that contribute to MFT practice.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Develop a professional identity as a doctoral-level marital and family therapist aligned with national practice standards.
2. Become adept in systems/relational practice, demonstrating sophistication as a therapist, program developer, evaluator, and administrator of marital and family therapy services.
3. Use marital and family therapy, human development, and family science literatures to design and evaluate programs, clinical protocols, organizational structures, and service-delivery processes.
4. Further benefit families and communities by demonstrating the ability to use research and evaluation methodologies to improve human service program performance and outcomes.
5. Be responsive to the societal, cultural, and spiritual contexts in which health and well-being are embedded.
6. Develop an ethical consciousness that guides their practice in all aspects of professional work.

## 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 ensures that 60 percent of doctoral academic credit will be earned at Loma Linda University, while enabling cooperative relationships with other accredited programs.

### Guidelines

Advanced standing may be granted for previous coursework, equivalent in content and scope to required counseling and family sciences courses. This reduces the number of units to be taken at this University. Determination of advanced standing is based on the following guidelines:

1. Residency requirements.
  - a. Doctoral degree. Advanced standing may not reduce total units below 47 units for the Doctor of Marital and Family Therapy (D.M.F.T.) degree.
2. Determination of equivalency.
  - a. Credits applied to advanced standing must be graduate-level courses earned at an accredited institution. No credit may be applied for grades lower than a "B."
  - b. Students seeking advanced standing based upon units earned at other institutions will be evaluated on a case-by-case basis in accordance with COAMFTE standards.
  - c. Advanced standing is not granted for religion courses.
  - d. Doctoral courses taken more than seven years prior to enrollment as a student in the Department of Counseling and Family Sciences 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 in the field.
3. Approval process.

Students seeking advanced standing should meet with their program director prior to admission or within the first two quarters of study, supplying copies of each syllabus of prior coursework. Following the course review, the student will initiate an academic variance specifying the coursework and/or work experience, with

documentation of coursework and experience for every course submitted for advance standing.

## Financial assistance

Students who are accepted into the 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 upon 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 may also apply for the School of Behavioral Health-based scholarships offered each year. Students accepted into the D.M.F.T. degree curriculum in marital and family therapy are eligible for and encouraged to apply for the AAMFT minority fellowships. Visit <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

[finaid@llu.edu](mailto:finaid@llu.edu)

## Accreditation

The Doctor of Marital and Family Therapy degree program is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), the accrediting body for the American Association for Marriage and Family Therapy (AAMFT), 112 South Alfred Street, Alexandria, Virginia 22314; telephone: 703/838-9808; email: [coa@aamft.org](mailto:coa@aamft.org).

## Admissions

Applicants must meet Loma Linda University (p. 23) and School of Behavioral Health (p. 149) admissions requirements; and provide 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:

- Clinical master's degree in Marital and Family Therapy, or clinical counseling. The master's degree must be a qualifying degree for licensure in the applicant's state of residence.
- Grade point average (3.3 minimum).
- Structured oral interview with department faculty (virtual group interview).
- Three letters of reference (two academic and one professional preferred).

Pre-entrance clearance (p. 24):

- Health clearance.

Anti-discrimination policy (<http://behavioralhealth.llu.edu/programs/counseling-and-family-sciences/dmft-marital-and-family-therapy/>)



In the department of Counseling and Family Sciences, we adhere to University policy (p. 12) and do not discriminate against anyone on the basis of socioeconomic or relationship status.

## Program requirements

### Theory and practice

CFSD 504	Advanced Theory in Marital and Family Therapy	4
CFSD 506	Foundations of Systems Thinking: Theory and Application	3
CFSD 519	Teaching in Higher Education	3
CFSD 546	Multicultural and Global Mental Health <sup>3</sup>	3
CFSD 634A	Practicum in Couple and Family Therapy	3
CFSD 634B	Practicum in Couple and Family Therapy	3
CFSD 634C	Practicum in Couple and Family Therapy	3

### Supervision

CFSD 501	Fundamentals of Supervision in Marital and Family Therapy	3
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### Program development and administration

CFSD 524	Marital and Family Therapy Administration: Organizational Structure, Process and Behavior	3
CFSD 526	Advanced Marital and Family Therapy Assessment	3
CFSD 555	Organizational Development and Change	3
CFSD 624	Program Development for Families and Communities	3
CFSD 625	Grant Writing	3
CFSD 626	Program Design, Evaluation and Monitoring	3

### Spirituality

RELE 5__	Graduate-level ethical studies elective	3
RELR 5__	Graduate-level relational studies elective	3
RELT 5__	Graduate-level theological studies elective	3

### Research

CFSD 545	Research and Practice with Couples and Families	3
CFSD 605	Advanced Quantitative Methods	3
CFSD 611	Qualitative Research Methods I	4
CFSD 627	Statistical Analysis for Program Evaluation	3

### Doctoral project

CFSD 695	Project Research	12
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**Total Units** **77**

### Professional development and practice <sup>2</sup>

CFSD 786	Professional Development Proposal	0
CFSD 786A and 786B total combined units <sup>1</sup>		36
CFSD 786A	Professional Development Doctoral Portfolio	
CFSD 786B	Professional Internship in Couple and Family Therapy	

**Total Units** **36**

<sup>1</sup> Course repeated to fulfill total unit requirement

<sup>2</sup> 700-numbered courses do not count in total didactic units required for the degree

<sup>3</sup> Fulfills service learning requirement

## Noncourse requirements

Doctoral degrees in Marital and Family Therapy will be awarded when students have completed all required coursework and the following non-course requirements:

- Professional development consistent with leadership in the field of marriage and family therapy. Activities can include, but are not limited to, teaching in higher education, supervision of MFT trainees, advanced clinical training, MFT administration, grant writing, and research.
- A written qualifying examination.
- An oral defense of the doctoral project.

## Normal time to complete the program

Three (3) years (eleven [11] academic quarters) – based on full-time enrollment

## School Counseling – Certificate

### Program director

Randall Walker

Admissions are limited to students enrolled in a degree program in the Department of Counseling and Family Sciences.

The School Counseling Program certificate qualifies a graduate for the California Pupil Personnel Services (PPS) credential in school counseling. Students pursuing the M.S. degree in counseling or the M.S. in marital and family therapy may integrate the school counseling certificate into their degree program.

The School Counseling certificate program is designed in accordance with the department's vision of transforming relationships. Faculty members 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.

## 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 PreK-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 website at <http://www.ctc.ca.gov>. All candidates admitted to the certificate program on or after July 1, 2022 will be required to meet the new standards.

## Practicum and field experience

Field experience requirements for the certificate program include 100 hours of pre-field practicum followed by 800 hours of field experience.<sup>1</sup> For students in a clinical master's degree program, pre-field hours are met earlier through clinical placements. In addition, 200 of the



required 800 hours of school counseling field experience can be elective hours from clinical training. The remaining 600 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).

## 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). The student's choice of elective courses will dictate any out-of-pocket cost required for the certificate. Students who are pursuing the School Counseling certificate will be provided with academic advising regarding electives in an effort to reduce out-of-pocket costs to the student.

## Program learning outcomes

By the end of this program, the graduate should be able to:

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 800 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 WASC Senior College and University Commission (WSCUC), 985 Atlantic Avenue, Suite 100, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wascsenior.org/contact> (<http://www.wascsenior.org/contact/>). 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). The next Commission visit occurs during the 2023-24 academic year. Additional PPS information can be obtained by going to the CTC website at <http://www.ctc.ca.gov/>.

## Admissions

Applicants wishing to pursue the school counseling certificate program apply online through the LLU Admissions Portal. Students pursuing the M.S. degree in Counseling or the M.S. degree in Marital and Family Therapy must complete the standard online application to enroll in the School Counseling certificate program and are advised to consult with the program director prior to initiating application.

As with all programs in the School of Behavioral Health, applicants must meet Loma Linda University (p. 23) and School of Behavioral Health (p. 149) admissions requirements; and give evidence of academic ability, professional comportment, and mature judgment. Applicants, who meet these requirements as well as the published application deadlines for the following terms, may be admitted during summer, autumn, winter, or spring quarters. Students intending to complete the school counseling

certificate during either their counseling or MFT M.S. program must apply and be accepted into the program before the finish of their first quarter in the master's program. Additional admission requirements include:

- Candidate pursuing a qualifying M.S. degree.
- Minimum grade point average of 3.0 (on a 4.0 scale) in bachelor's coursework for at least the final 45 units prior to graduation, or minimum of 3.0 grade point average in master's degree program.
- Three letters of recommendation (two letters for students already admitted to the department master's degree program).
- A written personal statement that addresses career objectives, personal interest in the school counseling profession, the rationale for choosing to attend Loma Linda University, how life experiences have influenced the applicant's choice to enter professional school counseling, and additional thoughts the applicant deems appropriate.
- Interview with the program director and department faculty as scheduled.

## California Test of Basic Skills (CBEST)

Applicants to the school counseling certificate must take and pass all sections of the California Basic Educational Skills Test (CBEST) or meet the basic skills requirement as detailed in the Commission on Teacher Credentialing (CTC) publication CL-667<sup>1</sup> prior to admission to the program.

Pre-entrance clearance (p. 24):

- Health clearance

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<sup>1</sup> [https://www.ctc.ca.gov/credentials/leaflets/basic-skills-requirement-\(cl-667\)](https://www.ctc.ca.gov/credentials/leaflets/basic-skills-requirement-(cl-667))

## Program requirements

The curriculum for the School Counseling Program may be taken with the M.S. degree in counseling (p. 158), qualifying the student for the PPS credential; or combined with the requirements for the M.S. degree in marital and family therapy (p. 161). Enrollment in the PPS program is currently restricted to candidates in one of these two master's degree programs within the Counseling and Family Sciences department—counseling, or marital and family therapy.

Students must maintain a minimum grade point average of B (3.0) in all courses taken for the certificate.

## Degree and certificate requirements

The School Counseling Program certificate may be included with the M.S. Counseling degree or the M.S. MFT degree at Loma Linda University. A separate application is required for consideration and admission into the school counseling certificate program. 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 M.S. degree and certificate requirements are completed. This applies to students pursuing the M.S. degree in counseling or the M.S. degree in marital and family therapy. Required courses for the certificate/credential program are listed below.

## 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.

### 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 <sup>1</sup>	4
RELR 540	Wholeness and Health	3
<b>Field experience <sup>2</sup></b>		
COUN 781	School Counseling Field Experience (PPS)	4
COUN 782	School Counseling Field Experience (PPS)	4
<b>Total Units</b>		<b>29</b>

<sup>1</sup> Course to be taken a minimum of two times

<sup>2</sup> When combining the PPS school counseling certificate/credential program with a clinical master's, only COUN 781 School Counseling Field Experience (PPS) and COUN 782 School Counseling Field Experience (PPS) are required. 700-numbered courses do not count toward minimum didactic units required for the certificate.

## Normal time to complete the program

1 year (four [4] academic quarters) – based on full-time enrollment; part-time permitted

## Systems, Families, and Couples—Ph.D.

### Program director

Zephon Lister

The Ph.D. degree in systems, families, and couples follows the scientist-practitioner model in which students are expected to develop expertise in research, teaching, and professional practice. The three-to-four year, 92-unit curriculum includes two years of coursework, professional development and clinical practice leading to licensure or certification, and one year of supervised dissertation experience. The purpose of the curriculum is to develop family science scholars and practitioners who will advance theory, research, practice, and teaching in the fields of couple and family therapy and family social science. Students will be prepared for academic, professional, and clinical positions in universities, community mental health, and medical settings. Ph.D. students develop expertise in conducting original research using quantitative, qualitative, and mixed-method approaches; teaching in academic and community settings; and advanced clinical practice.

## Ph.D. degree program

The core academic curriculum is composed of 53 units of coursework in the areas of research, theory and practice. Students also take 9 units of religion. Students will then choose 18 elective units from the following content areas: (1) MFT Clinical Supervision, (2) Medical Family Therapy, (3) Advanced Clinical Practice, and (4) Community Mental Health.

The *MFT Clinical Supervision* electives fulfill the educational and practice requirements to become an AAMFT-approved supervisor.

The *Medical Family Therapy* electives provide the education, clinical training, and practical experiences to work in inpatient, intensive outpatient, hospital, and outpatient health-care settings.

*Advance Clinical Practice* electives provide students the opportunity to further develop their clinical awareness and skills in the areas of social context, self of the therapist, and the integration of spirituality into the clinical practice.

The *Community Mental Health* electives focus on areas of skill development for community mental health practice including program development and evaluation as well as organizational development, assessment, and administration.

## Knowledge and skills promoted

### Theory

Students study the work of original thinkers in systems, families, and couples; as well as the most recent developments within the fields of family studies and family therapy. They develop a critical understanding of the theoretical and philosophical foundations of the field, critically examine the interplay between the biopsychosocial-spiritual dimensions of relationships, become conversant in the current issues in the field of family science, and contribute to the discourse regarding them. Students will use this knowledge to advance the fields of family therapy and family studies.

### Research skills

Students develop skills and a critical understanding of the process of research and evaluation related to families and interventional work. A scientist-practitioner model is used to equip them with the ability to develop, consume, and apply research in professional practice. Students will develop expertise in social science statistical analysis; quantitative, qualitative, and mixed-method research methodologies; and grant writing.

### Teaching skills

The program provides experiential and didactic training for teaching in higher education and community settings. Through didactic training, students will be exposed to current trends and best practices in teaching. Students will examine various teaching and learning paradigms with the intention of helping them develop their own epistemology and philosophy of teaching. They will test and grow this epistemology through experiential training as they assist with courses (e.g., develop syllabi, lecture, and assignments) under the supervision of a faculty member. Students will be given opportunities to assist, facilitate, or co-facilitate courses on their own.

### Practice and supervisory skills

Students will apply a critical understanding of theory and research to work with couples and families, larger communities, and organizations. They will develop an in-depth understanding of clinical theory and its application to clinical practice. Advanced supervised clinical training and

family life education opportunities will be provided throughout the course of the program. Additionally, students in the couples and family therapy specialty will develop skills as an AAMFT-approved clinical supervisor.

## 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 epistemological frameworks and ethical consciousness to guide their research and practice. They are encouraged to engage beyond their local community to include experiences in wider cultural, social, and global contexts.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Analyze, synthesize, apply, and critique theories of human development and family therapy/family science to advance and integrate theory into research and practice in the field.
2. Demonstrate knowledge and skills as a researcher in the field of marital and family therapy/family science through research, professional publication, and presentation.
3. Demonstrate competency in teaching and supervision within academic and community settings.
4. Become adept in systems/relational practice, demonstrating sophistication as a scientist/practitioner (only applies to CFT specialty).
5. Develop a professional identity as doctoral-level family therapists/educators aligned with national practice standards, demonstrating service and professionalism through professional and community involvement.
6. Be responsive to the societal, cultural, and spiritual contexts in which health and well-being are embedded.
7. Be proficient in the legal guidelines of the marital and family therapy/family life education fields, and develop an ethical consciousness that guides their practice in all aspects of professional work.

## Financial assistance

For information regarding funding opportunities, see Student Aid (p. 42) in the financial policies section of this CATALOG.

Students who are accepted into the Ph.D. degree in systems, families, and couples 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 upon the availability of funds.

## Accreditation

The Ph.D. degree program in systems, families, and couples is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), the accrediting body for the American Association for Marriage and Family Therapy (AAMFT), 112 South Alfred Street, Alexandria, Virginia 22314; telephone: 703/838-9808; email: [coa@aaamft.org](mailto:coa@aaamft.org).

## Admissions

Applicants must meet Loma Linda University (p. 23) and School of Behavioral Health (p. 149) 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:

- Master's degree in clinical mental health field
- Grade point average (3.3 minimum)
- Structured oral interview with department
- Three letters of reference (two academic and one professional)
- GRE scores (taken within the past five years). Due to issues associated with the COVID-19 pandemic, the GRE General Test is waived for all 2021-2022 applicants to doctoral programs in the School of Behavioral Health. Please do not submit GRE scores through ETS or report your scores in any application materials as they will not be taken into consideration.
- Curriculum vitae (preferred, but not required)

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 and/or Family Life Education skills

Pre-entrance clearance (p. 24):

- 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. See required master level courses.

Theoretical knowledge in family systems/relational therapy or family science	8
Clinical knowledge in marital and family therapy or family life education	16
Individual development and family relations	8
Additional study in the three areas above	4
Professional issues and ethics in marital and family therapy or family studies	4
Research	4
Additional related study	4
<b>Total Units</b>	<b>48</b>

A grade of B or better indicates a student has mastered the knowledge, skill, and professional practice performance competencies outlined by the program. In order to progress successfully and complete the degree, students must meet both course and cumulative G.P.A. standards. The University allows students to repeat two courses per degree. Course repeat expectations set by the School of Behavioral Health may be found in the general regulations section of this CATALOG.

## Curriculum

### Theory and practice

CFSD 504	Advanced Theory in Marital and Family Therapy	4
CFSD 505	Advanced Family Studies: Theory Construction	3
CFSD 506	Foundations of Systems Thinking: Theory and Application	3
CFSD 519	Teaching in Higher Education	3
CFSD 544	Health and Illness in Families (or additional elective if taken during master's degree)	3
CFSD 546	Multicultural and Global Mental Health <sup>3</sup>	3
CFSD 565	Neurobiology of Relationships, Stress and Trauma: Family Science Applications	3

### Research

CFSD 545	Research and Practice with Couples and Families	3
CFSD 601	Statistics I	4
CFSD 602	Statistics II	4
CFSD 603	Statistics III	4
CFSD 605	Advanced Quantitative Methods	3
CFSD 606	Issues in Family Research	3
CFSD 611	Qualitative Research Methods I	4
CFSD 612	Qualitative Research Methods II	3
CFSD 625	Grant Writing	3

### Electives 18

Choose one of the following specialty areas

#### MFT Clinical Supervision

CFSD 501	Fundamentals of Supervision in Marital and Family Therapy
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#### Medical Family Therapy

CFSD 540	Introduction to Medical Family Therapy <sup>4</sup>
CFSD 548	Family Therapy and Medicine
CHLS 506	Therapeutic Play for Children Affected by Illness and Injury <sup>4</sup>
CHLS 508	Grief and Loss <sup>4</sup>

#### Advance Clinical Practice

CFSD 634A	Practicum in Couple and Family Therapy
CFSD 634B	Practicum in Couple and Family Therapy
CFSD 634C	Practicum in Couple and Family Therapy

#### Community Mental Health

CFSD 526	Advanced Marital and Family Therapy Assessment
CFSD 555	Organizational Development and Change
CFSD 624	Program Development for Families and Communities
CFSD 626	Program Design, Evaluation and Monitoring

### Spirituality

RELE 5__ or above	3
RELR 5__ or above	3
RELT 5__ or above	3

### Dissertation

CFSD 698	Dissertation Research <sup>1</sup>	12
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### Total Units 92

### Professional development<sup>2</sup>

CFSD 786	Professional Development Proposal	0
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MFTH 786A and 786B total combined units 36

CFSD 786A	Professional Development Doctoral Portfolio <sup>1</sup>
CFSD 786B	Professional Internship in Couple and Family Therapy <sup>1</sup>

**Total Units 36**

<sup>1</sup> Course repeated to fulfill total unit requirement

<sup>2</sup> 700-numbered courses do not count in total didactic units required for the degree

<sup>3</sup> Fulfills service learning requirement

<sup>4</sup> If not taken during master's degree

## Noncourse requirements

Doctoral degrees in systems, families and couples will be awarded when students have completed all the required coursework and the following non-course requirements:

- 300 approved client contact hours (applies to students who choose the clinical requirement as part of their professional development portfolio).
- 200 approved hours of clinical supervision (applies to students completing AAMFT Approved Supervisor certification).
- Professional developmental portfolio criteria A (see program handbook for details) or written qualifying examination.
- An oral defense of the doctoral dissertation.

## Normal time to complete the program

Three (3) to four (4) years (13 academic quarters) – based on full-time enrollment

## Additional required courses for MFT licensure in California

Students entering the Ph.D. program without a COAMFTE accredited master's degree, who wish to obtain licensure in California, will be required to meet the course requirements of the M.S. in Marital & Family Therapy (p. ) program. A course-by-course evaluation will be done to determine which courses in the student's previous master's degree program fulfill specific course requirements for California licensure.

## 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 and motto of Loma Linda University and Loma Linda University Medical Center are "to continue the teaching and healing ministry of Jesus Christ to make man whole." This mission and motto, 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 seeks to advance the institutional mission, both nationally and internationally, through academic, research, and practice activities related to behavioral health.

Loma Linda University Health 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.

### Academic writing support

Students who need assistance can contact their program director to arrange for individual support.

### Psychology M.A. degree eligibility

As part of the overall doctoral program, a master's degree in psychology—based on the successful completion of coursework for the degree—is available for students enrolled in the Ph.D. or Psy.D. degree program. Eligibility for the M.A. degree requires student to complete 52 units of coursework and to formally apply, by submitting the required forms, for the degree. The Department of Psychology does not admit students to an M.A.-only degree program. The M.A. degree is not formally awarded at commencement and students do not participate in graduation exercises.

A complete list of part-time and voluntary faculty can be viewed on the department website: <http://www.llu.edu/behavioral-health/psychology/>.

#### Chair

David A. Vermeersch

#### Primary faculty

Hector M. Betancourt

Maya M. Boustani

Kendal C. Boyd

Colleen A. Brenner

Patricia Flynn

Richard E. Hartman

Grace J. Lee

Holly E.R. Morrell

Aarti R. Nair

Cameron L. Neece

Bridgette Peteet

Tori R. Van Dyk

David A. Vermeersch

#### Secondary and adjunct faculty

Adam L. Arechiga

Richelin Dye

Helen Hopp Marshak

Kelly R. Morton

Jason E. Owen

#### Emeritus faculty

Louis E. Jenkins

Janet Sonne

Alvin J. Straatmeyer

#### Emeritus associated faculty

Jerry W. Lee

## Programs

- Psychology — Psy.D. (p. 174), Ph.D. (p. 172), Comparison (p. 177)

## Psychology — Ph.D.

#### Director of clinical training

Holly Morrell

The APA-accredited Ph.D. 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 (approximately 24 quarters of full-time enrollment).

### Program learning outcomes:

By the end of the program, the graduate should be able to:

1. Show an advanced understanding of the science of psychology.
2. Demonstrate skills for conducting independent and original research.
3. Function as a highly competent clinician for whom research and practice constantly inform each other.
4. Integrate whole-person care into clinical work.
5. Consistently engage in activities that promote lifelong learning.

## Curriculum

The Ph.D. clinical degree program requires completion of coursework 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.

All students are required to complete a specified number of elective units for the completion of their degree. The department offers elective coursework in specialty areas such as clinical health psychology, neuroscience and neuropsychology, clinical child psychology, social/cultural health psychology, and psychology of religion 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. A list of pre-determined concentrations can be found on the departmental website (<https://behavioralhealth.llu.edu/academics/psychology/>). If students wish to create a unique concentration, they must submit a formal proposal to the Department of Psychology Academic Affairs Committee indicating the proposed 12 elective units to use toward the completion of their professional concentration, as well as the proposed title of the professional concentration. The Department of Psychology Academic Affairs Committee will consider each proposal individually in making a recommendation to support/not support the proposed concentration.

Under certain circumstances and upon recommendation of the Department of Psychology Academic Affairs Committee, students may adjust courses or numbers of units taken during the current and subsequent academic year(s) to best fit their program requirements. Also, upon such recommendation, students will be permitted to move forward as members of the cohort with which they enrolled.

## 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 First Street, NE, Washington, DC 20002  
telephone: 202/336-5979; email: [apaaccred@apa.org](mailto:apaaccred@apa.org); website: <https://www.accreditation.apa.org/>. (<http://www.apa.org/ed/accreditation/>)

## Admissions

In addition to Loma Linda University (p. 23) and School of Behavioral Health (p. 149) 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 an accredited college or university.
- *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 35<sup>th</sup> percentile. Only the most current GRE scores are admissible (exam must have been taken within the last five years and the most recent dated exam will be considered). The GRE psychology subject examination is not required. Due to issues associated with the COVID-19 pandemic, the GRE General Test is waived for all 2021-2022 applicants to doctoral programs in the School of Behavioral Health. Please do not submit GRE scores through ETS or report your scores in any application materials as they will not be taken into consideration.
- *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 preferred 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 their 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 <sup>1</sup>	2
PSYC 545	Cognitive Foundations <sup>1</sup>	4
PSYC 551	Psychobiological Foundations <sup>1</sup>	4
PSYC 564	Foundations of Social and Cultural Psychology <sup>1</sup>	4
PSYC 575	Foundations of Human Development <sup>1</sup>	4
PSYC 591	Colloquia (One unit each year for three years; one unit for M.A.) <sup>1</sup>	3

### Core Curriculum II: Quantitative psychology research methodology

PSYC 501	Advanced Statistics I <sup>1</sup>	4
PSYC 502	Advanced Statistics II <sup>1</sup>	4
PSYC 503	Advanced Multivariate Statistics (required only for M.A. of students pursuing the Ph.D.) <sup>1</sup>	4
PSYC 505	Research Methods in Psychological Science <sup>1</sup>	4
PSYC 511	Psychometric Foundations <sup>1</sup>	3

### Core Curriculum III: Wholeness

PSYC 526	Ethics and Legal Issues in Clinical Psychology <sup>1</sup>	3
PSYC 554	Health Psychology <sup>1</sup>	4
PSYC 567	Human Diversity	3
RELE 5__	Graduate-level ethics	3
RELR 540	Wholeness and Health <sup>1,5</sup>	3
RELT 530	Spirituality and Clinical Psychology	3

### Clinical psychology: General

PSYC 555	Psychopharmacology	2
PSYC 571	Adult Psychopathology <sup>1</sup>	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
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PSYC 581L	Evidence-Based Psychological Practice I (Laboratory)	1
PSYC 582	Evidence-Based Psychological Practice II	2
PSYC 582L	Evidence-Based Psychological Practice II (Laboratory)	1
PSYC 583	Evidence-Based Psychological Practice III	2
PSYC 583L	Evidence-Based Psychological Practice III (Laboratory)	1
PSYC 584	Evidence-Based Psychological Practice IV	2
PSYC 584L	Evidence-Based Psychological Practice IV (Laboratory)	1

**Elective**Possible electives include, but are not limited to: <sup>2</sup> 18

PSYC 566	Cultural Psychology	
PSYC 604A	Advanced Topics in Multivariate Analyses I	
PSYC 604B	Advanced Topics in Multivariate Analyses II	
PSYC 676	Geropsychology <sup>3</sup>	
PSYC 681L	Clinical Supervision and Consultation Laboratory	
PSYC 683	Management and Professional Practice	
PSYC 684	Human Sexual Behavior and Treatment <sup>3</sup>	
PSYC 685	Drug Addiction and Therapy <sup>3</sup>	
PSYC 686	Child, Partner, and Elder Abuse <sup>3</sup>	
PSYC 694	Seminar in Advanced Topics in Psychology	
PSYC 795	Directed Clinical Experience <sup>4</sup>	

**Research**

PSYC 697	Ph.D. Doctoral Research (1-4)	51
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**Total Units** 157**Clinical practice** <sup>4</sup>

PSYC 721	Practicum Preparation I	3
PSYC 781	Internal Practicum (2)	8
PSYC 782	External Practicum (4)	16
PSYC 798	Pre-Internship (4)	16
Internship (any combination of PSYC 799A and PSYC 799B is acceptable)		40
PSYC 799A	Internship (5)	
PSYC 799B	Internship (10)	

**Total Units** 83<sup>1</sup> Required for M.A. degree<sup>2</sup> 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.<sup>3</sup> California licensure courses<sup>4</sup> 700-numbered courses are in addition to didactic units required for the degree<sup>5</sup> Fulfills service learning requirement**Minimum required grade point average**

Students must maintain a minimum grade point average of B (3.0) in all courses taken for the degree. Furthermore, three failed grades (B- or below, or U) is grounds for dismissal from the program.

**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 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 life span 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 is the doctoral dissertation. The requirements for the dissertation are delineated by the Department in accordance with standards established by the School of Behavioral Health and the Faculty of Graduate Studies. For the doctoral dissertation, a formal proposal must be submitted to and approved by a faculty supervisory committee. Furthermore, upon completion of the doctoral dissertation, 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 doctoral dissertation proposal

**Normal time to complete the program**

Six (6) years – full-time enrollment required

**Psychology – Psy.D.****Director of clinical training**

Kendal C. Boyd

The APA-accredited Psy.D. 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.

**Program learning outcomes**

Upon completion of the Psy.D. Program, the graduate will:

1. Show an advanced understanding of the science of psychology.
2. Function as a highly competent clinician for whom research and practice constantly inform each other.
3. Demonstrate skills for conducting and understanding research.
4. Integrate whole-person care into clinical work.
5. Consistently engage in activities that promote lifelong learning.

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 Psy.D. clinical degree program requires completion of coursework in the following areas: psychological science foundations, quantitative/research foundations, wholeness, general and elective courses, psychological assessment and treatment, clinical practice, and research. Specific course requirements are predicated on the practitioner-scholar training model. Curriculum requirements associated with the Psy.D. degree program are indicated below.

All students are required to complete elective units for degree completion. The department offers elective coursework in specialty areas such as primary care psychology, neuroscience and neuropsychology, clinical child psychology, social/cultural health psychology, and psychology of religion.

Students have the option (but are not required) to utilize 12 units of their total elective unit requirement to fulfill a professional concentration. A list of pre-determined concentrations can be found on the departmental website (<https://behavioralhealth.llu.edu/academics/psychology/>). If students wish to create a unique concentration, they must submit a formal proposal to the Department of Psychology Academic Affairs Committee indicating the proposed 12 elective units to use toward the completion of their professional concentration, as well as the proposed title of the professional concentration. The Department of Psychology Academic Affairs Committee will consider each proposal individually in making a recommendation to support/not support the proposed concentration.

Under certain circumstances, and upon recommendation of the Department of Psychology Academic Affairs Committee, students may adjust courses or numbers of units taken during the current and subsequent academic year(s) to best fit their program requirements. Upon such recommendation, students will be permitted to move forward as members of the cohort in which they enrolled.

## Accreditation

The Doctor of Psychology 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 First Street, NE, Washington, DC 20002  
telephone: 202/336-5979; email: [apaaccred@apa.org](mailto:apaaccred@apa.org); website <https://www.accreditation.apa.org/>.

## Admissions

In addition to Loma Linda University (p. 23) and School of Behavioral Health (p. 149) 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 an accredited college or university.
- *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 35<sup>th</sup> percentile. Only the most current GRE scores are admissible (exam must have been taken within the last five years and the most recent dated exam will be considered). The GRE psychology subject examination is not required. Due to issues associated with the COVID-19 pandemic, the GRE General Test is waived for all 2021-2022 applicants to doctoral programs in the School of Behavioral Health. Please do not submit GRE scores through ETS or report your scores in any application materials as they will not be taken into consideration.
- *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 preferred 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 the faculty's overall assessment of the applicant and their credentials. Credentials include a 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 <sup>1</sup>	2
PSYC 545	Cognitive Foundations <sup>1</sup>	4
PSYC 551	Psychobiological Foundations <sup>1</sup>	4
PSYC 564	Foundations of Social and Cultural Psychology <sup>1</sup>	4
PSYC 575	Foundations of Human Development <sup>1</sup>	4
PSYC 591	Colloquia (one unit each year for three years; one unit for M.A.) <sup>1</sup>	3

### Core Curriculum II: Quantitative psychology research methodology

PSYC 501	Advanced Statistics I <sup>1</sup>	4
PSYC 502	Advanced Statistics II <sup>1</sup>	4
PSYC 505	Research Methods in Psychological Science <sup>1</sup>	4
PSYC 511	Psychometric Foundations <sup>1</sup>	3

### Core Curriculum III: Wholeness

PSYC 526	Ethics and Legal Issues in Clinical Psychology <sup>1</sup>	3
PSYC 554	Health Psychology <sup>1</sup>	4
PSYC 567	Human Diversity	3
RELE 5__	Graduate-level ethics	3

RELR 540	Wholeness and Health <sup>1, 5</sup>	3
RELT 530	Spirituality and Clinical Psychology	3
<b>Clinical psychology: General</b>		
PSYC 555	Psychopharmacology	2
PSYC 571	Adult Psychopathology <sup>1</sup>	4
PSYC 681	Clinical Supervision and Consultation	2
PSYC 681L	Clinical Supervision and Consultation Laboratory	1
PSYC 683	Management and Professional Practice	1
<b>Psychological assessment</b>		
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
<b>Psychological treatment</b>		
PSYC 581	Evidence-Based Psychological Practice I	2
PSYC 581L	Evidence-Based Psychological Practice I (Laboratory)	1
PSYC 582	Evidence-Based Psychological Practice II	2
PSYC 582L	Evidence-Based Psychological Practice II (Laboratory)	1
PSYC 583	Evidence-Based Psychological Practice III	2
PSYC 583L	Evidence-Based Psychological Practice III (Laboratory)	1
PSYC 584	Evidence-Based Psychological Practice IV	2
PSYC 584L	Evidence-Based Psychological Practice IV (Laboratory)	1
<b>Electives</b>		<b>19</b>
Electives include, but are not limited to: <sup>2</sup>		
PSYC 566	Cultural Psychology	
PSYC 604A	Advanced Topics in Multivariate Analyses I	
PSYC 604B	Advanced Topics in Multivariate Analyses II	
PSYC 676	Geropsychology <sup>3</sup>	
PSYC 684	Human Sexual Behavior and Treatment <sup>3</sup>	
PSYC 685	Drug Addiction and Therapy <sup>3</sup>	
PSYC 686	Child, Partner, and Elder Abuse <sup>3</sup>	
PSYC 694	Seminar in Advanced Topics in Psychology	
<b>Research</b>		
PSYC 696	Psy.D. Doctoral Research (1-8)	16
<b>Total Units</b>		<b>121</b>
<b>Clinical practice <sup>4</sup></b>		
PSYC 721	Practicum Preparation I	3
PSYC 781	Internal Practicum (2)	8
PSYC 782	External Practicum (4)	16
PSYC 798	Pre-Internship (4)	16
Internship (any combination of PSYC 799A and PSYC 799B is acceptable)		40
PSYC 799A	Internship (5)	
PSYC 799B	Internship (10)	
<b>Total Units</b>		<b>83</b>

<sup>1</sup> Required for M.A. degree; includes 4 units of electives

<sup>2</sup> 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.

<sup>3</sup> California licensure

<sup>4</sup> 700-numbered courses are in addition to didactic units required for the degree

<sup>5</sup> Fulfills service learning requirement

## 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) as part of 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 life span 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. 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

Five (5) years — full-time enrollment required

## Psychology - Ph.D., Psy.D. Comparison

Course Title		PsyD	PhD
<b>Core Curriculum I: Foundations of Psychological Science</b>			
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
<b>Totals</b>		<b>21.0</b>	<b>21.0</b>
Course Title		PsyD	PhD
<b>Core Curriculum II: Quantitative Psychology Research Methodology</b>			
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		4.0
<b>Totals</b>		<b>15.0</b>	<b>19.0</b>
Course Title		PsyD	PhD
<b>Core Curriculum III: Wholeness</b>			
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
RELE 5__	Graduate-level ethics	3.0	3.0
RELR 540	Wholeness and Health	3.0	3.0
RELT 530	Spirituality and Clinical Psychology	3.0	3.0
<b>Totals</b>		<b>19.0</b>	<b>19.0</b>
Course Title		PsyD	PhD
<b>Clinical Psychology: General</b>			
PSYC 555	Psychopharmacology	2.0	2.0
PSYC 571	Adult Psychopathology	4.0	4.0
PSYC 681	Clinical Supervision and Consultation	2.0	2.0
PSYC 681L	Clinical Supervision and Consultation Laboratory	1.0	
PSYC 683	Management and Professional Practice	1.0	
<b>Totals</b>		<b>10.0</b>	<b>8.0</b>
Course Title		PsyD	PhD
<b>Psychological Assessment</b>			
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
<b>Totals</b>		<b>9.0</b>	<b>9.0</b>
Course Title		PsyD	PhD
<b>Psychological Treatment</b>			
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
<b>Totals</b>		<b>12.0</b>	<b>12.0</b>
	<b>Course Title</b>	<b>PsyD</b>	<b>PhD</b>
<b>Electives</b>			
Other options available for Psy.D. electives <sup>3</sup>		19.0	
PSYC 566	Cultural Psychology		
PSYC 604A	Advanced Topics in Multivariate Analyses I		
PSYC 604B	Advanced Topics in Multivariate Analyses II		
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 Ph.D. electives <sup>3</sup>			18.0
PSYC 566	Cultural Psychology		
PSYC 604A	Advanced Topics in Multivariate Analyses I		
PSYC 604B	Advanced Topics in Multivariate Analyses II		
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		
<b>Totals</b>		<b>19.0</b>	<b>18.0</b>
	<b>Course Title</b>	<b>PsyD</b>	<b>PhD</b>
<b>Research</b>			
PSYC 696	Psy.D. Doctoral Research (1-8)	16.0	
PSYC 697	Ph.D. Doctoral Research (1-4)		51.0
<b>Totals</b>		<b>16.0</b>	<b>51.0</b>
<b>Overall Totals</b>		<b>121.0</b>	<b>157.0</b>
	<b>Course Title</b>	<b>PsyD</b>	<b>PhD</b>
<b>Clinical practice</b>			
PSYC 721	Practicum Preparation I <sup>4</sup>	3.0	3.0
PSYC 781	Internal Practicum (2) <sup>4</sup>	8.0	8.0
PSYC 782	External Practicum (4) <sup>4</sup>	16.0	16.0
PSYC 798	Pre-Internship (4) <sup>4</sup>	16.0	16.0
PSYC 799B	Internship (10 units per quarter, total 40 units [2000 hours]) <sup>4</sup>	40.0	40.0
<b>Totals</b>		<b>83.0</b>	<b>83.0</b>

<sup>1</sup> RELE 500- or 600-level courses will also be accepted.

<sup>2</sup> RELT 500- or 600-level courses will also be accepted.

<sup>3</sup> 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 school other than the School of Behavioral Health, with department approval.

<sup>4</sup> 700-numbered courses are in addition to the 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 supports 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 balanced. Both conceptually and pragmatically, the programs in the Department of Social Work and Social Ecology are guided by an overarching ecological (bio-psycho-social-spiritual) perspective 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, sociopolitical, 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 and leadership roles—capable of respecting and addressing the needs of diverse populations.

### Chair

Beverly J. Buckles

### Executive associate chair

Kimberly Freeman

### Primary faculty

Qais Alemi

Kelly Baek

Christi Bell

Beverly J. Buckles

Monte Butler

Kimberly Freeman

Talolo Lepale

Susanne Montgomery

Larry Ortiz

### Secondary faculty

Jamie Banducci

Vanessa Cortez

Kasey David

Neil Driscoll

Danielle Huntsman

Craig R. Jackson

G. Victoria Jackson

Elaine Karas

Veronica Kelley

Allison Maxwell

Kristen Miller

Georgina Mora Yoshioka

Martha Parra

Kristen Slagter

### Emeritus faculty

Terry Forrester

Ignatius Yacoub

## Programs

- Clinical Leadership – D.S.W. (p. 179)
- Criminal Justice – M.S. (p. 181)
- Gerontology – M.S. (p. 182)
- Play Therapy – Certificate (p. 184)
- Social Welfare and Social Research – Ph.D. (p. 184)
- Social Work – M.S.W. (p. 186)

## Clinical Leadership – D.S.W.

### Program director

Larry Ortiz

Prior to the end of the 1990s, two doctoral degrees (the Ph.D. and original D.S.W.) were viewed as interchangeable modes of advancing the scholarship of the social work profession. However, flexibility in the articulation of discipline-specific Ph.D. programs led to preference for the Ph.D. doctorate over the D.S.W. degree, finally resulting in the complete elimination of the D.S.W. degree in the United States. Over the last decade, there has been growing recognition by social work professionals and educators that a practice doctorate for social work addresses the expansion of much-needed applied scholarship in ways not being achieved by social work Ph.D. programs. Thus, the role, importance, and a new vision of the practice doctorate in social work has been articulated and follows the journey seen in other fields such as nursing, physical therapy, speech, and audiology. As such, the D.S.W. degree in its re-articulated content provides a pathway for M.S.W.-level social workers to further their development as scholar practitioners, providing leadership and innovation in applied social work practice.

## Mission statement

The mission of the Doctor of Social Work program is to transform experienced M.S.W.-level social workers into scholar practitioners capable of advancing clinical social work practice knowledge and innovation through applied scholarship, leadership, education, and the promotion of social justice in support of whole-person care in an increasingly diverse and global practice environment.

## Program goals

The goals of the D.S.W. program are to:

1. Prepare doctoral-level social work scholar practitioners with expertise in clinical leadership.

2. Equip students with the understanding and skills needed to develop, implement, and disseminate knowledge and innovation in behavioral health practice and social work education.
3. Equip students to be transformative leaders in the integration and promotion of social justice in behavioral health services and social work education.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Conduct systematic inquiry that adheres to scholarly conventions.
2. Use and critically evaluate—at an advanced-level—evidenced-based, research-informed, and promising practices.
3. Develop and disseminate clinical practice and educational innovations and knowledge that reflect the inherent values of the social work profession.
4. Demonstrate expertise in behavioral health clinical leadership that advances social work practice and education.
5. Demonstrate expertise in the application of mission-focused learning that promotes and integrates social justice in practice as well as education delivery and innovation.

## Financial assistance

Students who are accepted into the D.S.W. degree program may apply for work-study with the Department of Social Work and Social Ecology. Students may also apply for need-based financial aid, such as a loan or other work-study programs on campus. Students accepted into the D.S.W. degree program are eligible for and encouraged to apply for the CSWE minority fellowships. See <https://www.cswe.org/Centers-Initiatives/Minority-Fellowship-Program/MFP-Doctoral-Students.aspx> for information.

For information regarding funding opportunities, see Student Aid (p. 42) in the financial polices section of this CATALOG.

## Accreditation

All doctoral degrees at Loma Linda University fall under the institution's regional accreditation by the WASC Senior College and University Commission (WSCUC). D.S.W. degrees are not currently accredited by the Council on Social Work Education (CSWE). Albeit the Council has approved standards for accreditation and is beginning to pilot the standards prior to engaging in the formal accreditation of D.S.W. programs. Loma Linda's D.S.W. program is committed to the accreditation standards currently published by CSWE and is following the minimum program criteria to be eligible for consideration of future accreditation by CSWE. The D.S.W. program at Loma Linda University has been designed to meet these criteria from inception and will apply for CSWE accreditation once available.

## Admissions

Applicants must meet Loma Linda University (p. 23) and School of Behavioral Health (p. 149) admissions requirements, and give evidence of academic ability, professional comportment, and mature judgment. The Doctor of Social Work degree curriculum represents advanced study over and above the M.S.W. degree. Admission is based on an integrated evaluation of the following criteria:

- M.S.W. degree or equivalent (e.g., M.S.S.W.) from a program that is accredited by the CSWE

- A minimum of four-years professional social work experience post receipt of the M.S.W. degree
- A minimum M.S.W. G.P.A. of 3.3
- Writing assessment, GRE general test: The analytical writing section score must equal 4.0 or higher, or applicant can demonstrate proficiency in professional writing as evidenced by first authorship on a professional publication. Due to issues associated with the COVID-19 pandemic, the GRE General Test is waived for all 2022-2023 applicants to doctoral programs in the School of Behavioral Health. Please do not submit GRE scores through ETS or report your scores in any application materials as they will not be taken into consideration.
- License to practice clinical social work is preferred
- Structured essay
- Structured oral interview with program
- Curriculum vitae
- Three letters of recommendation (academic and professional)

### Pre-entrance clearance:

- Health clearance

### Anti-discrimination policy:

The Doctor of Social Work program adheres to the policy (<http://llucatalog.llu.edu/introduction/affirmative-action/>) of the university.

## Program requirements

### Theory, analytical analysis, and social justice

SPOL 610	Diversity Theory and Global Perspectives	3
SWCL 615	Comparative Social Work Practice, Evidence-based Practice and Social Justice	3

SPOL 658	Advanced Policy Analysis and Research	3
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### Clinical interventions

SWCL 620	Clinical Interventions I: Advanced Theories and Cognitive Behavioral Therapy Interventions	3
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SWCL 630	Clinical Interventions II: Emergent Methods for Complex Conditions	3
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SWCL 640	Clinical Interventions III: Trans-modular Methods for Complex Systems	3
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SWCL 650	Neuroscience, Resiliency and Trauma-Focused Global Practice	3
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### Clinical leadership, management and program development

SWCL 670	Clinical Leadership I	3
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SWCL 680	Clinical Leadership II	3
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CFSD 624	Program Development for Families and Communities	3
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CFSD 625	Grant Writing	3
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CFSD 626	Program Design, Evaluation and Monitoring	3
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### Academic leadership and practice

SWCL 604A	Integrative Seminar: Academic Practice	1
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SWCL 604B	Integrative Seminar: Academic Practice	1
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SWCL 604C	Integrative Seminar: Academic Practice	1
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SWCL 605	Digital Design: Curriculum and Course Development	2
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### Applied clinical leadership and academic practice<sup>1,2</sup>

SWCL 785	Externship I	2
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SWCL 786	Externship II	2
<b>Spirituality, ethics, and whole person care</b>		
RELE 5__	Graduate-level ethics studies	3
RELR 540	Wholeness and Health <sup>3</sup>	3
RELT 5__	Graduate-level theological studies	3
<b>Research</b>		
CFSD 601	Statistics I	4
CFSD 602	Statistics II	4
SPOL 654	Research Methods I	4
SPOL 655	Research Methods II	4
SWCL 660	Translational Research, Design and Testing	2
<b>Applied doctoral project</b>		
SWCL 690	Applied Project I	1
SWCL 691	Applied Project II	2
SWCL 692	Applied Project III	2
SWCL 693	DSW Project I	2
SWCL 694	DSW Project II	2
SWCL 695	DSW Project III	2
<b>Total Units</b>		<b>83</b>

<sup>1</sup> Courses in this section are not taught online.

<sup>2</sup> Previous life, work, or academic practicum experiences cannot not be used to meet this requirement. Externships are developed and assigned by the program faculty.

<sup>3</sup> Fulfills service learning requirement.

## Non-course requirements

The Doctor of Social Work degree is awarded upon completion of all required coursework and the following non-course requirements:

- An oral defense and the A=applied D.S.W. project
- Submission to the Program and School of Behavioral Health the final approved copy of the applied D.S.W. project document(s).

## Normal time to complete the program

Three (3) years (eleven [11] academic quarters) – based on full-time enrollment including two summer externships

## Criminal Justice – M.S.

### Program director

Kimberly Freeman

The M.S. in criminal justice emphasizes integrated behavioral health interventions, restorative justice, and community reintegration to address the prevention, early intervention, treatment, and rehabilitation needs of persons at risk for or who have already been incarcerated.

An interdisciplinary approach to this course of study considers the biological, psychological, social, and spiritual well-being of victims, offenders, and communities. The curriculum provides a deeper understanding of crime and social justice through the lens of a forensic behavioral health specialization.

## 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 American society and to work with the legal system as it relates to a forensic behavioral health framework.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Integrate and utilize knowledge of social science and theories of criminology as applied to criminal justice issues within behavioral health settings.
2. Describe the dimensions and causes of crime and delinquency.
3. Describe the structure of the American criminal and juvenile justice systems.
4. Use research in evaluating the effectiveness or practice and programs within criminal and juvenile justice settings.
5. Practice ethical principles that guide the concepts of justice, fairness, and treatment within criminal and juvenile justice systems.
6. Use mental illness and treatment interventions within a forensic behavioral health framework.
7. Identify differences between retributive and restorative justice approaches in addressing the effects of crime.

## General overview

The 48-quarter unit program begins with 20 units of foundation coursework that is divided into three professional areas of study: criminal justice, human wholeness, and social research methods. During the final year of study, students complete a forensic behavioral health specialization along with specialized selectives. Forensic behavioral health is a specialized branch of professional practice in which the behavioral health and criminal-justice worlds overlap. Students will focus on the needs of individuals in the criminal and/or juvenile justice systems who experience severe mental illness and may also present co-occurring substance use. Students will gain knowledge and skills in treatment programming. In addition, they will be prepared to assess and provide expert testimony regarding continued institutionalization versus readiness for community treatment.

Students have two options to complete the program:

1. Nonthesis: Professional practicum (540 hours of integrated practicum and seminar) and eight units of didactic selectives.
2. Thesis: Six units of academic thesis and two units of didactic selectives.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, this program follows the admission requirements of the School of Behavioral Health (p. 149), as follow:

1. A four-year baccalaureate degree from an accredited college or university
2. At least three letters of recommendation—preferably one of which is from an academic source and one from a work supervisor
3. Applicants must meet the minimum academic and professional compatibility criteria established by the program. These criteria include:
  - A cumulative undergraduate 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 non-field practica coursework shows significant improvement or if they have additional attributes that demonstrate preparedness

and an appropriate fit for graduate education in the area of Criminal Justice. 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 graduate coursework, certifications, and/or training that illustrate preliminary preparation for a career in Criminal Justice. Students who are admitted to the Criminal Justice Program with a cumulative G.P.A. below 3.0 may be required to participate in individualized academic assessment and a targeted learning assistance program.

- Demonstration, through the application and interview processes, of compatibility with professional standards set by the program including the ability to develop and nurture interpersonal relationships, communication skills, self-awareness, professional comportment, critical thinking skills, fit with the mission and values of Loma Linda University and the Department of Social Work and Social Ecology, and the capacity to successfully complete the Master of Science in Criminal Justice curriculum.

## 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.

A grade of B or better indicates a student has mastered knowledge, skills, and professional practice performance competencies outlined by the program. In order to progress successfully through the program and complete the degree, students must meet the G.P.A. and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

### Core criminal justice courses

CRMJ 515	Crime and Society	3
CRMJ 517	Criminal Procedure and Rules of Evidence	3
CRMJ 574	Theories of Crime and Restitution	3
SOWK 585	Legal and Ethical Aspects in Health and Behavioral Health Services	3

### Religion, wholeness, relationships

RELR 540	Wholeness and Health <sup>3</sup>	3
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### Social research methods

SOWK 548	Research Methods	5
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### Forensic Behavioral Health Specialization 20

CRMJ 519	Expert Testimony: Procedure and Practice	
CRMJ 620	Forensic Mental Health	
SOWK 513	Human Behavior in a Culturally Diverse Environment	
SOWK 681	Behavioral Health Policies and Systems	
SOWK 663	Crisis and Trauma Interventions	
SOWK 659	Recovery in Behavioral Health	
SOWK 648	Co-occurring Processes and Interventions	

### Degree completion options 8

Nonthesis option:

Selectives (8 units) <sup>1</sup>		
CRMJ 599	Directed Study/Special Project	
GLBH 550	Women in Development	
MFAM 644	Child Abuse and Family Violence	
PSYC 685	Drug Addiction and Therapy	

SOWK 684 Advanced Policy Projects

### Professional Practicum <sup>2</sup>

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 (2 units from nonthesis option above)

SOWK 697 Applied Research (4 units)

SOWK 698 Thesis (2 units)

**Total Units 48**

<sup>1</sup> Other courses may be approved for elective credits in consultation with the faculty advisor and in accordance with University policies for academic variances

<sup>2</sup> 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.

<sup>3</sup> Fulfills service learning requirement

## Normal time to complete the program

Two (2) years (seven [7] quarters) – based on full-time enrollment; part time permitted

## Gerontology – M.S.

### Program director

Kimberly Freeman

Gerontology is the multidisciplinary-multidimensional study of aging and aging processes. Emphasis is placed on the knowledge and skills required for competent practice, with considerable attention given to understanding the social, cultural, and economic factors that affect services for this population.

## Mission

The mission of the Gerontology Program is to provide graduate-level education for current and future professionals who are dedicated to enhancing the lives of older adults through evidenced-based interventions.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Integrate human behavior and developmental theories of aging, incorporating a bio-psycho-social-spiritual strength-based orientation to geriatric practice.
2. Use research in evaluating the effectiveness of practice and programs in achieving intended outcomes for older adults.
3. Integrate into practice intersectionality and the unique needs of older adults belonging to specific racial, ethnic, socioeconomic groups; of men and women; and of those with different sexual orientations.
4. Demonstrate professional ethics in providing assistance to older adults.
5. Effectively implement evidenced-based interventions that enhance the lives of older adults.



- Follow policies that shape and regulate the continuum of care and services available to older adults.

## General overview

The 48-unit program provides students with a balance of academic, experiential, and research activities essential for work with older adults. The curriculum begins with 22 units of foundational coursework divided into three professional areas of study: gerontology, religion and wholeness, and social research methods. During the final year of study, students complete geriatric practice courses along with specialized selectives. The curriculum allows students to develop their knowledge and skills in locating and providing resources, services, and opportunities for older adults and their families, as well as a problem-solving approach supporting the development of coping skills for older adults and their caregivers.

In addition to the above, students are given either a thesis or a non-thesis professional practicum option.

- Thesis: completion of six research-related units and five units of selectives.
- Nonthesis: completion of a practical orientation, 540 hours of integrated practicum and seminar, and 11 units of didactic selectives.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, this program follows the admission requirements of the School of Behavioral Health (p. 149), as follow:

- A four-year baccalaureate degree from an accredited college or university.
- A personal statement
- At least three letters of recommendation—preferably one of which is from an academic source and one from a work supervisor.
- Meet the minimum academic and professional compatibility criteria established by the program. These criteria include:
  - A cumulative undergraduate 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 non-field practica coursework shows significant improvement or if they have additional attributes that demonstrate preparedness and an appropriate fit for graduate education in Gerontology and geriatric practice. 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 graduate coursework, certifications, and/or training that illustrate preliminary preparation for a career in gerontology. Students who are admitted to the Gerontology Program with a cumulative G.P.A. below 3.0 may be required to participate in individualized academic assessment and a targeted learning assistance program.
  - Demonstration, through the application and interview processes, of compatibility with professional standards set by the Program including the ability to develop and nurture interpersonal relationships, communication skills, self-awareness, professional comportment, critical thinking skills, fit with the mission and values of Loma Linda University and the Department of Social Work and Social Ecology, and the capacity to successfully complete the Master of Science in Gerontology curriculum.

## 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.

A grade of B or better indicates a student has mastered knowledge, skills, and professional practice performance competencies outlined by the program. In order to progress successfully through the program and complete the degree, students must meet the G.P.A. and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

### Core gerontology courses

GERO 515	Diversity and Aging	3
GERO 615	Economics and Management Issues of Older Adult Services	4
GERO 617	Bio-psycho-social-spiritual Theories of Aging	4
SOWK 585	Legal and Ethical Aspects in Health and Behavioral Health Services	3

### Religion, wholeness, and relationships

RELR 540	Wholeness and Health <sup>2</sup>	3
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### Social research methods

SOWK 548	Research Methods	5
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### Geriatric practice

GERO 654	Therapeutic Interventions with Older Adults	3
SOWK 647	Integrated Behavioral Health	2
SOWK 661	Psychodynamic Therapies	4
SOWK 663	Crisis and Trauma Interventions	3
SOWK 681	Behavioral Health Policies and Systems	2

### Degree completion options 12

Nonthesis option:

#### Selectives (12 units)

GERO 599	Directed Study/Special Project
PSYC 685	Drug Addiction and Therapy
PSYC 686	Child, Partner, and Elder Abuse
SOWK 513	Human Behavior in a Culturally Diverse Environment
SOWK 648	Co-occurring Processes and Interventions
SOWK 659	Recovery in Behavioral Health
SOWK 684	Advanced Policy Projects

#### Professional Practicum <sup>1</sup>

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 (6 units from selectives listed above)	
SOWK 697	Applied Research (4 units)
SOWK 698	Thesis (2 units)

**Total Units 48**

<sup>1</sup> Professional practicum and seminar units are not calculated into total didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement

## Normal time to complete the program

Two (2) years (seven [7] academic quarters) – based on full-time enrollment; part time permitted.

# Play Therapy – Certificate

### Program director

Kimberly Freeman

Play therapy is a recognized, theory-based approach for working with children and adolescents presenting with behavioral health issues. This approach utilizes toys and other expressive activities as forms of communication and as intervention methods for problem-solving and promoting well-being.

The fully online Play Therapy Program certificate is designed to meet the educational requirements of the Association of Play Therapy to become a registered play therapist (RPT) and is designed for behavioral health professionals with—or in the process of obtaining—a licensable graduate degree from an accredited college.<sup>1</sup>

## Program learning outcomes

By the end of this program, the graduate should be able to:

- Relate the history of play therapy to applications in the assessment and treatment of children and youth.
- Describe theories that inform play therapy with children and adolescents, including those guiding assessment, diagnosis, and specialized interventions.
- Use play therapy methods and techniques with children and adolescents, including those applicable in specialized interventions.

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.

<sup>1</sup> Completion of the Play Therapy Certificate coursework at Loma Linda University does not include certification as a Registered Play Therapist. Individuals must apply to the Association for Play Therapy (United States) or the applicable certifying association in their country, and complete all additional requirements.

## Admissions

Applicants must meet the admission requirements as follow:

1. A fully completed LLU application form.
2. A graduate with a licensable mental health degree from an accredited university. Official transcripts are evidence of degrees and courses completed. Individuals already licensed as mental health professionals must be in good standing with the relevant licensing board.
3. Consideration for admission will be given to individuals in the process of completing licensable mental health graduate degrees from accredited universities. Applicants must be in good academic standing and have permission from their current programs to enroll.

4. Submit three letters of recommendation from an academic source, professional peer, or a work supervisor.

## Program requirements

A grade of B or better indicates a student has mastered knowledge, skills, and professional practice performance competencies outlined by the program. In order to progress successfully through the program and complete the certificate, students must meet the G.P.A. and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

### Required foundation courses

PLTH 513	Introduction to Play Therapy	3
PLTH 516	Child-Centered Play Therapy	3
PLTH 546	Child-Parent Relationship Therapy-CPRT (Filial Therapy)	3
PLTH 550	Trauma Focused Play Therapy	3
REL_ 5__ <sup>1</sup>		1
<b>Total Units</b>		<b>13</b>

<sup>1</sup> Students select the religion course to be taken in consultation with their advisor.

## Normal time to complete the program

Four (4) academic quarters – based on less than half-time enrollment

# Social Welfare and Social Research – Ph.D.

### Program director

Larry Ortiz

The mission of the Social Welfare and Research Program is to extend the distinctive principles of whole-person care beyond the individual to include interventions within communities and social institutions. The program's emphasis on an integrative approach to an advanced curriculum in social science, social welfare, 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 as university faculty members.

## Program learning outcomes

In addition to institutional learning outcomes (p. 19) (ILOs), graduates of the program should be able to:

1. Integrate advanced concepts from social science theories, social ethics, and social justice values in oral and written scholarship. (ILO: 1,2, 5)
2. Utilize critical thinking to distinguish among the moral, ethical, and political differences that affect research, policies, programs, interventions, and their consequences. (ILO 5)
3. Meet conceptual and analytical requirements of research questions through the integration of behavioral, political, economic, and social and human diversity. (ILO 4, 5)

4. Independently define research problems and formulate appropriate questions and hypotheses. (ILO 3, 4)
5. Explain the rationale for particular qualitative and quantitative research methods. (ILO 3)
6. Select appropriate strategies for independent research and/or evaluation. (ILO 3)
7. Demonstrate competence in utilizing different methods of collecting, recording, analyzing, and interpreting data. (ILO 1,2,3)
8. Formulate research questions reflecting the global perspective of Loma Linda University that link the local with global. (ILO 4,5)
9. Demonstrate the role of social justice in transdisciplinary research and practice for transprofessional interventions addressing significant social problems.(ILO 5)
10. Prepare to join a faculty as a researcher, teacher, and mentor. (ILO 1,2)

## Social welfare and research specialization

Students admitted to the program should have demonstrated evidence of interest in social values aligned with a commitment to social justice, and research interests compatible with the areas of expertise supported by the program's faculty. Information regarding faculty areas of expertise is available by contacting the program director. Years one and two are largely composed of coursework and shaping of one's dissertation question.

While completing all required coursework, each student will choose a dissertation committee chair and committee with whom he or she will work closely to develop and defend a dissertation proposal following University guidelines. Upon successful defense of the proposal, students are admitted to candidacy and actively engage in dissertation research, culminating in the successful defense of their dissertations. Consistent with Faculty of Graduate Study policy, the department requires a two-publication dissertation. More information is available from the program director.

## Admissions

The Ph.D. in social welfare and social research is designed to be a full-time program. Part-time attendance is discouraged as class scheduling does not support regular part-time enrollment.

In addition Loma Linda University (p. 23) admission requirements, admission to the program is governed by the policies and procedures established by the School of Behavioral Health (p. 149). Admission requirements include:

1. Master's degree from an accredited institution of higher education. Examples would include disciplines such 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 social welfare interests reflecting the values of social justice. Professional experience and achievement that demonstrate the competence, motivation, organization, and leadership to complete doctoral education in a timely manner. It is preferred that applicants have at least two years post-master degree experience in their professional area.
5. Personal interview.

6. 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.
7. Satisfactory performance on the Graduate Record Examination. Due to issues associated with the COVID-19 pandemic, the GRE General Test is waived for all 2022-2023 applicants to doctoral programs in the School of Behavioral Health. Please do not submit GRE scores through ETS or report your scores in any application materials as they will not be taken into consideration.
8. Curriculum vitae or other description of education and employment history.
9. Three letters of recommendation including one from an academic source and one from a work supervisor.

The application process for the Ph.D. degree in social welfare 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 previously completing the program and the program's ability to support potential candidates in their areas of interest.

## Program requirements

All course grades should meet the minimum B (3.0) standard, which by university policy indicates satisfactory performance. In some cases, conditional consideration of course grades below a B (3.0) may be given if the requirements for independent research and competency in consumer protection are not compromised. Academic variances that document the rationale for acceptance of grades below a B (3.0), must be submitted to the dean's office for approval.

### Theory

SPOL 610	Diversity Theory and Global Perspectives	3
SPOL 613	Social Science Concepts I	3
SPOL 614	Social Science Concepts II	3

### Policy

SPOL 616	History and Philosophy of Social Welfare Policy	3
SPOL 658	Advanced Policy Analysis and Research	3

### Research

SPOL 654	Research Methods I	4
SPOL 655	Research Methods II	4
SPOL 667	Research Methods Practicum Seminar	2

### Statistics

CFSD 601	Statistics I	4
	or PSYC 501	Advanced Statistics I
CFSD 602	Statistics II <sup>1</sup>	4
	or PSYC 502	Advanced Statistics II
CFSD 603	Statistics III <sup>1</sup>	4
	or PSYC 503	Advanced Multivariate Statistics
SPOL 665	Statistical Practicum Seminar	2
Advanced statistics electives		4

### Integrative seminars

SPOL 601	Integrative Seminar: Pro-seminar <sup>1</sup>	3
SPOL 602	Integrative Seminar: Global Perspective <sup>1</sup>	6
SPOL 603	Integrative Seminar: Implementation Science <sup>1</sup>	3
SPOL 604A	Integrative Seminar: Academic Practice	1

SPOL 604B	Integrative Seminar: Academic Practice	1
SPOL 604C	Integrative Seminar: Academic Practice	1
<b>Dissertation</b>		
SPOL 681	Dissertation Proposal I	3
SPOL 682	Dissertation Proposal II	3
SPOL 683	Dissertation Proposal III	3
SPOL 697	Research <sup>1</sup>	12
<b>Religion</b>		
RELE 588	Philosophical Ethics	3
RELR 540	Wholeness and Health <sup>2</sup>	3
RELT 557	Theology of Human Suffering	3
<b>Electives</b>		
<b>4</b>		
<b>Total Units</b>		<b>92</b>

<sup>1</sup> Course repeated to fulfill unit requirement

<sup>2</sup> Fulfills service learning requirement

## Noncourse requirements

### Concept Paper

Prior to the beginning of SPOL 681 Dissertation Proposal I, students submit to the doctoral faculty a short concept paper, three to five pages in length, briefly describing their plan for dissertation research.

### Candidacy

Students must successfully complete:

1. required coursework
2. the applied research requirements
3. the defense of the dissertation proposal before advancing to candidacy

### End of year two deliverables

Publishable paper (from SPOL 665 Statistical Practicum Seminar)  
Draft proposal (from SPOL 667 Research Methods Practicum Seminar)

### End of year three deliverable

Defend dissertation proposal

### Dissertation

The PhD 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

Four (4) years – based on full-time enrollment.

# Social Work – M.S.W.

### Program director

Kimberly Freeman

The social work profession centers on improving the quality of life for people and enhancing human potential for full, productive participation in society. With this philosophy at its core, the Master of Social Work (M.S.W.) Program, offered through the School of Behavioral Health, emphasizes an ecological perspective that focuses on the interaction of a person or system with their 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 health-care services and related facilities. The combination of these influences has guided the development of the generalist curriculum, clinical practice specialization, and selection of practicum sites for the Master of Social Work Program.

## Mission

The mission of the Master of Social Work Program at Loma Linda University is to prepare competent, ethical, and compassionate advanced social work practitioners who possess the knowledge, values, attitudes, and skills necessary for practicing whole-person care in advanced practice and leadership roles within behavioral health institutions and agencies.

## Goals

The goals of the Master of Social Work Program are to:

1. Instill in graduates the knowledge, ethics, values, and skills expected of professional social workers.
2. Prepare students for advanced practice with diverse populations as well as the advancement of social and economic justice in local, national, and international communities.
3. Equip students to integrate research and practice for advancing the profession of social work.
4. Prepare advanced social work practitioners for work in behavioral health institutions and agencies.
5. Transition students into professional roles with a commitment to lifelong learning.

## Program outcomes

Reflected in the goals above are the following nine social work competencies that describe the knowledge, values, skills, and the cognitive and affective processes that define and inform generalist and clinical practice. By the end of the program, the graduate should be able to:

1. Demonstrate ethical and professional behavior.
2. Engage in diversity and difference in practice.
3. Advance human rights and social, economic, and environmental justice.
4. Engage in practice-informed research and research-informed practice.
5. Engage in policy practice.
6. Engage with individuals, families, groups, organizations, and communities.
7. Assess individuals, families, groups, organizations, and communities.
8. Intervene with individuals, families, groups, organizations, and communities.

9. Evaluate practice with individuals, families, groups, organizations, and communities.

## Liberal arts preparation

The M.S.W. degree curriculum is built upon a liberal arts perspective. Applicants whose undergraduate degrees do not reflect this perspective may be asked to enroll in additional courses.

Prerequisite requirements must be completed before admission to the M.S.W. degree program.

## General overview

The program begins with first-year, generalist content common to all graduate social work education. The generalist practice curriculum is grounded in the liberal arts and the person-in-the-environment framework. Students learn to promote social well-being, and build upon the strength and resiliency of all human beings through a range of prevention and intervention practice methods when working with diverse individuals, families, groups, organizations, and communities. Integrated within the curriculum, students learn to apply ethical principles, critical thinking, and research-informed practice at the micro, mezzo, and macro levels, while maintaining an emphasis on diversity, advocacy for human rights, and social and economic justice.

The clinical practice specialization builds upon the strengths-based and ecological practice perspectives of the generalist curriculum by extending, expanding, and enhancing students' abilities to effectively engage in advanced clinical practice. This requires the integration of generalist and clinical practice theories and intervention methods as applied to individuals, families, groups, organizations, and communities. Theoretical perspectives include empowerment, strengths approach, attachment, child development, risk and resiliency, trauma, cognitive neuroscience, family systems, cognitive behavior, and psychodynamics—all of which are enhanced by the person-in-the-environment perspective. These theoretical underpinnings support student skill acquisition and development through clinical specialization courses with a firm grounding in engagement, diagnostic assessment, problem-solving, social policy, and evidence-informed treatment approaches. Clinical practice experiences also address the needs and rights of all persons, promoting social and economic justice. Clinical students learn to recognize and understand the importance of continuous self-reflection and practice evaluation.

## Program options

### On-Campus M.S.W. Program

Program options have been designed to address the varying needs of students. As such, the program offers two-, three-, and four-year options. Students completing the two-year option cannot be engaged in regular full-time employment. An advanced standing option is also available to qualified B.S.W. degree graduates (see below).

### Online M.S.W. Program

An online M.S.W. degree program is offered to meet the varying needs of students not able to attend a traditional program. Degree requirements for the M.S.W. online cohort are the same as those required for the on-campus cohorts for the three-year, part-time option. A separate application portal has been created for the online M.S.W. program option. Online courses use a combined synchronous and asynchronous format requiring students to attend via Zoom Wednesday evenings. Practicum

placements are completed in person (one full weekday per week) and local to the student as available and with approval of the program.

Inquiries about this program should be directed to Kimberly Freeman, M.S.W., degree program director.

## Advanced standing for B.S.W. degree graduates

Students who have earned a B.S.W. degree from a Council on Social Work Education (CSWE)-accredited program within the past five years have the opportunity to remove areas of redundancy in their education through consideration for advanced standing. In their personal statements, which are part of the application for admission to the M.S.W. degree program, B.S.W. degree graduates may request consideration for advanced standing status and, thus, have the opportunity to complete the M.S.W. degree in 12 months. Students completing the advanced standing track must begin the M.S.W. degree program during the Summer Quarter, which requires individuals to submit all components of their application packet by January 15 of the enrollment year. Exceptions to this date will be reviewed on a case-by-case basis. Advanced standing students enrolling as part of the summer cohort are eligible to receive a tuition waiver covering up to 14 units, not including living expenses and fees. See the *M.S.W. Handbook* on the department website for more specific information: <http://behavioralhealth.llu.edu/programs/social-work/msw-social-work> (<http://behavioralhealth.llu.edu/programs/social-work/msw-social-work/>).

## Transfer students

Transfer students who have taken courses in an M.S.W. degree program accredited by CSWE may transfer up to 20 percent of the 78 units required for the M.S.W. degree at Loma Linda University, unless otherwise approved. Evaluation of all courses is conducted on a case-by-case basis using course outlines, transcripts, and course catalog entries to review and assure adequate equivalency. The Academic Standards Committee evaluates these equivalencies. The 20 percent transfer of units is limited to credits that have not already been applied to a degree and for which a B (G.P.A. of 3.0) grade or better has been recorded. Transferred course grades are not calculated into a student's G.P.A. earned while matriculating through the program at Loma Linda University.

Advanced standing may be given to individuals with a master's degree for equivalent courses taken that apply to another degree in the areas of research methods and statistics—if the content and area of study demonstrate appropriate compatibility with competencies required for professional social work and behavioral health. These requests are assessed by the Academic Standards Committee to meet the equivalency requirements previously described.

Professional, field practicum grades/credits are not typically transferable—review is made on a case-by-case basis. Consideration may be given if there is clear evidence that the student has met the practice competencies of the M.S.W. degree program.

No academic credit is given for life experience and/or previous work experience for any part for the M.S.W. degree program (i.e., generalist and clinical practicums, courses in the generalist, or clinical specialization curricula).



## Central academic requirements and processes

### M.S.W. advancement G.P.A.

The M.S.W. degree advancement G.P.A. provides an initial predictor of success. The first 12 units completed toward the M.S.W. degree, including units acquired during non-matriculation, must be completed with a G.P.A. of 3.0. Students who fail to achieve 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 new student orientation.

### Qualifying review

When all generalist coursework is completed, students are required to pass the program's qualifying review (see the *M.S.W. Handbook*). The intent of this process is to assist faculty members and students in the assessment of strengths and areas for improvement, provide feedback, foster an environment of self-evaluation, and encourage heightened participation in individualized academic development.

### Generalist and clinical practicums

Field practicums are regarded as an integral part of the Social Work Program. These offer opportunities for students to integrate and apply theoretical and research knowledge with social work practice and interventional skills in institutional or agency settings. Practicums 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 clinical practice. Students complete 1,080 hours of field work in a qualified setting and 120 hours of concurrent integrated consultation for a total of 1,200 hours.

The emphasis of SOWK 757A Generalist Practice Consultation, SOWK 757B Generalist Practice Consultation, and SOWK 757C Generalist Practice Consultation (480 hours of practicum and 60 hours of consultation or nine generalist practicum units) is on achieving generalist social work knowledge, values, and skills that include developing rapport with agency personnel and clients, acquiring interview skills, and obtaining beginning-level psychosocial assessment and intervention capabilities. The content of the concurrent consultation sessions further supports this perspective, providing students with opportunities to integrate their practicum experiences with their developing professional identity.

The emphasis of SOWK 787A Clinical Practice Consultation, SOWK 787B Clinical Practice Consultation, and SOWK 787C Clinical Practice Consultation (600 hours of practicum and 60 hours of consultation or 12 clinical practicum units) reflects the clinical practice specialization, and provides the depth and breadth of learning opportunities that underpin the acquisition of advanced practice capabilities. Specifically, clinical practicum experiences are expected to promote increased insight and understanding of agency and/or client systems, building on the generalist skills achieved during the first year of study.

### Research

The program includes completion of coursework 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.

### Wholeness portfolio

Each student completes a wholeness portfolio as part of their generalist and clinical practice 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 as the student completes the final quarter of the clinical practicum. This experience emphasizes deep self-reflection regarding specific wholeness areas such as physical, emotional, and spiritual well-being, professionalism, and lifelong learning as well as integration of the core values of Loma Linda University. It is seen as a capstone academic experience that facilitates closure as well as the final stage of reflection and review in the development of transitioning professional.

### Combined degrees

Students interested in completing combined degrees in social work should view the list of combined degree programs (p. 428) in this CATALOG.

## Accreditation

The Master of Social Work Program is accredited to provide master's degree-level education by the Council on Social Work Education (CSWE). The next reaffirmation will be completed in 2025. CSWE may be contacted at: 1600 Duke Street, Suite 500, Alexandria, VA 22314-3457; telephone: 703/683-8080; email: info@cswe.org.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, admission to the Social Work Program is governed by the policies and procedures established by the School of Behavioral Health (p. 149).

Admission requirements for both the main campus and online M.S.W. Program include the following:

1. A four-year baccalaureate degree from an accredited college or university.
2. The MSW curriculum is built on a liberal arts perspective. Individual applicants whose undergraduate degree does not reflect this perspective may be asked to enroll in additional courses.
3. Applicants must submit a completed application, including a personal statement; application fee; all college and/or university transcripts; and at least three letters of recommendation—preferably one of which is from an academic source and one from a work supervisor
4. Students enrolled in the online program must commit, in writing, to one full weekday (Monday-Friday) of practicum each week. Weekend and after-hour options are not available.
5. Applicants must meet the minimum academic and professional compatibility criteria established by the program. These criteria include:
  - A cumulative undergraduate 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 non-field practica coursework 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 graduate coursework, certifications, and/or training that illustrate preliminary preparation for a career in social work. Students who are admitted to the Social Work Program with a cumulative G.P.A. below 3.0 may be required to participate in individualized academic assessment and a targeted learning assistance program.

- Demonstration, through the application and interview processes, of compatibility with the profession of social work, ability to develop and nurture interpersonal relationships, communication skills, self-awareness, professional comportment, critical thinking skills, fit with the mission and values of Loma Linda University and the Department of Social Work and Social Ecology, and the capacity to successfully complete the Master of Social Work curriculum. Interview content and process may vary based on integration agreements with CSWE accredited B.S.W. programs.

## Program requirements

The M.S.W. degree consists of 78 units of didactic coursework and 21 units of professional practica experience. Students must maintain a program grade point average of B (3.0 on a 4.0 scale) and meet the knowledge, skills, and professional performance competencies outlined by the program.

A grade of B or better indicates a student has mastered knowledge, skills, and professional practice performance competencies outlined by the program. In order to progress successfully through the program and complete the degree, students must meet the G.P.A. and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

### Generalist curriculum

SOWK 510	Diversity Theory in Practice and Research	3
SOWK 513	Human Behavior in a Culturally Diverse Environment	4
SOWK 514	Social Welfare History and Policy	4
SOWK 517	Practice I: Individuals	4
SOWK 518	Practice II: Groups	3
SOWK 519	Practice III: Organizations and Communities	3
SOWK 520	Practice IV: Families <sup>1</sup>	3
SOWK 548	Research Methods	5
SOWK 574	Practice V: Social Work Administration	3
SOWK 578	Field Orientation <sup>1</sup>	0
SOWK 585	Legal and Ethical Aspects in Health and Behavioral Health Services	3

### Clinical practice specialization curriculum

SOWK 613	DSM: Diagnosis Within the Context of Diversity and Difference	4
SOWK 617	Global Practice	3
SOWK 647	Integrated Behavioral Health	2
SOWK 648	Co-occurring Processes and Interventions	3
SOWK 661	Psychodynamic Therapies	4
SOWK 662	Behavioral and Cognitive Therapies	4
SOWK 663	Crisis and Trauma Interventions	3
SOWK 675	Supervision	3
SOWK 681	Behavioral Health Policies and Systems	2
SOWK 695A	Advanced Research Methods <sup>3,7</sup>	2

SOWK 695B	Advanced Research Methods <sup>3,7</sup>	2
SOWK 695C	Advanced Research Methods <sup>3,7</sup>	2
<b>Required cognate</b>		
RELR 540	Wholeness and Health <sup>8</sup>	3
<b>General selectives</b>		
Select 6 units from one of the following lists: <sup>6</sup>		6
<b>Population groups</b>		
GERO 515	Diversity and Aging	
GERO 654	Therapeutic Interventions with Older Adults	
MFAM 644	Child Abuse and Family Violence	
SOWK 550	Clinical Interventions with Service Members, Veterans, and Families	
SOWK 584	Special Topics in Social Work	
SOWK 651	Medical Social Work	
SOWK 653	Child Welfare Practice	
SOWK 658	Children's Psychotherapy	
SOWK 680	Children and Families Policies and Services	
<b>Problem areas</b>		
BHCJ 550	Fundamentals of Dialectical Behavior Therapy	
CRMJ 519	Expert Testimony: Procedure and Practice	
MFAM 665	Structural and Multidimensional Family Therapy	
SOWK 584	Special Topics in Social Work	
SOWK 659	Recovery in Behavioral Health	
SOWK 684	Advanced Policy Projects	
SOWK 679	Advanced Professional Projects	

**Total Units** **78**

### Professional practica experience

<b>Generalist practicum and seminar</b>		
SOWK 757A	Generalist Practice Consultation <sup>2,5,8</sup>	3
SOWK 757B	Generalist Practice Consultation <sup>2,5,8</sup>	3
SOWK 757C	Generalist Practice Consultation <sup>2,5,8</sup>	3
<b>Clinical practicum and seminar</b>		
SOWK 787A	Clinical Practice Consultation <sup>4,5</sup>	4
SOWK 787B	Clinical Practice Consultation <sup>4,5</sup>	4
SOWK 787C	Clinical Practice Consultation <sup>4,5</sup>	4

**Total Units** **21**

<sup>1</sup> Not eligible for waiver.

<sup>2</sup> Hours: 160 + 20; Not eligible for waiver

<sup>3</sup> Thesis option is available for students meeting program criteria. Once approved students will take SOWK 697 (4 units) and SOWK 698 (2 units) in place of SOWK 695ABC (6 units).

<sup>4</sup> Hours: 200 + 20

<sup>5</sup> 700-numbered courses are not calculated into the total didactic units required for the degree.

<sup>6</sup> 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.

<sup>7</sup> SOWK 695ABC is equivalent to SOWK 695.

<sup>8</sup> SOWK 678 substitutes SOWK 757ABC for Advanced Standing students with approval of the program. This course is not calculated into the total didactic units required for the degree.

**Normal time to complete the program**

Two (2) years (six [6] academic quarters) – based on full-time enrollment;  
part time permitted

# SCHOOL OF DENTISTRY

## Dean's welcome



During your time at Loma Linda University School of Dentistry, you will receive an excellent contemporary education filled with rich clinical experiences. However, it is the people who have been drawn to this unique environment of Christian education and mission who make Loma Linda University a special place. I invite you to learn more about our clinical services, programs, and exceptional dental school family of students, faculty, and staff.

Robert A. Handysides, D.D.S.  
Dean, School of Dentistry

If your eyes are the windows to your soul, it has been said that the mouth is a window to your health. As such, dentistry plays a strategic part in providing integrated patient care. Loma Linda University School of Dentistry is a vibrant center of education where you will acquire knowledge, technical skills, and management expertise to thrive in the new health-care model that is evolving. Our expectation is that our graduates will provide care that exceeds patients' expectations.

Our faculty is committed to providing an evidence-based education that incorporates the most advanced electronic education resources available. In 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. Students 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.

We are proud of our history and contributions to research. Our ongoing commitment to clinical and foundational research provides students with rich opportunities to work with outstanding faculty members in a wide variety of investigative activities.

## 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. Subsequently, 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 leading 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, amphitheatres, 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 as well as the acquisition and utilization of 3-D computed tomography (3DCT) and computer-aided manufacture (CAD/CAM) technology.

In 2000, the first major expansion of the School of Dentistry in more than 20 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 36 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.

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.

A year later (August 2012), another opening featured the school's groundbreaking for the 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 was well prepared to pilot the school's programs through revisions that accommodated 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 teaching and healing 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.
- Focus on students.
- Empathic care.
- Commitment to service.
- Pursuit of truth.
- Progressive excellence.
- Analytical thinking.
- Effective communication.

## General information

University students 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, 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.
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 previously earned a dental degree outside the United States.
4. ADVANCED DENTAL EDUCATION programs lead to postdoctoral certificates in eight specialty and non-specialty areas of dentistry and, at the student's option, additionally to a Master of Science or a Master of Science in Dentistry degree.
5. The COMBINED DEGREES program leads 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 program

### D.D.S. / M.A.

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 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.

## Awards

All School of 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. Awards are given through various organizations, associations, and school and university departments. The names of all award recipients are printed in the University commencement program.

## Student life

### School of Dentistry inherent requirements

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 inherent requirements 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.

### **Sensation and perception**

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 skills**

Students must be fluent in the use of standard written and spoken English. They must be able to communicate effectively and sensitively with patients, the faculty and 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, assist patients who lack motor control, and position themselves around the patient and dental chair.

### **Behavioral and psychosocial attributes**

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**

The 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 assistant dean for admissions and student affairs, before accommodation is formally implemented. While awaiting assessment and documentation, temporary accommodation may be granted. The temporary accommodation will not exceed 90 days.

Students requesting accommodation are responsible for:

- Reporting their request for accommodation to the Office of Admissions and Student Affairs
- Providing the supporting documentation

### **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
- Demonstrated 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 their 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 (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

### Student Government

Loma Linda University American Student Dental Association (LLU ASDA) is composed of peer voted student officials who are charged by administration to carry out the actions necessary for a successful student government, as well as serving as a representation for the ASDA chapter at regional and national meetings and events. LLU ASDA's central body is the Executive Council (EC) comprised of the First Delegate/President, Second Delegate/President-elect, two class representatives, secretary, and treasurer.

The EC has the authority to appoint members to other designated offices to fulfill the work of the local chapter as needed and delegate duties to subcommittees as needed in governing the student body, including representation for other state and national professional organizations (CDA, ADEA, AGD) and class leadership. The EC oversees the utilization of all funds paid by student dues and obtained through fundraising.

Elections for all positions of LLU ASDA occur in the Spring Quarter.

### Class leadership

Class leaders are elected annually during the Autumn term for the first year and Spring term thereafter. Leaders are elected by confidential peer vote to work as a team to coordinate class events—including academic, spiritual, and social experiences. Class leadership consists of:

DDS - President and four vice presidents serving in various capacities.

IDP - Two class representatives

DH BS - President and three vice presidents.

### Committee representation

Students are invited to serve on school standing committees. The Office of Admissions and Student Affairs consults with LLU ASDA and class leadership to select students to serve on committees, including the Admissions Committees, Academic Review Committees, Curriculum Committee, and Professional Standards Committee.

To maintain a leadership position, a minimum 2.7 GPA must be maintained by the president, vice presidents and professional organization representatives.

## Special opportunities

### Alumni-Student Convention

The annual Alumni-Student Convention, now part of the One Loma Linda Homecoming, 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> (<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 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 coursework during the term.
- Achieve a term grade point average of at least 3.50 with no grade lower than a B-.
- Receive no incomplete (I) or in-progress (IP) 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.

#### Examinations

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). 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, they may be denied admission to the examination site. If a student arrives late for an examination and is allowed to take it, they 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 them 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 coursework 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.
4. Under certain circumstances and upon recommendation of the Academic Review Committee, a student may remediate/repeat a maximum of 12 units during the current and subsequent academic year. Upon such recommendation, the student will be permitted to move forward as a member of the cohort with which they enrolled.

#### 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 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 IDP2 TO LEVEL IDP3

- Cumulative didactic and clinical course G.P.A. at or above 2.0.
- Successful completion of all courses in the IDP2 curriculum.

###### Level IDP3 to Level IDP4

- 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.

**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. Attempt the Integrated National Board Dental Examination (INBDE).
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 an 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. Attempt 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**

Attempting the Integrated National Board Dental Examination (INBDE) is a requirement for graduation. The INBDE is designed to assess cognitive knowledge of the basic, behavioral, and clinical sciences. Eligibility to sit for the INBDE 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 the INBDE. The eligibility requirements and timetable for passing the INBDE is as follows:

INBDE examination is scheduled after the third year. A candidate for the Doctor of Dental Surgery degree must have attempted the INBDE at least once 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, academic affairs; the assistant dean, admissions and student affairs; and the department representative/course directors of all courses required of the respective class in the academic year. The associate dean, 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 assistant dean, admissions and 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 follow:

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 academic 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 decide if the appealing student will be permitted to continue participating in classes and/or clinical assignments during the appeal proceedings.



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 appeal is warranted or not.

## 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 they meet 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, they 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, they 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 coursework; 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 coursework.
- 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 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 assistant dean for admissions and student 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 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 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 B.S. senior year by the end of the dental hygiene B.S. junior year.

### Dental hygiene 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, they 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, they 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 30 of the remaining 80 hours may be completed doing non-dental service. Dental hygiene students must complete 60 service-learning hours. Thirty-five hours of local service are required, and up to 15 non-dental service hours may be credited. International Dentist Program students must complete 60 hours of service. Of the 60 hours, 40 will be assigned by the program. Up to 15 hours of non-dental service may be completed as part of the 60 hours total requirement. In addition, a didactic component is included within the service-learning program. Lectures are embedded within existing courses and occur throughout the curricula.

Students are required to be in good and regular standing to be eligible to participate in elective international service-learning experiences.

## Learning environment

Because the study of dental sciences and arts is based on a foundation in essentially the same science subjects as are studied in medicine and allied health curricula, the School of Dentistry shares with the School of Medicine the facilities for teaching basic sciences.

Classrooms, laboratories, student lounges, teachers' offices, and clinical facilities related solely to dentistry occupy the School of Dentistry building, named in honor of M. Webster Prince, the first dean. Prince Hall is on the University mall facing the University Church and adjacent to the Medical Center. The facilities effectively accommodate collaboration with the Medical Center in ongoing research and service programs.

The total resources of the University constitute a wealth of opportunity for the student with initiative and willingness to develop individual capacity to the fullest extent. Students find varied opportunities for serving and learning in the immediate University community, in school-sponsored service-learning clinics, clinical and research electives, and 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 is dedicated to providing students with tools that expand their thinking and challenge them to ask probing questions and to earnestly search for answers. Its 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 Academic 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 for the traditional program and 27 months for the international program and may not exceed six for the traditional program and three for the international program. The Bachelor of Science degree in dental hygiene is scheduled to be completed in two years and may not exceed three years.

### 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](mailto:finaid@llu.edu) or 909/558-4509.

## Schedule of charges

### Dentistry

All tuition, enrollment fees and technology fees are set for one academic year.

	1st Year	2nd Year	3rd Year	4th Year
Tuition	\$74,950	\$89,900	\$89,900	\$89,900
University Enrollment fees	\$3,780	\$3,780	\$3,780	\$3,780
Technology fees (Computer set-up, technical support)	\$1,160	\$1,160	\$960	\$960
The following are estimates based on the information available at this time and are subject to change.				
Instrument issue (Includes usage fees)	\$5,800	\$7,300	\$190	\$0
Computer (Budget revised at purchase with financial aid)	\$2,265	\$0	\$0	\$0
Optics (Loupes and light)	\$1,800	\$0	\$0	\$0
Laboratory fees	\$520	\$700	\$700	\$700
Dental supplies (Billed with usage)	\$144	\$550	\$465	\$600
Books	\$1,020	\$1,660	\$795	\$0
Student Association	\$210	\$280	\$280	\$280
National Board Examinations	\$0	\$0	\$0	\$1000
Estimated living expenses (For off-campus student, not living with relative)	\$21,233	\$24,585	\$24,585	\$24,585
Total	\$112,882	\$129,915	\$121,655	\$121,805

### International Dentist Program

All tuition, enrollment fees and technology fees are set fees for one academic year. The following amounts are based on the 27-month program.

	IDP 3rd Year	IDP 4th Year
Tuition (all IDP3 fees are based on 5 quarter academic year for IDP3 year)	\$122,500	\$97,000
University Enrollment fees	\$4,725	\$3,780
Technology fees (Computer set-up, technical support)	\$1,760	\$960
The following are estimate based on the information available at this time and are subject to change.		
Instrument issue (Includes usage fees)	\$11,000	\$0
Computer (Budget revised at purchase with financial aid)	\$2,265	\$0
Optics (Loupes and light)	\$1,800	\$0
Laboratory fees	\$875	\$700
Books	\$3,000	\$1,500
Student Association	\$350	\$280
Estimated living expenses (For off-campus student, not living with relative)	\$31,290	\$24,585
Total	\$179,565	\$128,805

## 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	\$35,790	\$47,720
University Enrollment fees	\$2,835	\$3,780
Technology fees (Computer set-up, technical support)	\$1,380	\$960
The following are estimates based on the information available at this time and are subject to change.		
Instrument issue (Includes usage fees)	\$6,105	\$0
Computer (Budget revised at purchase with financial aid)	\$2,200	\$0
CPR (Mandatory on-campus training)	\$60	\$0
Optics (Loupes)	\$1,500	\$0
Laboratory fees	\$105	\$140
Supplies (Billed with usage)	\$55	\$150
Books	\$1,500	\$1,500
SADHA dues	\$195	\$260
Student Association	\$0	\$450
National Board Examination	\$0	\$500
Estimated living expenses (For off-campus student, not living with relative)	\$20,115	\$26,820
Total	\$71,840	\$82,280

### On- and off-campus student housing

Students may go to [llu.edu/central/housing/](http://www.llu.edu/central/housing/) (<http://www.llu.edu/central/housing/>) for housing information and a housing application form.

## Programs

### Undergraduate

- Dental Hygiene — B.S. (p. 204)

### Professional

- Dentistry — D.D.S. (p. 207)
- International Dentist Program (IDP) — D.D.S. (p. 219)

### Advanced Education

- Endodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 228)
- Implant Dentistry — post-D.D.S. Certificate, M.S.D., M.S. (p. 231)
- Oral and Maxillofacial Surgery — post-D.D.S. Certificate (p. 232)
- Orthodontics and Dentofacial Orthopedics — post-D.D.S. Certificate, M.S. (p. 233)
- Pediatric Dentistry — post-D.D.S. Certificate, M.S.D., M.S. (p. 234)
- Periodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 236)
- Prosthodontics — post-D.D.S. Certificate, M.S.D., M.S. (p. 237)

## 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 dental hygienists.

Dental Hygiene Program curricula are approved by the Western Association of Schools and Colleges (WASC) Senior College and University Commission (WSCUC). The program is also approved by the Commission on Dental Accreditation of the American Dental Association.

## Philosophy

A profession in the health arts and sciences calls increasingly for persons of intelligence, integrity, responsibility, and depth of human understanding. Therefore, the program of instruction is built 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 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 as well as 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 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

Shelly A. Withers

### Primary faculty

Darlene A. Armstrong

Larysa Baydala

Danielle Ellington

Debra K. Friesen

Shelley L. Hayton

Shirley A. Lee

Patricia M. Lennan

Colleen A. Whitt

Shelly Withers

Debra A. Zawistowski

### Emerita faculty

Joni A. Stephens

## Application procedures

The Dental Hygiene Program is an undergraduate program in the School of Dentistry. A student must have a high school diploma or its equivalent and must meet college entrance requirements. Admission to the Dental Hygiene Program is in the junior year after successful completion of the required prerequisite courses in a regionally accredited college or university.

The application is available at <http://www.adea.org/>. An LLU supplemental application is also required. The application deadline for the Bachelors program is April 1 and June 1 for the Dental Hygiene to DDS Bridge pathway.

### Application procedure

1. *DHCAS application.* The DHCAS application is completed online by the applicant at [adea.org](http://adea.org) (between November 1 and April 1). The DHCAS application takes approximately four to six weeks to be processed and sent to the school where the applicant has applied.
2. *Supplemental application.* As soon as the DHCAS application is verified by DHCAS and received by LLU the applicant is sent 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 30 days. This includes essays specific to Loma Linda University, a photograph, and the nonrefundable application fee of \$100.
4. *Transcripts.* Official college transcripts must be sent to DHCAS and high school transcripts sent directly to LLU. When an applicant becomes an accepted student, official college/university transcripts are required to be sent to LLU 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 send DHCAS three personal references. These must include an academic reference from a science instructor; a reference from an employer or professional; 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.
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 20 hours of observation/work experience in a dental facility.
8. *Acceptance.* Accepted students receive a phone call, an email, and an acceptance letter signed by the Dean. 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 the dental hygiene program must submit a nonrefundable deposit of \$100. All deposits become

part of the first quarter's 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's 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 visa 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 at [finaid@llu.edu](mailto:finaid@llu.edu); or by telephone, 909/558-4509. Website information is located at [llu.edu/central/ssweb/finaid](http://llu.edu/central/ssweb/finaid) (<http://www.llu.edu/central/ssweb/finaid/>).

## General regulations

The student is also subject to School of Dentistry academic information (p. 196), technical standards (p. 193), financial policy (p. 200), and University academic policies (p. 33) outlined in this CATALOG.

## Employment

Dental hygiene students are discouraged from working, however, may accept part-time employment during the school year after receiving approval from the department chair and the associate dean for academic affairs. Permission to work is granted on the basis of grades, class load, and health. Work hours may not interfere with course, laboratory, or clinic assignments.

## Supplies

Dental hygiene students must obtain required 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 purchase 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. 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 website.

## Program

Dental Hygiene – B.S. (p. 204)

## Dental Hygiene – B.S.

Dental hygiene—a profession dating back to 1913—is largely concerned with preventive health services. The hygienist works in cooperation 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.

## Institutional learning outcomes

Students who graduate with 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 been equipped with the knowledge, skills, and attitudes to successfully enter the practice of dental hygiene. By the end of the program, graduates should be able to:

1. Apply a professional code of ethics in all patient and professional interactions.
2. Adhere to the federal/state legal and regulatory framework in the provision of oral health care.
3. Apply critical-thinking and problem-solving skills in the provision of oral health care to promote whole-patient health and wellness.
4. Use evidence-based rationales and emerging treatment modalities to evaluate and incorporate accepted standards of care.
5. Incorporate self-assessment and professional growth through lifelong learning.
6. Advance oral health services through affiliations with professional organizations, service activities, and research.
7. Apply quality-assurance processes to ensure a continued commitment to accepted standards of care.
8. Communicate effectively with diverse individuals and groups serving all persons without discrimination by acknowledging and appreciating diversity.
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.
10. Provide collaborative, individualized patient care that is comprehensive and compassionate.

## Accreditation

The entry-level B.S. degree curricula is accredited by the Commission on Dental Accreditation of the American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611-2678; telephone: 312/440-250; email: [accreditation@ada.org](mailto:accreditation@ada.org); website: <http://www.ada.org>.

## Admissions

The entry-level dental hygiene applicant must meet the following minimum requirements:

- 96 quarter or 64 semester units of accredited college coursework.  
*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 coursework, averaged separately; a minimum grade of C for all pre-entrance coursework 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 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. Courses are to be completed at an institutionally accredited college or university.
- Required science courses must be completed within five years prior to the desired date of matriculation.

For further details, please see the application procedures tab in the School of Dentistry undergraduate section (p. 202) of this catalog.

### Dental hygiene general education requirements

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general

humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- 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
- Nonremedial college mathematics or statistics

#### Domain 4: Social sciences (minimum 12 quarter units)

- Selected from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- One course (or components integrated into several courses) dealing specifically with issues of human diversity.

#### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university
- Other areas of study in communication may include courses in computer information systems, critical thinking, and public speaking.

#### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

#### Electives

To meet the minimum requirement of 90 quarter units required for matriculation, electives may be selected from the previous four domains.

For more information regarding GE requirements for graduation, see LLU (p. 26) general education requirements .

## Program requirements

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
<b>Junior Year, Autumn Quarter</b>						
ANAT 301	Head and Neck Anatomy, DH	46			46	4.0
DNES 200	Curricular Practical Training <sup>1,2</sup>		75		75	0.0
DNHY 305	Oral Anatomy Lecture	22			22	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			20	2.0
<b>Winter Quarter</b>						
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		40	40	1.0		
DNHY 380	Medically Compromised Patients	22		22	2.0		
DNHY 381	Pharmacology for the Dental Hygienist I	22		22	2.0		
<b>Spring Quarter</b>							
DNHY 323	Preclinical Dental Hygiene III	22		22	2.0		
DNHY 323L	Preclinical Laboratory		40	40	1.0		
DNHY 376	Dental Hygiene Clinic		120	120	4.0		
DNHY 380	Medically Compromised Patients	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		20	2.0		
<b>Senior Year, Summer Quarter</b>							
DNES 200	Curricular Practical Training <sup>2</sup>		75	75	0.0		
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 <sup>2</sup>	11		11	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		
<b>Autumn Quarter</b>							
DNHY 411	Dental Hygiene Topics I	22		22	2.0		
DNHY 415	Applied Nutrition	22		22	2.0		
DNHY 417	Dental Health Education II	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	Whole Person Care	20		20	2.0		
<b>Winter Quarter</b>							
DNHY 408	Professional Ethics	22		22	2.0		
DNHY 431	Public Health Dentistry	33		33	3.0		
DNHY 452	Clinical Seminar II	22		22	2.0		
DNHY 476	Dental Hygiene Clinic II		176	176	4.0		
DNHY 495	Dental Hygiene National Board Preparation	22		22	1.0-2.0		
<b>Spring Quarter</b>							
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		20	2.0		
<b>Total Units</b>			<b>997</b>	<b>480</b>	<b>836</b>	<b>2313</b>	<b>116-118</b>

<sup>1</sup> Fulfills service learning requirement

<sup>2</sup> Students register for zero (0) units in the autumn and winter terms and for one (1) unit in the spring.

### Normal time to complete the program

Four (4) years – Two (2) years (seven [7] academic quarters) at LLU – full-time enrollment required

NOTE: Consult advisor regarding other courses that may be applied towards graduation.

## Professional

- Dentistry – D.D.S. (p. 207)
- International Dentist Program (IDP) – D.D.S. (p. 219)

## Dentistry – D.D.S.

### Dean

Robert A. Handysides

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. Therefore, it 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 the requirements for the Doctor of Dental Surgery degree.

## Objective

The primary objective of the dentistry curriculum is to graduate individuals who attest to the purpose of the University and the goals of the School of Dentistry—which include advancing knowledge and understanding of health, disease, and ways to improve health and the dental health-care delivery system through basic and applied research.

## Program learning outcomes

By the end of the program, the graduate should be able to:

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. Maintain 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

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 associate dean for academic affairs.

## 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 associate dean for academic affairs. 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 upon graduation all students will have the foundational knowledge (basic sciences), clinical sciences (clinical skills), and human and applied sciences (professional behaviors) necessary for the successful practice of general dentistry. LLUSD students must be competent in the following areas:

### Domain I: Practice and Profession

1. **Critical Thinking: Perform clinical decision making that is supported by foundational knowledge and evidence-based rationales.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- a. Foundational Knowledge
  - Understand the fundamental principles governing the structure and functioning of the human organism.
  - Read and evaluate scientific literature and other appropriate sources of information in making oral health-management decisions.
- b. Clinical Sciences
  - Apply critical-thinking and problem-solving skills in the comprehensive care of patients.
  - Integrate information from biomedical, clinical, and behavioral sciences in addressing clinical problems.
- c. Human and Applied Sciences



- Understand the role of lifelong learning and self-assessment in maintaining competence and attaining proficiency and expertise.

**2. Community Involvement: Promote, improve, and maintain the oral health of patients in various types of community settings.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge
  - Explain the principles of leadership and motivation.
  - Explain the role of professional dental organizations in promoting the health of the public.
  - Explain the concept of a worldwide community as described in the world mission of the Seventh-day Adventist Church.
  - Explain the role of the dental professional in a community setting.
- Clinical Sciences
  - Participate in local, national, or global community-based oral health-care programs.
  - Recognize the effectiveness of community-based programs.
- Human and Applied Sciences
  - Demonstrate the skills to function successfully as a leader on an oral health-care team.
  - Communicate effectively with patients, peers, other professionals, and staff.
  - Demonstrate the ability to serve patients and interact with colleagues and allied dental personnel in a multicultural work environment without discrimination.
  - Demonstrate honesty and confidentiality in relationships with staff.

**3. Professional Practice: Understand the basic principles important in developing, managing, and evaluating a general dental practice.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge
  - Evaluate the advantages and disadvantages of different models of oral health-care management and delivery.
  - Explain legal, ethical, and risk-management principles relating to the conduct of dental practice.
  - Explain the basic principles of personnel management, office systems, and business decisions.
- Clinical Sciences
  - Demonstrate the ideal of service through the provision of compassionate, personalized health care.
  - Understand the importance of maintaining a balance between personal and professional needs for successful life management.
  - Apply knowledge of informational technology resources in contemporary dental practice.
  - Recognize and manage significant cultural, psychological, physical, emotional, and behavioral factors affecting treatment and the dentist-patient relationship.
- Human and Applied Sciences

- Understand the role of lifelong learning and self-assessment in maintaining competence and attaining proficiency and expertise.

- Apply financial management skills to debt and business management.

- Understand the importance of spiritual principles as a basis for developing a philosophy of health care.

- Establish rapport and maintain productive and confidential relationships with patients using effective interpersonal skills.

**4. Patient Management: Apply behavioral and communication skills in the provision of patient care.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge
  - Understand the fundamental principles governing the structure and functioning of the human organism.
  - Read and evaluate scientific literature and other appropriate sources of information in making oral health-management decisions.
- Clinical Sciences
  - Apply critical-thinking and problem-solving skills in the comprehensive care of patients addressing intra-professional and inter-professional care.
  - Integrate information from biomedical, clinical, and behavioral sciences in addressing clinical problems.
- Human and Applied Sciences
  - Understand the role of lifelong learning and self-assessment in maintaining competence and attaining proficiency and expertise.
  - Recognize and manage significant cultural, psychological, physical, emotional, and behavioral factors affecting treatment and the dentist-patient relationship.
  - Establish rapport and maintain productive and confidential relationships with patients, using effective interpersonal skills.
  - Recognize common behavioral disorders and understand their management.
  - Use appropriate and effective techniques to manage anxiety, distress, discomfort, and pain.
  - Manage dental fear, pain, and anxiety with appropriate behavioral and pharmacologic techniques.

**Domain II: Assessment of the Patient and the Oral Environment**

**5. Examination of Patients: Conduct an appropriately comprehensive examination to evaluate the general and oral health of a diverse patient population at all stages of life within the scope of general dentistry.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge/Basic Sciences
  - Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
  - Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions and their clinical features to understand patient risk in the prevention, diagnosis, and management of disease.

- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of disease.
- Apply knowledge of the biology of microorganisms in physiology and pathology for the prevention, diagnosis, and management of disease.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases and the promotion and maintenance of oral health.

b. Clinical Sciences

- Identify the chief complaint and take a history of the present illness.
- Conduct thorough medical, social, and dental histories.
- Perform an appropriate clinical and radiographic examination using diagnostic aids and tests, as needed.
- Establish and maintain accurate patient records.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of diseases and the promotion and maintenance of oral health.
- Identify patient behaviors that may contribute to problems in maintaining oral health.
- Identify barriers that prevent patients from seeking oral health care.
- Identify patient behaviors that may contribute to orofacial problems.
- Identify signs of abuse or neglect.

6. **Diagnosis: Determine a diagnosis by interpreting and correlating findings from the examination.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

a. Foundational Knowledge/Basic Sciences

- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
- Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions and their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology for the prevention, diagnosis, and management of diseases.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.

b. Clinical Sciences

- Identify each problem that may require treatment.
- Recognize clinical and radiographic changes that may indicate disease.
- Establish a clinical or definitive diagnosis for each disorder identified.
- Recognize conditions that may require consultation with or referral to another health-care provider, and generate the appropriate request.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
- Identify patient behaviors that may contribute to problems related to maintaining oral health.
- Identify barriers that prevent patients from seeking oral health care.

7. **Treatment Planning: Develop a comprehensive treatment plan and treatment alternatives.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

a. Foundational Knowledge/Basic Sciences

- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
- Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology for the prevention, diagnosis, and management of diseases.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases and the promotion and maintenance of oral health.

b. Clinical Sciences

- Identify treatment options for each condition diagnosed.
- Identify systemic diseases or conditions that may affect oral health or require treatment modifications.
- Develop an appropriately sequenced integrated treatment plan.
- 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).
- 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.
- Identify patient expectations and goals for treatment.
- Explain and discuss the diagnosis, treatment options, and probable outcomes for each option with the patient or guardian.
- Secure a signed consent to treat.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
- Identify patient behaviors that may contribute to problems related to maintaining oral health.

- Identify barriers that prevent patients from seeking oral health care.

**8. Management of Emergencies, Pain, and Anxiety: Manage dental and medical emergencies that may be encountered in dental practice, as well as pain and anxiety with pharmacologic and nonpharmacologic methods.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge/Basic Sciences
  - Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
  - Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
  - Recognize common behavioral disorders and understand their management.
- Clinical Sciences
  - Evaluate the patient's physical and psychological state and identify factors that may contribute to orofacial pain.
  - Manage patients with craniofacial pain and be able to differentiate pain of a nondental origin.
  - Manage dental emergencies of infectious, inflammatory, and traumatic origin.
  - Provide basic life support measures for patients.
  - Develop and implement an effective office strategy for preventing and managing medical emergencies.
- Human and Applied Sciences
  - Apply knowledge of sociology, psychology, ethics, and other human and applied sciences to the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
  - Identify patient behaviors that may contribute to problems related to maintaining oral health.
  - Identify barriers that prevent patients from seeking oral health care.
  - Use appropriate and effective techniques to manage anxiety, distress, discomfort, and pain.
  - Manage dental fear, pain, and anxiety with appropriate behavioral and pharmacologic techniques.

**9. Health Promotion and Maintenance: Provide appropriate preventive and/or treatment regimens for patients with various dental carious states, using appropriate medical and surgical treatments.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge/Basic Sciences
  - Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
  - Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
- Clinical Sciences
  - 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.
  - Properly isolate the tooth/teeth structure from salivary moisture and bacterial contamination.
  - Differentiate between sound and compromised tooth structure.
  - Develop and implement an appropriate treatment plan for enamel surfaces that can be managed by remineralization therapies.
  - Develop and implement an appropriate treatment plan for tooth surfaces with caries involving the enamel and/or dentin.
  - Remove or treat carious tooth structure and restore with appropriate materials.
  - Determine when a tooth has such severe carious involvement as to require extraction.
- Human and Applied Sciences
  - Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of diseases; as well as the promotion and maintenance of oral health.
  - Identify patient behaviors that may contribute to problems related to maintaining oral health.
  - Identify barriers that prevent patients from seeking oral health care.

**Domain III: Oral Health Management**

**10. Management of Preventive Care: Evaluate and manage the implementation of preventative treatment modalities.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

- Foundational Knowledge/Basic Sciences
  - Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
  - Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as

their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.

- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of disease.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of disease as well as the promotion and maintenance of oral health.

b. Clinical Sciences

- Provide patient education to maximize oral health.
- Manage preventive oral health procedures.
- Perform therapies to eliminate local etiological factors to control caries, periodontal disease, and other oral diseases.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
- Identify patient behaviors that may contribute to problems related to maintaining oral health.
- Identify barriers that prevent patients from seeking oral health care.

**11. Treatment of Periodontal Disease: Evaluate and manage the treatment of periodontal diseases.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

a. Foundational Knowledge/Basic Sciences

- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of periodontal disease.
- Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of periodontal diseases.
- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of periodontal diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of periodontal diseases.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of periodontal diseases as well as the promotion and maintenance of the periodontium.

b. Clinical Sciences

- Develop an appropriate oral hygiene instruction plan.
- Treat and manage patients with periodontal diseases with up to localized moderate chronic periodontitis (including patient education, management of interrelated systemic health, and effective subgingival scaling and root planing).

- Demonstrate knowledge of therapeutic and referral options for treatment of patients with generalized moderate-to-severe chronic periodontitis.
- Evaluate the outcomes of periodontal therapies provided to their patients either within their office or services provided by a periodontal specialist to whom the patient may have been referred for treatment.
- Provide and assess success of periodontal maintenance for patients with up to localized moderate chronic periodontitis.
- Manage care of patients who are candidates for referral (those with moderate to severe chronic periodontitis, aggressive forms of periodontitis, mucogingival conditions, periodontal disease associated with systemic disease, or periodontitis that is refractory to treatment) by effective communication and coordination of therapy with a periodontal specialist when appropriate.
- Manage patients requiring modification of oral tissues to optimize restoration of form, function, and esthetics.
- Manage a comprehensive maintenance plan following the active phase of periodontal treatment.
- Manage patients with gingival esthetic needs.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of periodontal diseases as well as the promotion and maintenance of periodontal health.
- Identify patient behaviors that may contribute to periodontal problems (examples: poor oral hygiene and poor compliance with periodontal maintenance).
- Identify barriers that prevent patients from seeking periodontal care.

**12. Management of Disease of Pulpal Origin: Evaluate and manage diseases of pulpal origin and subsequent periapical disease.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

a. Foundational Knowledge/Basic Sciences

- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
- Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of disease.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of disease as well as the promotion and maintenance of oral health.

b. Clinical Sciences

- Prevent and manage pulpal disorders through the use of indirect and direct pulp capping and pulpotomy procedures.

- Assess case complexity of each endodontic patient.
- Manage endodontic emergencies.
- Manage nonsurgical endodontic therapy on permanent teeth.
- Recognize and manage endodontic procedural accidents.
- Manage pulpal and periapical disorders of traumatic origin.
- Manage endodontic surgical treatment.
- Manage bleaching of endodontically treated teeth.
- Evaluate outcome of endodontic treatment.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences to the prevention, diagnosis, and management of pulpal diseases as well as the promotion and maintenance of oral health.
- Identify patient behaviors that may contribute to problems related to maintaining oral health.
- Identify barriers that prevent patients from seeking oral health care.

13. **Basic Surgical Care: Provide basic surgical care to manage disease and improve oral health conditions.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

a. Foundational Knowledge/Basic Sciences

- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
- Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of diseases.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.

b. Clinical Sciences

- Perform uncomplicated extractions of teeth.
- Manage surgical extraction, common intraoperative and postoperative surgical complications.
- Manage pathological conditions, e.g., lesions requiring biopsy, localized odontogenic infections, impacted third molars, and other referrals.
- Manage patients with dentofacial deformities or patients who can benefit from preprosthetic surgery.
- Manage oral and maxillofacial pathologic conditions using pharmacologic and nonpharmacologic methods.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences to the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.

- Identify patient behaviors that may contribute to problems related to maintaining oral health.
- Identify barriers that prevent patients from seeking oral health care.

14. **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.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:

a. Foundational Knowledge/Basic Sciences

- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
- Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
- Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of diseases.
- Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.

b. Clinical Sciences

- Perform mixed dentition analyses utilizing the Moyers and Nance methods.
- Perform a Steiner cephalometric analysis to evaluate for individual sagittal plane skeletodental discrepancies compared to normative data.
- Evaluate the noncephalometric, skeletodental facial esthetics of the child, adolescent, or adult patient.
- Manage multidisciplinary treatment cases involving orthodontics.
- Recognize the effects of abnormal swallowing patterns, mouth breathing, bruxism, and other parafunctional habits on the skeletodental structures; and manage treatment of these conditions.

c. Human and Applied Sciences

- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences in the prevention, diagnosis, and management of disease as well as the promotion and maintenance of oral health.
- Identify patient behaviors that may contribute to problems related to maintaining oral health.
- Identify barriers that prevent patients from seeking oral health care.

15. **Restoration and Replacement of Teeth: Manage the restoration of individual teeth and replacement of missing teeth for proper form, function, and esthetics.**

Examples for a new dentist to demonstrate competence in this area may include, but are not limited to, the following:



- a. Foundational Knowledge/Basic Sciences
- Apply knowledge of molecular, biochemical, cellular, and systems-level development, structure, and function to the prevention, diagnosis, and management of disease.
  - Apply knowledge of the principles of genetic, congenital, and developmental diseases and conditions as well as their clinical features to understand patient risk in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of the cellular and molecular basis of immune and nonimmune host defense mechanisms in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of the biology of microorganisms in physiology and pathology in the prevention, diagnosis, and management of diseases.
  - Apply knowledge of pharmacology in the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
- b. Clinical Sciences
- Complete digital intraoral scans for diagnosis and treatment planning purposes.
  - Assess teeth for restorability.
  - Assess esthetic and functional considerations.
  - Manage preservation of space following loss of teeth or tooth structure.
  - Select appropriate methods and restorative materials.
  - Design fixed and removable prostheses.
  - Digitally design indirect restorations.
  - Implement appropriate treatment sequencing.
  - Perform biomechanically sound preparations.
  - Fabricate and place biomechanically sound provisional restorations.
  - Make impressions for diagnostic and treatment casts.
  - Obtain anatomic and occlusal relation records for articulation of casts.
  - Prepare casts and dies for the construction of restorations and prostheses.
  - Manage the laboratory fabrication of restorations and prostheses.
  - Evaluate and place restorations that are clinically acceptable.
  - Instruct patients in follow-up care of restorations and prostheses.
  - Determine causes of postoperative problems after restoration and resolve such problems.
  - Recognize and manage occlusal discrepancies
- c. Human and Applied Sciences
- Apply knowledge of sociology, psychology, ethics, and other human and applied sciences to the prevention, diagnosis, and management of diseases as well as the promotion and maintenance of oral health.
  - Identify patient behaviors that may contribute to problems related to maintaining oral health.
  - Identify barriers that prevent patients from seeking oral health care.

## Departments and faculty

- Dental Anesthesiology (p. 217)
- Dental Education Services (p. 217)
- Division of General Dentistry (p. 217)
- Endodontics (p. 218)
- Oral & Maxillofacial Surgery (p. 218)
- Orthodontics (p. 218)
- Pediatric Dentistry (p. 219)
- Periodontics (p. 219)
- Radiology and Imaging Sciences (p. 218)

## 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

Official transcripts and documents are to be sent to:

Loma Linda University  
Admissions Processing  
11139 Anderson Street  
Loma Linda, CA 92350

## Admission requirements

Although the pre dental 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

A complete sequence of English composition (two semesters or three quarters) to include composition and literature is required. Students with a Baccalaureate degree are considered to have met this requirement.

### Natural Sciences

A complete course sequence, two semesters or three quarters, is required in each science listed unless otherwise noted.

General biology with laboratory  
General chemistry with laboratory  
General physics with laboratory  
Organic chemistry with laboratory  
Biochemistry (4 semester units or 6 quarter units)

### Electives (strongly recommended in order of priority)

Histology  
Human gross anatomy  
Systems physiology  
Microbiology  
Cell and molecular biology

Immunology  
 Neuroscience  
 Genetics  
 Ceramics  
 Management  
 Developmental psychology  
 Accounting  
 Nutrition

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 an accredited college or university. Preference is given to applicants who have completed or will complete the requirements for a baccalaureate degree prior to admission. A maximum of 64 semester or 96 quarter units of credit may be accepted from an accredited junior or community college.

A complete academic year of class work (8 semester or 12 quarter units) in each subject: general biology, general chemistry, organic chemistry, and general physics are required. Also required is a complete sequence of English Composition (two semesters or three quarters). The biochemistry requirement is one semester or a minimum of (four semester units or 6 quarter units). All science prerequisites must be completed within five years prior to matriculation, 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.

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 an accredited college or university in the U.S. or Canada. This includes the required specific core sciences in the areas of biology, general chemistry, organic chemistry, biochemistry, and physics (all sciences except Biochemistry must include laboratories). A grade of C or above in each course completed is required. (A grade of C- will not be accepted.)

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.adea.org/>. Due to the high volume of applicants LLUSD recommends that AADSAS applications be submitted before August. The following is a step-by-step process for completing an application to Loma Linda University (LLU).

1. *AADSAS application.* Is submitted to the American Association of Dental Schools Application Service between June 1 and November 1 at [www.adea.org](http://www.adea.org) where it is processed in approximately four to six weeks prior to being sent to the LLUSD Office of Admissions.
2. *Supplemental application.* After AADSAS completes coursework verification. The applicant then receives an email invitation from LLU to complete an electronic supplemental application.
3. 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 \$150.
4. *Transcripts.* Official transcripts must be sent to AADSAS at the time application is submitted. When an applicant becomes an accepted student, official transcripts—mailed directly from all colleges/universities to LLU—are required and must be submitted by August 1 in order for the student to be registered for the first academic year of classes.
5. International students must submit official transcripts to LLU at time of supplemental application.
6. *References.* The applicant is asked to supply a minimum of three personal references. A reference from a pre-professional committee or science professor; a reference from an employer or professional and a reference from a spiritual leader. Applicants who have attended a college or university that has a preprofessional committee that prepares preprofessional evaluations, are encouraged to submit a preprofessional evaluation to LLUSD. 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. All recommendation letters sent to AADSAS will be sent to Loma Linda University School of Dentistry along with the application.
7. *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. Entering D1 students are 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 applicant is invited to interview.
8. *Interview.* The applicant's records will be screened when the supplemental application, recommendations, transcripts, and DAT scores are on file. The applicant may then be invited to the school for a personal interview. An interview is required for admission as it provides an opportunity for evaluation of noncognitive factors, including communication skills, core values, motivation, and passion for 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.
9. *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 dentist. Prior to interviewing, applicants are expected

to complete a minimum of fifty (50) hours of observation/work experience in a dental facility, twenty (20) of which must be done with a general dentist.

10. *Acceptance.* The student receives notification of an acceptance via a phone call, email and letter signed by the Dean. 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.
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.

12. *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.

13. *Financial requirement.* All first-year students are required to pay their first year's tuition, enrollment fee, and program fees before they can register for classes. In addition, international students (all non-U.S. Citizens and non-Permanent Residents) must provide documentary evidence of sufficient funds for their second year. International students will receive the necessary visa application and instructions after they have paid their first year's tuition and enrollment fee and submitted their second-year payment plan. In order to complete registration, the remaining program fees must be paid.
14. *Financial aid.* A financial aid advisor and financial aid programs are available. Please contact the Office of Financial Aid by email, [finaid@llu.edu](mailto:finaid@llu.edu); or by telephone, 909/558-4509. Website information is located at <http://www.llu.edu/students/financial-aid/>.

## 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 Admissions:

- 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 Admissions for both pre dental and dental school courses completed;
- Dental Admission Test results.

## Program requirements

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
<b>First Year (Term 1)</b>						
DENT 700A	Dental Fundamentals I	50			50	5.0
DENT 701L	Dental Fundamentals I Laboratory		90		90	3.0
DENT 710A	Professionalism, Mission, and Personal Development I	25			25	2.5
DENT 720A	Patient-Centered Care I			60	60	2.0
DENT 730A	Biomedical Sciences and Oral Ecosystems I	135	31		166	14.5
DNES 500	Curricular Practical Training <sup>1,4</sup>		120		120	0.0
RELR 776	Christian Spirituality and the Health Professional	30			30	2.0-3.0
<b>First Year (Term 2)</b>						
DENT 700B	Dental Fundamentals I	60			60	6.0
DENT 702L	Dental Fundamentals I Laboratory		120		120	4.0
DENT 710B	Professionalism, Mission, and Personal Development I	15			15	1.5
DENT 720B	Patient-Centered Care I			135	135	4.5
DENT 730B	Biomedical Sciences and Oral Ecosystems I	155	92		247	18.5
RELE 734	Christian Ethics for Dentists	20			20	2.0
<b>Second Year (Term 1)</b>						
DENT 750A	Dental Fundamentals II	150			150	14.0
DENT 760A	Professionalism, Mission, and Personal Development II	15			15	1.5
DENT 770A	Patient-Centered Care II	60	90		150	9.0
DENT 780A	Biomedical Sciences and Oral Ecosystem II	80			80	8.0
<b>Second Year (Term 2)</b>						

DENT 750B	Dental Fundamentals II	140		140	14.0	
DENT 760B	Professionalism, Mission, and Personal Development II	15		15	1.5	
DENT 770B	Patient-Centered Care II	30	180	210	9.0	
DENT 780B	Biomedical Sciences and Oral Ecosystem II	100		100	10.0	
<b>Third Year (Term 1)</b>						
DENT 800A	Dental Fundamentals III	130	90	220	16.0	
DENT 810A	Professionalism, Mission, and Personal Development III	45		45	4.5	
DENT 820A	Patient-Centered Care III			360	12.0	
DENT 830A	Biomedical Sciences and Oral Ecosystems III	30		30	3.0	
DNES 800	Interprofessional Laboratory Experience <sup>2</sup>		4	4	0.0	
RELR 717	Diversity and the Christian Health Professional	20		20	2.0	
<b>Third Year (Term 2)</b>						
DENT 800B	Dental Fundamentals III	65	30	95	7.5	
DENT 810B	Professionalism, Mission, and Personal Development III	35		35	3.5	
DENT 820B	Patient-Centered Care III			360	12.0	
DENT 830B	Biomedical Sciences and Oral Ecosystems III	50		50	5.0	
RELR 749	Marriage and Family Wholeness	20		20	2.0	
RELT 726	Jesus <sup>3</sup>	20		20	2.0	
<b>Fourth Year (Term 1)</b>						
DENT 850A	Dental Fundamentals IV	20	30	50	3.0	
DENT 860A	Professionalism, Mission, and Personal Development IV	35		35	3.5	
DENT 870A	Patient-Centered Care IV			450	15.0	
DENT 880	Biomedical Sciences and Oral Ecosystems IV	20		20	2.0	
<b>Fourth Year (Term 2)</b>						
DENT 850B	Dental Fundamentals IV	10	30	40	2.0	
DENT 860B	Professionalism, Mission, and Personal Development IV	35		35	3.5	
DENT 870B	Patient-Centered Care IV			450	15.0	
RELR 715	Christian Dentist in Community	20		20	2.0	
<b>Total Units</b>		<b>1635</b>	<b>907</b>	<b>1815</b>	<b>4357</b>	<b>248-249</b>

<sup>1</sup> DNES 500 Curricular Practical Training may be repeated during each term

<sup>2</sup> DNES 800 Interprofessional Laboratory Experience may be repeated twice during the third year

<sup>3</sup> May be substituted with another 700-level RELT course in religion including RELT 716, 718, or 740.

<sup>4</sup> Fulfills service learning requirement

## Normal time to complete the program

4 years (15 academic quarters) – full-time enrollment required

## Dental Anesthesiology

The Department of Dental Anesthesiology 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 clinical pharmacology, medical emergency management, and the use of local anesthetics is provided to 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. Anesthesia management of the medically and physically compromised dental patient is emphasized.

### Primary faculty

Carlos Poni

## Dental Education Services

The Department 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. Patient, staff, and dentist interactions are examined in light of varied personality characteristics. In addition, the art and science of establishing and operating a successful practice are examined. 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 underserved settings outside the dental school clinic—providing the experience of involvement in the real world—"to make man whole."

### Interim chair

Robert A. Handysides

### Primary faculty

Jack C. Burdick IV

Eun-Hwi E. Cho

Edna M. Loveless

Lancelot S. McLean

Kathleen L. Moore

Udochukwu E. Oyoyo

P. Esther Valenzuela

Krista J. Weymar

Wu Zhang

### Emeritus faculty

James M. Crawford

James Kettering

George M. Lessard

## Division of General Dentistry

The Division of General Dentistry encompasses the disciplines of oral diagnosis, operative dentistry, fixed prosthodontics, and removable prosthodontics. It is the aim of the division to provide each student with a

thorough understanding of both technical and clinical skills which enable comprehensive patient care. The primary objectives of the Division of General Dentistry can be described on two levels: preclinical didactic courses and clinical education. The division also aims at instilling in each student an interest in exploring new frontiers in dentistry and in recognizing the need for a continued quest for knowledge.

The division houses the International Dentistry Program, which is responsible for the management of preclinical and clinical education for students.

### Head

John B. Won

### International Dentist Program director

Michael J. Fitzpatrick

### Primary faculty

Edward Albrecht

Daniel R. Armstrong

H. Brooks Burnsed

Perry D. Burtch

Vincent K. Chee

Eun-Joo P. Choi

Heidi L. Christensen

Kwang-Su Chung

L. Todd Cochran

Ronald E. Forde

Robert L. Fritz

Gary J. Golden

Wendy C. Gregorius

Paula M. Izvernari

Balsam F. Jekki

Rami R. Jekki

Zina F. Johnston

Lynda M. Juhl-Burnsed

Vaughn Kearbey

Jeong Suk Kim

Jessica Kim

Edward Ko

Iris H. Nam

Doyle R. Nick

Steven Powell

Erin E. A. Richards



Paul L. Richardson  
 Holli C. Riter  
 Clyde L. Roggenkamp  
 Ronald L. Sorrels  
 Raghad J. Sulaiman  
 Daniel E. Tan, Jr.  
 L. Parnell Taylor  
 F. Jose Torres  
 James R. Trott  
 Robert D. Walter

**Emeritus faculty**

William H. Heisler

## Endodontics

Endodontics is the discipline of dentistry concerned with the morphology, physiology, and pathology of 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. Department faculty members 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 provide patients with optimum oral health care in a setting that promotes the mission of the School of Dentistry.

**Chair**

Tory Silvestrin

**Program Director**

Tory Silvestrin

**Primary faculty**

Shelley Aronson

Richard J. Gray

Robert A. Handysides

Steven G. Morrow

Rinku Parmar

**Emeritus faculty**

Leif K. Bakland

## Radiologic and Imaging Services

The Department of Radiology and Imaging Sciences provides support in the form of didactic, preclinical, and clinical instruction to students within the School of Dentistry. Courses offered cover principles of acquisition of images, radiographic recognition and interpretation of normal and disease conditions of the oral cavity and hard tissues, patient assessment, and incorporation of findings into treatment planning. The department aims to enable students to excel in compassionate and knowledgeable service to patients that is based on a comprehensive gathering and interpretation of pertinent radiographic data. The

Radiologic and Imaging Services clinical program is overseen by Clinic Administration. The didactic components are overseen by the Division of General Dentistry, as well as where faculty reside.

**Primary faculty**

Dwight D. Rice

## Oral and Maxillofacial Surgery

The Department of Oral and Maxillofacial Surgery offers courses that include didactic and clinical instruction to prepare the student for the practice of dentistry. These courses cover aspects of general, systemic, and oral pathology; patient evaluation, including differential diagnoses; treatment planning; and the identification and management of complications throughout all phases of treatment. Clinical instruction focuses on proper surgical technique for extraction of teeth, alveoplasty, and biopsies. Additionally, proper prescription writing and suturing techniques are evaluated.

**Chair**

Alan S. Herford

**Director, Advanced Specialty Education Program**

Jayini S. Thakker

**Director, Predoctoral Program**

Carlos Moretta

**Primary faculty**

Anupama Grandhi

Murray K. Jacobs

Frederick Mathews

Susan D. Richards

Susan Roche

Rafik Rofael

**Emeritus faculty**

Lane C. Thomsen

## Orthodontics

Pre-doctoral courses in the Department of Orthodontics, as outlined by the American Dental Association, apply 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 they are 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.

**Chair**

V. Leroy Leggitt

**Director, Advanced Specialty Education Program**

Toufic M. Jeiroudi

**Faculty**

James Farrage

Gabriela Garcia

Roland Neufeld

Kitichai Rungcharassaeng

R. David Rynearson

### **Distinguished professor**

Joseph M. Caruso

## **Pediatric Dentistry**

The Department of Pediatric Dentistry is committed to teaching clinical techniques in dentistry for children, while providing an emotionally healthy environment for the child patient. The faculty has developed didactic, laboratory, and clinical learning environments in pediatric dentistry—a broad experience designed to prepare the student for general pediatric dentistry practice.

### **Chair**

Bonnie A. Nelson

### **Program director**

Jung-Wei Chen

### **Primary faculty**

Shahnaz Bonyanpoor

Wesley K. Okumura

Samah Omar

Laurita Siu

Melva Wyatt

### **Emeritus faculty**

John E. Peterson, Jr.

## **Periodontics**

The Department of Periodontics provides education and training for predoctoral, dental hygiene, and advanced education students in the art and science of periodontics, which encompasses the study of the supporting structures of the teeth as well as the etiology, pathogenesis, diagnosis, and treatment of diseases that affect those supporting structures. The study of periodontics helps form basic concepts of health and disease, which are applied to the treatment of periodontal diseases as well as 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."

### **Chair**

Yoon-Jeong Kim

### **Interim director, Advanced Specialty Education Program**

Yoon-Jeong Kim

### **Primary faculty**

Amelia David

Mario Flores

Ahmed Khocht

Yoon-Jeong Kim

Sangmoo Scott Lee

Leticia Lenoir

Manoochehr Goshtasbpour Parsi

Nima Sarmast

Loredana E. Trica

Klaus D. Wolfram

### **Emeritus faculty**

R. Leslie Arnett, Jr.

## **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 the Doctor of Dental Surgery (D.D.S.) degree in the United States. More than 500 students from 81 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 (27 calendar months), but may be extended, when necessary, to meet the particular needs of students.

## **Program learning outcomes**

By the end of the program, the graduate should be able to:

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. Maintain physical, emotional, financial, and spiritual health in one's personal life.
5. Apply ethical principles to professional practice.

## **Regulations**

The student is subject to the conditions of registration, attendance, financial policy, governing practices, and graduation requirements outlined in the Academic Policies and Information (p. 33) section and in the School of Dentistry (p. 196) general information section of this CATALOG.

### **Program director**

Michael J. Fitzpatrick

### **Faculty**

H. Brooks Burnsed

Paula M. Izvernari

Balsam F. Jekki

Rami R. Jekki

Ronald L. Sorrels

Klaus D. Wolfram

## Admissions

Applications are available online at <http://www.adea.org/>. Requests for information are accepted by email or telephone.

### Admission requirements

- Dental degree from a recognized international dental school.
- Successful completion of the National Dental Board Examination, Integrated or Part I and Part II.
- TOEFL examination, with a minimum score of 20 in each area of the Internet-based examination. To be competitive, a score of 100 or higher is recommended.
- Dental school transcript (evaluated by an LLU-approved organization).

Other documentation is required, as outlined in the application. 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 Centralized Application for Advanced Placement for International Dentists (CAAPID) application is completed online by the applicant at <http://www.adea.org/>. It takes approximately four weeks for CAAPID applications to be processed and sent to the dental school where the applicant has applied.
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 30 days. This includes an essay specific to Loma Linda University, a photograph, and the application fee of \$150.
4. Transcripts. Official transcripts and diploma or certificate with English translations and documentation of all postsecondary education must be mailed directly to LLU from all colleges/universities attended by the student. If the dental education was received in India, transcripts must be sent directly from the University and not the dental school college. Applicants submitting a WES evaluation are exempt from submitting official transcripts to LLU.
5. Official foreign educational credential evaluation report (course by course evaluation) mailed directly from WES, ECE, or AACRAO; links available at [www.llu.edu/apply/intltrans.html](http://www.llu.edu/apply/intltrans.html) (<http://www.llu.edu/apply/intltrans.html>)
6. Non-English language documents. Must be submitted in their original language along with an English translation.
7. 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.
8. References. Two letters of recommendation, preferably from former teachers or mentors who can attest to applicant's character, conduct, and professional ability. 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.
9. Photograph. A recent passport size photograph uploaded through your supplemental application.
10. Deadline. To be considered, the CAAPID and LLU applications and all required documents must arrive at the School of Dentistry Office of Admissions by June 1. All documents sent to Loma Linda become property of LLU.
11. Selection process
  - Screening: Completed applications submitted before the application deadline will be given priority consideration by the Office of Admissions.
  - Admissions testing: Is by invitation only and is conducted one or more Sundays in the fall.
  - Interview : Based on admissions testing, applicants may be invited to interview .
  - Final selection: The applicant's admissions testing results, interview and application file are presented to the School of Dentistry Admissions Committee for final selection. Thirty-two applicants are accepted each year for enrollment in the International Dentist Program which begins in the summer term.
12. Deposits. A student accepted into the International Dentist Program must submit a deposit of \$4,000 USD to Loma Linda University within 30 days of acceptance. Deposits become part of the first term's tuition. Failure to submit this deposit will result in the loss of the applicant's position in the class.
13. 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 students eligible for government-sponsored financial aid programs, only the first term tuition is required at the initial registration.
14. Financial aid. A financial aid advisor and financial aid programs are available. Applicants should contact the Office of Financial Aid by email [finaid@llu.edu](mailto:finaid@llu.edu) ([id@llu.edu](mailto:finaid@llu.edu)); or by telephone, 909-/558-4509. Website information can be obtained at [llu.edu/central/ssweb/finaid](http://llu.edu/central/ssweb/finaid).
15. 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 registration holds, the student is encouraged to return 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

Curriculum for cohort starting Spring 2022.

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
<b>Second Year</b>						
DNES 504	Curricular Practical Training for IDP <sup>1,2</sup>		60		60	0.0
ENDN 831	Endodontics I	10			10	1.0
ENDN 832	Endodontics II		60		60	2.0
ENDN 834	Endodontics III	12			12	1.0
IDPC 815	Clinical Orientation I - IDP	11	30		41	2.0
IDPO 725	Patient Assessment and Data Management II	11	33		44	2.0
IDPO 826	Oral and Maxillofacial Surgery	22			22	2.0
IDPO 827	Oral and Maxillofacial Surgery	22			22	2.0
IDPP 754	Fundamentals of Periodontics	22			22	2.0
IDPR 701	Operative Dentistry I	11	33		44	2.0
IDPR 761	Removable Prosthodontics I	11	33		44	2.0
<b>Third Year (Term 1)</b>						
IDPC 816	Clinical Orientation II - IDP		30		30	1.0
IDPC 817	Clinical Orientation III - IDP			30	30	1.0
IDPC 826	General Clinics			180	180	6.0
IDPO 720	Oral and Maxillofacial Radiology for the IDP Program	20			20	2.0
IDPO 726	Patient Diagnosis and Treatment Planning	11	33		44	2.0
IDPP 756	Pediatric Dentistry	22			22	2.0
IDPP 756L	Pediatric Dentistry Laboratory		44		44	1.0
IDPR 702	Operative Dentistry II	11	33		44	2.0
IDPR 704	Introduction to Occlusion	22			22	2.0
IDPR 762	Removable Prosthodontics II	11	33		44	2.0
IDPR 763	Removable Prosthodontics III	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 854	Implant Dentistry for the IDP Student	22	44		66	3.0
ORDN 801	Minor Tooth Movement	18	16		34	2.0
ODRP 807	Oral Medicine I: TMJ/Orofacial Pain I	12			12	1.0
ODRP 821	Special Care Dentistry	13			13	1.0
<b>Third Year (Term 2)</b>						
DENT 800B	Dental Fundamentals III	65	30		95	7.5
DENT 810B	Professionalism, Mission, and Personal Development III	35			35	3.5
DENT 820B	Patient-Centered Care III			360	360	12.0
DENT 830B	Biomedical Sciences and Oral Ecosystems III	50			50	5.0
RELR 749	Marriage and Family Wholeness	20			20	2.0
RELT 740	World Religions and Human Health	30			30	2.0-3.0
<b>Fourth Year (Term 1)</b>						
DENT 850A	Dental Fundamentals IV	20	30		50	3.0
DENT 860A	Professionalism, Mission, and Personal Development IV	35			35	3.5
DENT 870A	Patient-Centered Care IV			450	450	15.0
DENT 880	Biomedical Sciences and Oral Ecosystems IV	20			20	2.0
<b>Fourth Year (Term 2)</b>						
DENT 850B	Dental Fundamentals IV	10	30		40	2.0

DENT 860B	Professionalism, Mission, and Personal Development IV	35		35	3.5
DENT 870B	Patient-Centered Care IV		450	450	15.0
RELR 715	Christian Dentist in Community	20		20	2.0
<b>Total Units</b>		<b>667</b>	<b>671</b>	<b>1470</b>	<b>2808</b>
					<b>130-131</b>

<sup>1</sup> This course may be taken in the second, third, and fourth year.

<sup>2</sup> Fulfills service learning requirement

### Normal time to complete the program

Three (3) years (27 months) at LLU—full-time enrollment required



## Advanced Dental Education

The School of Dentistry offers advanced dental education programs in specialty and nonspecialty disciplines of dentistry. Postdoctoral certificates, Master of Science (M.S.), and Master of Science in Dentistry (M.S.D.) degrees are available. The purpose of these programs is to offer candidates an opportunity to integrate advanced clinical training with meaningful exposure to applied basic science and research. For additional information and to submit an online application, interested applicants should visit the School of Dentistry website (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 include:

- Endodontics
- Implant Dentistry
- 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, 3311  
Loma Linda, CA 92350

[llu.edu/dentistry/gradprograms](http://llu.edu/dentistry/gradprograms) (<http://www.llu.edu/dentistry/gradprograms/>)

## Program learning outcomes

Graduate students and residents in advanced dental education programs are expected to:

1. Describe 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. State 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 Oral and Maxillofacial Surgery and Pediatric Dentistry programs. For details, contact the program coordinator personally.

## Tuition

Tuition and fees quoted in the school financial information section of this CATALOG are for the academic year 2022-2023.

## Thesis

The student must complete a research project presented in thesis format and orally defend it 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 choice.

## 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

### Admission requirements for advanced dental education programs/postdoctoral programs

An appropriate degree from an accredited college or university is required for admission into the advanced dental education programs and postgraduate programs. A doctoral degree in dentistry (Doctor of Dental Surgery or Doctor of Dental Medicine) or the equivalent is required for admission to all programs. The applicant should have achieved a general grade point average of not less than 3.0 on a 4.0 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 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 assistant dean for advanced dental education. The master's degree thesis must be completed, defended, and accepted in final form by both the graduate program and the Faculty of Graduate Studies. Students

have up to five years from the date of acceptance of the certificate program to complete the requirements for the M.S. degree. All the M.S.D.

requirements may be completed during the program but no later than one year from the candidate's anticipated program completion date.

## Admissions criteria for advanced dental education programs 2022

Program	Official Transcript(s) <sup>1</sup>	Cumulative G.P.A. <sup>2</sup>	GRE <sup>3</sup>	National Boards Part I <sup>3</sup>	DAT	TOEFL <sup>4</sup>	Letters of Recommendation
Endodontics <sup>10</sup> (27 mo./2 positions)	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 <sup>11</sup> (6 yrs./2 positions)	Required	3.0	Not required for certificate program	Required (all applicants) score of 86 or higher	Not Required	Required (internationally trained)	3
Orthodontics and Dentofacial Orthopedics <sup>6,7,9</sup> (27 mo./6 positions)	Required	3.0	Required	Required (all applicants)	Required (all applicants)	Required (internationally trained)	3
Pediatric Dentistry <sup>10,12</sup> (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 <sup>8</sup> (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
ENDN	1/1/2022	7/20/22	July	5/2022	7/05/2022	July 1	Late September
IMPD	1/1/2022	8/31/2022	November	n/a	n/a	July 1	June 30
OMFS	1/1/2022	9/15/2022	January	5/2022 Match participant	9/1/2022	July 1	June 30
ORDN	1/1/2022	8/1/2022	November	n/a	n/a	End of June	Late September
PEDN	5/1/2022	11/15/2022	January	5/2022 Match participant	11/1/2022	July 1	June 30
PERI	1/1/2022	9/1/2022 (rolling admissions)	September	5/2022	8/15/2022	July 1	June 30
PROS	1/1/2022	8/15/2022	September	5/2022	8/1/2022	July 1	June 30

<sup>1</sup> *Transcripts.* Transcripts from all postsecondary schools from which credit was received, whether or not the work pertains to your LLU degree, are required to complete your application.

<sup>2</sup> *Grade Point Average (G.P.A.).* A cumulative G.P.A. of 3.0 (on a 4.0 scale) is required for admission.

<sup>3</sup> *National Boards, Part I.* Refers to Part I of the two-part U.S. National Board Examinations. Part II must also be submitted when available. All must be passing grades.

<sup>4</sup> *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.

<sup>5</sup> *Dental License.* All applicants for the Advanced Education Program in Oral & Maxillofacial Surgery program must have a Californian 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 *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.
- 8 *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.
- 9 *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.
- 10 *Endodontics and Pediatric Dentistry.* All applicants for the Endodontic and 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.
- 11 *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.
- 12 *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 the following requirements.

### Admission process

- 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
- 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. It 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.
- The Part I form must be signed by the applicant's program director and the research guidance committee (RGC) members.
- 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.
- 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

- 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
- 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.
  - Form A must be signed by the applicant's program director and research guidance committee (RGC) members.
  - 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.
  - Accepted applicants will receive a letter of admission from the associate dean for advanced education. The prospective student must acknowledge acceptance of their 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 MS (marginally satisfactory) grades 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	Good performance.
B	3.0	Satisfactory performance.
B-	2.7	Minimum passing grade without remediation; Cumulative G.P.A. must be 3.0 or higher to avoid academic probation.
C+	2.3	Remediation required and cumulative G.P.A. must be 3.0 or higher to avoid academic probation.

C	2.0	Remediation required and cumulative G.P.A. must be 3.0 or higher to avoid academic probation.
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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	Unsatisfactory; Course must be retaken. Cumulative G.P.A. must be 3.0 or higher to avoid academic probation.
D	0.0	Failure; course must be retaken.
F	0.0	Failure; Course must be retaken; Academic probation required.
S	none	Satisfactory performance; Equivalent of a B grade or better.
MS	none	Marginally satisfactory; minimum passing grade; equivalent to a B- grade; Multiple MS grades may result in academic probation.
U	none	Unsatisfactory; The U grade is not computed in the G.P.A. The Course must be repeated to count toward a certificate and/or degree.

University policy states that "a student may repeat a course only once, and no more than two courses may be repeated in a student's degree program."

## Academic criteria for academic advancement and program completion

### Process to remediate a course

1. A detailed written plan must be developed by the course director/program director outlining how deficiencies will be remediated and reassessed.
2. The plan must be approved by the Office of Advanced Dental Education.
3. The postdoctoral student/resident is required to register for Advanced Dental Education Remediation (GRDN 700) with the subtitle of the course that is being remediated.
4. Remediation must be accomplished during the academic quarter immediately following the quarter in which the unsatisfactory grade was received.
5. Successful remediation of a course will not result in a grade change for the course.
6. Failure to successfully remediate a course will result in the need for the postgraduate student/resident to repeat the course while on academic probation.
7. The postdoctoral student/resident may exercise the option to retake the course which may result in a grade change for the course.

### Process to repeat a course

1. The postdoctoral student/resident will be placed on academic probation.
2. The postdoctoral student/resident must register for the course to be repeated at the earliest opportunity.
3. The postdoctoral student/resident must receive a minimum grade of B- to continue in the advanced dental education program.

## Academic disciplinary policy for advanced education programs

### Academic probation

Academic probation for postdoctoral students/residents will be for a minimum of one academic quarter following the quarter in which the

unsatisfactory performance was noted. Probationary status will be reviewed on a quarterly basis until successful remediation has been recorded. Such action must be confirmed by memorandum to the student.

Under the following conditions, a postdoctoral student/resident will be sent an advisory letter from the Office of Advanced Dental Education regarding the potential for placement on academic probation.

1. Term G.P.A. below 3.0 (B)
2. One or more courses with a grade of C+ or lower
3. More than one course with a grade of MS.

A postdoctoral student/resident will be placed on academic probation if they meet one or more of the following conditions:

1. Cumulative G.P.A. below 3.0.
2. One or more courses with a grade of C, or lower.
3. Failing or unsatisfactory grades in any course(s) required for the specialty certificate, Master of Science (M.S.) degree, or Master of Science in Dentistry (M.S.D.) degree programs.
4. Total of three or more MS grades.

### 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 postdoctoral 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, they 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, they will be considered for academic discontinuation.

### Restrictions for a postdoctoral student/resident 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 elective courses.
3. May not participate in elective off-campus, service learning, or mission activities.

4. Remains on academic probation until all terms of the probation sanctions have been fulfilled, unless the postdoctoral student/resident is discontinued.

#### **Remedial action (remediation)**

A postdoctoral student/resident who is not performing up to expectations (academic and professional) may receive the following:

1. Restriction of clinical privileges by the program director.
2. Academic probation (Level I to III) – upon recommendation of the Program Director by the Assistant Dean for Advanced Dental Education.
3. Professional Standards (Behavioral) probation (Level I to III) – (See Professional Standards Review Process in *Loma Linda University Student Handbook*).
4. Clinical probation (Level I to III) – upon recommendation of the Program Director by the Assistant Dean for Advanced Dental Education.
5. Discontinuation – upon recommendation of the Program Director to the Assistant Dean for Advanced Dental Education. Discontinuation must be approved by the Dean.

#### **Probation**

All recommendations to the Assistant Dean for Advanced Dental Education for probation 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 postdoctoral 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 or 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, professional standards (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 the academic quarter immediately following the quarter in which the unsatisfactory performance was documented. Probationary status will be reviewed on a quarterly basis until successful remediation has been documented. This information will be conveyed to the postdoctoral student/resident verbally and in writing.

#### **Continuation**

Postdoctoral students/residents 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 Assistant Dean for Advanced Dental Education will inform University Records of the decision to continue a postdoctoral student/resident and state the anticipated length of that continuation. Program directors make the determination to recommend continuing or discontinuing a postdoctoral student/resident and when the postdoctoral student/resident has completed their program. Recommendation for continuation will be submitted to the Assistant Dean for Advanced Dental Education for review and approval.

#### **Discontinuation**

Postdoctoral students/residents who do not achieve required measurable improvement by the end of the prescribed remediation and counseling periods may be recommended for discontinuation by their Program

Director to the Assistant Dean for Advanced Dental Education for review.

Recommendation to discontinue a postdoctoral student/resident will be submitted by the Assistant Dean for Advanced Dental Education, in writing, to the Dean for review and action.

## **Programs**

- Endodontics – post-D.D.S. Certificate, M.S.D., M.S. (p. 228)
- Implant Dentistry – post-D.D.S. Certificate, M.S.D., M.S. (p. 231)
- Oral and Maxillofacial Surgery – post-D.D.S. Certificate (p. 232)
- Orthodontics and Dentofacial Orthopedics – post-D.D.S. Certificate, M.S. (p. 233)
- Pediatric Dentistry – post-D.D.S. Certificate, M.S.D., M.S. (p. 234)
- Periodontics – post-D.D.S. Certificate, M.S.D., M.S. (p. 236)
- Prosthodontics – post-D.D.S. Certificate, M.S.D., M.S. (p. 237)

## **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 the following requirements.

#### **Degree requirements**

1. Students must perform scholarly activities 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. Goals must be worthy and achievable. 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](http://llu.edu/dentistry/gradprograms) (<http://www.llu.edu/dentistry/gradprograms/>)). Candidates complete sections I and II of Part II form to indicate their anticipated degree completion dates.
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 anticipated 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 performs a 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 activities/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. Goals must be worthy and achievable.
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 dates.
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 a 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

**The dual majors are no longer an option at this time.**

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. 237) and implant dentistry (p. 231), comparison (p. 240); or prosthodontics (p. 238) and implant dentistry (p. 231), comparison (p. 241)—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 Implant Dentistry (approximately 4 1/2 years in length)
- Prosthodontics and Implant Dentistry (approximately 4 1/2 years in length)

## Endodontics – Certificate (post-D.D.S.), M.S.D., M.S.

The mission of the 27-month Endodontics-Advanced Specialty Program is to prepare endodontists who are proficient in the art of treating teeth requiring root canal therapy, who possess an in-depth biological knowledge related to the science of endodontics, and who have participated in endodontic research and teaching. The mission of the 36-month Endodontics-Advanced Program is to provide additional care for patients who have failed root canal treatment and require a single tooth implant. The 36-month program consists of the entire 27-month curriculum as well as additional courses in periodontics, radiology, and implant dentistry (36-month track is currently closed for admission).

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Diagnose and plan treatment for various pulpal and periapical conditions, alone or in concert with other dental and medical practitioners.
2. Demonstrate an advanced level of knowledge of the biomedical sciences related to endodontics and whole-patient care.
3. Participate in endodontic research and teaching.
4. Identify and discuss the principles of good practice management.
5. 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.\*

\* Only applies to the 36-month program.

The programs begin in July and require 27 or 36 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, and the additional time must be in residence.

Graduates in both the certificate and graduate degree curricula are qualified for certification by the American Board of Endodontics.

Program link: <https://dentistry.llu.edu/admissions/advanced-dental-education-programs> (<https://dentistry.llu.edu/admissions/advanced-dental-education-programs/>)

### Program director

Tory Silvestrin

### Faculty

Shelley Aronson

Rinku Parmar

Tory Silvestrin

### Emeritus faculty

Leif Bakland

## Admissions

### Application process

The Endodontics, Advanced Program participates in the Postdoctoral Application Support Service (PASS) of the American Dental Education Association, which allows applicants to apply to multiple participating institutions.

PASS applicants for the advanced education program in endodontics must also complete and submit a separate online application (llu.edu/central/apply (http://www.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 July 20 of the year prior to the summer of intended enrollment.

## Tuition

Tuition and fees for the 2022-23 academic year (effective July 1, 2022) is approximately \$19,839.00 per quarter and is subject to change. Tuition is adjusted annually every July 1<sup>st</sup>. These fees do not include instruments and textbooks that may be required.

## Program requirements

### 27-month Certificate

#### Major

ENDN 534	Endodontic Treatment Conference (1-2)	18
ENDN 601	Principles of Endodontics (2)	10
ENDN 604	Literature Seminar in Endodontics (2)	16
ENDN 654	Practice Teaching in Endodontics (1)	4
ENDN 657	Written/Oral Board Review Course for the American Board of Endodontics	2
ENDN 697A	Research	1
ENDN 697B	Research	1

#### Interdisciplinary

GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics <sup>2</sup>	2
GRDN 622A	Biomedical Science	2
GRDN 622B	Biomedical Science	2
IMPD 611	Introduction to Implant Dentistry	2
ORPA 533	Radiology Topics for Graduate Dental Programs	2
PERI 624	Moderate Sedation in Periodontics	4
REL 5	Graduate-level Religion	3

**Total Units** 77

#### Clinical <sup>1</sup>

ENDN 725	Clinical Practice in Endodontics (1-8)	72
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**Total Units** 72

<sup>1</sup> Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

2.3 years (nine [9] academic quarters) – full-time enrollment required

### 36-month Certificate

Closed to admissions for the 2020-2021 academic year.

#### Major

ENDN 534	Endodontic Treatment Conference (1-2)	21
ENDN 601	Principles of Endodontics (2)	10
ENDN 604	Literature Seminar in Endodontics (2)	16
ENDN 654	Practice Teaching in Endodontics (1)	4
ENDN 657	Written/Oral Board Review Course for the American Board of Endodontics	2
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 <sup>2</sup>	2
GRDN 622A	Biomedical Science	2
GRDN 622B	Biomedical Science	2
IMPD 505	Patient Presentation Seminar (1)	7
IMPD 601	Literature Review in Implant Dentistry (2)	16
IMPD 604	Current Literature Review in Implant Dentistry (2)	16
IMPD 611	Introduction to Implant Dentistry	2
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1)	7

ORDN 526	Applied Anatomy	2
ORPA 533	Radiology Topics for Graduate Dental Programs	2
PERI 524	The Periodontium	2
PERI 611	Introduction to Periodontics	2
PERI 624	Moderate Sedation in Periodontics	4
REL 5	Graduate-level Religion	3

**Total Units** 130

#### Clinical <sup>1</sup>

ENDN 725	Clinical Practice in Endodontics (1-8)	64.5
ENDN 726	Clinical Practice of Implant Dentistry in Endodontics (1,2)	8

**Total Units** 72.5

<sup>1</sup> Units for clinic practice courses do not count toward minimum number of graduate units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

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

## Comparison

See the comparison (p. 230) of the 27- and 36-month certificates.

## M.S.D.

In addition to completing the requirements for the 27 or 36-month certificate as listed above, students must also complete the following

courses and fulfill the general requirements (p. 227) for the degree. Students may take up to one year following the completion of the certificate program to complete the M.S.D. degree.

ENDN 697C Research

1 ENDN 698 Thesis

1

### Normal time to complete the program

2.3 years (nine [9] academic quarters) – full-time enrollment required (includes the time needed to complete the certificate program)

courses and fulfill the general requirements (p. 227) for the degree. Students have five years from the start of the certificate program to complete the M.S. degree.

### Normal time to complete the program

2.3 years (nine [9] academic quarters) – full-time enrollment required (includes the time needed to complete the certificate program)

## M.S.

In addition to completing the requirements for the 27- or 36-month certificate as listed above, students must also complete the following

## Endodontics Certificate – 27-month, 36-month Comparison

Major	Course Title	27-month Certificate	36-month Certificate
ENDN 534	Endodontic Treatment Conference (1-2)	18.0	21.0
ENDN 601	Principles of Endodontics (2)	10.0	10.0
ENDN 604	Literature Seminar in Endodontics (2)	16.0	16.0
ENDN 654	Practice Teaching in Endodontics (1)	4.0	4.0
ENDN 657	Written/Oral Board Review Course for the American Board of Endodontics	2.0	2.0
ENDN 697A	Research	1.0	1.0
ENDN 697B	Research	1.0	1.0
<b>Totals</b>		<b>52.0</b>	<b>55.0</b>
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 601	Practice Management	2.0	
GRDN 609	Professional Ethics	2.0	2.0
GRDN 622A	Biomedical Science	2.0	2.0
GRDN 622B	Biomedical Science	2.0	2.0
IMPD 611	Introduction to Implant Dentistry (2)	2.0	2.0
ORPA 533	Radiology Topics for Graduate Dental Programs	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 (1)		7.0
IMPD 601	Literature Review in Implant Dentistry (2)		16.0
IMPD 604	Current Literature Review in Implant Dentistry (2)		16.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1)		7.0
ORDN 526	Applied Anatomy		2.0
PERI 524	The Periodontium		2.0
PERI 611	Introduction to Periodontics		2.0
REL_ 5__ Graduate-level Religion			3.0
<b>Totals</b>		<b>25.0</b>	<b>75.0</b>
<b>Overall Totals</b>		<b>77.0</b>	<b>130.0</b>
Clinical	Course Title	27-month Certificate	36-month Certificate
ENDN 725	Clinical Practice in Endodontics (1-8) <sup>1</sup>	72.0	64.5
ENDN 726	Clinical Practice of Implant Dentistry in Endodontics (1,2) <sup>1</sup>		8.0
<b>Totals</b>		<b>72.0</b>	<b>72.5</b>

<sup>1</sup> Multiple registrations required to fulfill total required units

## Implant Dentistry – Certificate (post-D.D.S.), M.S.D., M.S.

The Implant Dentistry-Advanced Specialty Program leads to a certificate. Postdoctoral students may also obtain a Master of Science (M.S.) or a Master of Science in Dentistry (M.S.D.) degree. The program prepares students for the practice of implant dentistry and provides 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. Students will be expected to achieve advanced knowledge and skills in certain aspects of these dental specialties, and to be proficient in implant prosthodontics and implant surgery. Program content prepares students for certification by the American Board of Oral Implantology/Implant Dentistry and, upon application, they may be qualified as an associate fellow of the American Academy of Implant Dentistry.

The program begins July 1. Required residence for the certificate is 36 months.

Following enrollment, students may apply for acceptance to either the M.S. or the 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 tracks may extend the length of study as students complete a research project and a thesis or a publishable paper. The additional time must be in residence.

### Program learning outcomes

By the end of this program, the graduate should be able to:

1. Deliver comprehensive Implant Dentistry treatments.
2. Provide comprehensive treatment in problem-based patient situations that require surgical and prosthodontic dental implant solutions.
3. Identify and discuss concepts and guidelines in the implementation of clinical practice.
4. Achieve highest levels of patient treatment satisfaction.
5. Perform research and practice teaching.

#### Program director

Jaime L. Lozada

#### Faculty

Aladdin J. Al-Ardah

Joseph Y. Kan

Jaime L. Lozada

## Admissions

### Application process

All applicants must meet the admission requirements (p. 23) of Loma Linda University.

### Application deadline

Application for admission should be submitted by August 31 of the year prior to the summer of intended enrollment.

### Tuition

Tuition and fees for the 2022-23 academic year (effective July 1, 2022) is approximately \$19,839.00 per quarter and is subject to change. Tuition is adjusted annually every July 1<sup>st</sup>. 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.

## Program Requirements

### Certificate

#### Major

IMPD 505	Patient Presentation Seminar (1)	10
IMPD 547	Implant Dentistry Grand Rounds (1)	10
IMPD 561	Dental Bioengineering	2
IMPD 585	Implant Prosthodontics (2)	10
IMPD 601	Literature Review in Implant Dentistry (2)	22
IMPD 604	Current Literature Review in Implant Dentistry (2)	20
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
IMPD 631	Oral Implant Surgery (1)	11
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1)	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 (2)	4
PERI 624	Moderate Sedation in Periodontics	4
PROS 500	Prosthodontic Literature Review (2)	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
<b>Interdisciplinary</b>		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 609	Professional Ethics <sup>2</sup>	2
GRDN 622A	Biomedical Science	2
GRDN 622B	Biomedical Science	2
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery (1)	4
OMFS 606	Applied Surgical Anatomy	1

REL_ 5__	Graduate-level Religion	3
ORPA 533	Radiology Topics for Graduate Dental Programs	2
<b>Total Units</b>		<b>156</b>

**Clinical**<sup>1</sup>

IMPD 725	Clinical Practice in Implant Dentistry (4)	40
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry (2)	4
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry (2)	20
<b>Total Units</b>		<b>64</b>

<sup>1</sup> Units for clinic practice courses do not count toward minimum number of didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

**Normal time to complete the program**

Three (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. 227) for the degree. Students may take up to one year following the completion of the certificate program to complete the M.S.D. degree.

IMPD 697A	Research	1
IMPD 697B	Research	1
IMPD 697C	Research	1

**Normal time to complete the program**

Three (3) years (36 months) – full-time enrollment required (includes the time needed to complete the certificate program)

**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. 227) for the degree. Students have five years from the start of the certificate program to complete the M.S. degree.

IMPD 697A	Research	1
IMPD 697B	Research	1
IMPD 698	Thesis	1

**Normal time to complete the program**

Three (3) years (36 months) – full-time enrollment required (includes the time needed to complete the certificate program)

## Oral and Maxillofacial Surgery – Certificate (post-D.D.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 its 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 transitional year, including general surgery rotations. Residency begins July 1.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Competently deliver health care.
2. Continually acquire skills and knowledge to improve health care.
3. Prepare for certification by the American Board of Oral and Maxillofacial Surgery.
4. Demonstrate a level of academic achievement sufficient to enter into a teaching career, if desired.
5. Use the basic sciences in the practice of oral and maxillofacial surgery in a competent and skillful manner.
6. Integrate oral and maxillofacial surgical care with other medical and dental specialties in the health-care delivery system.
7. Conduct clinical investigation and/or research studies.
8. Practice the specialty based upon the highest moral and ethical standards.
9. Achieve a high degree of clinical proficiency in the specialty.
10. Document a broad and extensive level of surgical experience.
11. Administer inpatient and outpatient general anesthesia, local anesthesia, and sedation techniques.
12. Manage the administration of their practice.
13. Communicate effectively in public speaking, lecturing, and writing.
14. Demonstrate critical thinking—providing a foundation to become an effective student and mentor.
15. Assess and treat problems of the maxillofacial region. This includes dentoalveolar surgery, maxillofacial trauma, reconstructive surgery, pathology, and orthognathic/craniofacial surgery.
16. Demonstrate lifelong learning.

Program link: <https://dentistry.llu.edu/admissions/advanced-dental-education-programs> (<https://dentistry.llu.edu/admissions/advanced-dental-education-programs/>)

**Program director**

Jayini S. Thakker

**Pre-doctoral program director**

Carlos Moretta

**Faculty**

Christopher Choi

Andre Guerrero

Jeffrey A. Elo

Alan S. Herford

Murray K. Jacobs

Dale E. Stringer

Chi Viet



Samuel Young

## Pathology

Anupama Grandhi

Susan Richards

Susan Roche

## 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](https://llu.edu/central/apply) (<http://www.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://pass.liaisoncas.com/applicant-ux/#/login>) is also required.

### Application deadline

Application for admission should be submitted by September 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.

Applicants **are required** to have their California dental licenses at the time of matriculation into the program.

## Tuition

Fees will be charged but tuition will be waived for 2022-2023 academic year. Residents are paid a stipend during training.

## Program requirements

### Certificate

#### Major

OMFS 604	Selected Topics in Oral and Maxillofacial Surgery (1)	12
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities (1)	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 (0.5)	6
OMFS 609	Literature Review in Oral and Maxillofacial Surgery (0.5)	6
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery (1)	12
OMFS 618	Introduction to General Anesthesia	1

OMFS 696	Scholarly Activity in Oral and Maxillofacial Surgery	1
<b>Interdisciplinary</b>		
GRDN 601	Practice Management	2
IMPD 547	Implant Dentistry Grand Rounds (1.0)	4
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
RELE 534	Ethical Issues in Public Health	3
<b>Total Units</b>		<b>67</b>

#### Clinical <sup>1</sup>

OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice (7)	70
OMFS 615	Current Trends in Medicine and Surgery (2)	12
<b>Total Units</b>		<b>82</b>

<sup>1</sup> Units for clinic practice courses are counted separate from the didactic units required for the certificate.

### Normal time to complete the program

Certificate—four (4) years (48 months) — full-time enrollment required

Certificate/M.D.—six (6) years — full-time enrollment required

## Orthodontics and Dentofacial Orthopedics – Certificate (post-D.D.S.), M.S.

### Orthodontics and dentofacial orthopedics program goals

1. Students will receive coursework in biomedical sciences intended to provide the knowledge required to practice orthodontics and dentofacial orthopedics, as defined by the program's proficiency standards.
2. Students will receive 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.

All of the above goals are designed to prepare students 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.

### Program learning outcomes

By the end of the program, the graduate should be able to:

1. Develop technical competence in orthodontics.
2. Correlate basic natural sciences with the practice of orthodontics.
3. Demonstrate analytical thinking.

4. Perform clinical research.
5. Demonstrate responsibility toward the patient and the community.
6. Contribute to the growth and stature of the profession.
7. Collaborate with individuals in other allied professional disciplines.

The master's degree curriculum requires a minimum of 27 months in residence, beginning in late June. Additional time may be required, depending on the research selected.

Program link: <https://dentistry.llu.edu/admissions/advanced-dental-education-programs> (<https://dentistry.llu.edu/admissions/advanced-dental-education-programs/>)

### Program director

V. Leroy Leggitt

### Faculty

Joseph M. Caruso

James R. Farrage

Gabriela E. Garcia

Mohammed Jeiroudi

Roland D. Neufeld

Kitichai Rungcharassaeng

R. David Rynearson

## Admission

Candidates apply for admission to the Master of Science (M.S.) degree program and also have the option of applying later for a certificate.

All applicants must meet the admission requirements (p. 23) 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.

### 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 2022-23 academic year (effective July 1, 2022) is approximately \$19,839.00 per quarter and is subject to change. Tuition is adjusted annually every July 1<sup>st</sup>. 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 (1)	2
ORDN 606	Craniofacial Genetics	2
ORDN 608	Speech, Language, Breathing, and Orofacial Myofunction	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 <sup>2</sup>	2
GRDN 623	Biomedical Science II	5
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference (0.5)	2
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1
REL 5	Graduate-level Religion	3

**Total Units** **89**

### Clinical <sup>1</sup>

ORDN 725	Clinical Practice in Orthodontics (7)	56
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**Total Units** **56**

<sup>1</sup> Units for clinic practice courses are in addition to the minimum didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

### 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 residents as specialists in this area of dentistry. The curriculum leads to a certificate in pediatric dentistry. While clinical pediatric dentistry is emphasized, this clinical experience is balanced with a didactic curriculum of multidisciplinary courses and seminars. A research

component is designed to expose the resident to problem-solving using the scientific method. The program requires a minimum of 24 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 also apply for acceptance into either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree program. 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.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Proficiently provide comprehensive, preventive, and therapeutic oral health care for infants and children through adolescence, including those with special health-care needs.
2. Meet the standards set forth by the Commission on Dental Accreditation.
3. Practice pediatric dentistry.
4. Participate in pediatric dental research.
5. Participate in teaching pediatric dentistry.
6. Be prepared for certification by the American Board of Pediatric Dentistry.

Program link: <https://dentistry.llu.edu/admissions/advanced-dental-education-programs> (<https://dentistry.llu.edu/admissions/advanced-dental-education-programs/>)

### Program director

Jung-Wei Chen

### Faculty

Jung-Wei Chen

Bonnie A. Nelson

Wesley K. Okumura

Samah I. Omar

Laurita Su

## 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://pass.liasoncas.com/applicant-ux/#/login>) is required.

PASS applicants for the advanced education program in pediatric dentistry must also complete and submit an online application ([llu.edu/central/apply](http://www.llu.edu/central/apply)) (<http://www.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 advanced education programs, using a rank order list submitted by the applicant and the

program. A Match application (<https://portal.passweb.org/>) is also required.

For admission requirements, please refer to the Program's website: <http://www.llu.edu/dentistry/pediatrics/graduateprogram.page?> (<http://www.llu.edu/dentistry/pediatrics/graduateprogram.page>).

### Application deadline

Application for admission should be submitted by November 15 of the year prior to the summer of intended enrollment.

## Tuition

Tuition and fees for the 2022-23 academic year (effective July 1, 2022) is approximately \$19,839.00 per quarter and is subject to change. Tuition is adjusted annually every July 1<sup>st</sup>. These fees do not include instruments and textbooks that may be required.

## Program Requirements

### Certificate

#### Major

PEDN 503	Pediatric Dental Seminar (2)	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 (2-12)	12
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
PEDN 697A	Research	1
PEDN 697B	Research	1

#### Interdisciplinary

GRDN 514	Introduction to Biomedical Research	4
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics <sup>2</sup>	2
GRDN 622A	Biomedical Science	2
ORDN 526	Applied Anatomy	2
ORDN 545	Growth and Development	3
ORDN 606	Craniofacial Genetics	2
ORDN 608	Speech, Language, Breathing, and Orofacial Myofunction	1
ORPA 533	Radiology Topics for Graduate Dental Programs	2
REL_ 5__	Graduate-level Religion	3

**Total Units** **73**

#### Clinical <sup>1</sup>

PEDN 725	Pediatric Dental Clinic (8)	64
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<sup>1</sup> Units for clinic practice courses are in addition to the minimum didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

**Normal time to complete the program**

Two (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. 227) for the degree. Students may take up to one year following the completion of the certificate program to complete the M.S.D. degree.

PEDN 697C      Research      1

**Normal time to complete the program**

Two (2) years – full-time enrollment required (includes the time needed to complete the certificate program)

**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. 227) for the degree. Students have five (5) years from the start of the certificate program to complete the M.S. degree.

PEDN 698      Thesis      1-3

**Normal time to complete the program**

Two (2) years – full-time enrollment required (includes the time needed to complete the certificate program)

## 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 high-level procedural techniques, 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. 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 36 months in residence—beginning July 1 each year—is required.

### Program learning outcomes

By the end of this program, the graduate should have been able to:

1. Use the science of periodontics, the literature, periodontal pathology, and the history and current rationale for performing clinical procedures in periodontics.
2. 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. Design, conduct, and report a periodontal research project.

4. Become a diplomat of the American Board of Periodontology.
5. Teach in 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.
6. Successfully complete the American Board of Periodontology Certification Examination.
7. Achieve successful careers in clinical practice, research, and/or dental education.

Program link: <https://dentistry.llu.edu/admissions/advanced-dental-education-programs> (<https://dentistry.llu.edu/admissions/advanced-dental-education-programs/>)

**Program director**

Yoon Jeong Kim

**Faculty**

Amelia David

Mario Flores

Ahmed Khocht

Yoon Jeong Kim

Sangmoo Scott Lee

Nima Sarmast

## 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](http://www.llu.edu/central/apply)) (<http://www.llu.edu/central/apply/>) directly to Loma Linda University. A PASS application (<https://pass.liaisoncas.com/applicant-ux/#/login>) is available, but not required.

The program has a rolling admissions policy. 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 website, 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 2022-23 academic year (effective July 1, 2022) is approximately \$19,839.00 per quarter and is subject to change. Tuition is adjusted annually every July 1<sup>st</sup>. 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 (2)	10
PERI 601	Periodontal Therapy (2)	12
PERI 604	Current Periodontal and Implant Literature (2)	18
PERI 605	Implant Literature Review (2)	4
PERI 611	Introduction to Periodontics	2
PERI 614	Implant Treatment Planning (2)	24
PERI 624	Moderate Sedation in Periodontics	4
PERI 634	Clinical Conference (1, 2)	9
PERI 654	Practice Teaching in Periodontics (1)	4
PERI 696	Scholarly Activity in Periodontics	1
PERI 706	Fundamentals of Periodontal Surgery—Techniques and Instrumentation	2

PERI 697A	Research	1
PERI 697B	Research	1

#### Interdisciplinary

GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics <sup>2</sup>	2
GRDN 622A	Biomedical Science	2
GRDN 622B	Biomedical Science	2
REL_ 5__	Graduate-level Religion	3
ORPA 533	Radiology Topics for Graduate Dental Programs	2

**Total Units** **113**

#### Clinical <sup>1</sup>

PERI 725	Clinical Practice in Periodontics (1-6)	72
PERI 726	Clinical Practice in Implant Surgery (2)	24

**Total Units** **96**

<sup>1</sup> Units for clinic practice courses are in addition to the minimum didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

Three (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. 227) for the degree. Students may take up to one year following the completion of the certificate program to complete the M.S.D. degree.

PERI 697C	Research	1
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### Normal time to complete the program

Three (3) years — full-time enrollment required (includes the time needed to complete the certificate program)

### 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. 227) for the degree. Students have five (5) years from the start of the certificate program to complete the M.S. degree.

PERI 698	Thesis	1
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### Normal time to complete the program

Three (3) years — full-time enrollment required (includes the time needed to complete the certificate program)

## 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 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. It also provides an introduction to maxillofacial prosthetics, and the diagnosis and treatment of patients with temporomandibular dysfunction. Comprehensive interdisciplinary treatment-planning seminars with students and faculty members 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 in July and requires 36 months in residence to complete certificate requirements.

Following enrollment into the program, students may also apply for acceptance to either the Master of Science (M.S.) or the Master of Science in Dentistry (M.S.D.) degree. 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.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate knowledge in the diagnosis, treatment planning, and treatment related to prosthodontic therapy.
2. Demonstrate competency for the full range of clinical procedures that are considered an integral part of prosthodontics.
3. Demonstrate research understanding and knowledge.
4. Apply evidence-based information and participate in prosthodontic research.

Program link: [www.llu.edu/dentistry/gradprograms/](http://www.llu.edu/dentistry/gradprograms/) (<http://www.llu.edu/dentistry/gradprograms/>)

### Program director

Mathew T. Kattadiyil

### Faculty

Sarah Bukhari

Rami Jekki

Mathew T. Kattadiyil



Montry Suprono

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](http://www.llu.edu/central/apply)) (<http://www.llu.edu/central/apply/>) directly to Loma Linda University. A PASS application (<https://pass.liaisoncas.com/applicant-ux/#/login>) is available, but not required.

### 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 2022-23 academic year (effective July 1, 2022) is approximately \$19,839.00 per quarter and is subject to change. Tuition is adjusted annually every July 1<sup>st</sup>. These fees do not include instruments and textbooks that may be required.

## Program requirements

### Certificate

#### Major

IMPD 561	Dental Bioengineering	2
IMPD 611	Introduction to Implant Dentistry	2
IMPD 612	Advanced Implant Dentistry	2
PROS 500	Prosthodontic Literature Review (2)	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) (1)	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 (2)	14

PROS 634	Diagnosis and Treatment Planning (2)	18
PROS 637	Geriatric Dentistry	1
PROS 696	Scholarly Activity in Prosthodontics	1
<b>Interdisciplinary</b>		
GRDN 514	Introduction to Biomedical Research	4
GRDN 535	Clinical Oral Pathology	2
GRDN 601	Practice Management	2
GRDN 609	Professional Ethics <sup>2</sup>	2
GRDN 622A	Biomedical Science	2
GRDN 622B	Biomedical Science	2
REL_ 5__	Graduate-level Religion	3
ORPA 533	Radiology Topics for Graduate Dental Programs	2
<b>Total Units</b>		<b>119</b>

#### Clinical <sup>1</sup>

PROS 710	Clinical Practice of Prosthodontics (6)	66
<b>Total Units</b>		<b>66</b>

<sup>1</sup> Units for clinic practice courses are in addition to the minimum didactic units required for the degree.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

Three (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. 227) for the degree. Students may take up to one year following the completion of the certificate program to complete the M.S.D. degree.

PROS 697A	Research	1
PROS 697B	Research	1
PROS 697C	Research	1

### Normal time to complete the program

Three (3) years – full-time enrollment required (includes the time needed to complete the certificate program)

### 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. 227) for the degree. Students have five (5) years from the start of the certificate program to complete the M.S. degree.

PROS 697A	Research	1
PROS 697B	Research	1
PROS 698	Thesis	2

### Normal time to complete the program

Three (3) years – full-time enrollment required (includes the time needed to complete the certificate program)

## Dual Major – Periodontics, Prosthodontics Comparison

Closed to admissions for the 2022-2023 academic year.

Major	Course Title	Periodontics	Prosthodontics
PERI 524	The Periodontium	2.0	
PERI 531	Periodontal Pathology (2)	10.0	
PERI 601	Periodontal Therapy (2)	12.0	
PERI 604	Current Periodontal and Implant Literature (2)	18.0	
PERI 605	Implant Literature Review (2)	4.0	
PERI 611	Introduction to Periodontics	2.0	
PERI 614	Implant Treatment Planning (2)	24.0	
PERI 624	Moderate Sedation in Periodontics	4.0	
PERI 634	Clinical Conference (1-2) <sup>1</sup>	9.0	
PERI 654	Practice Teaching in Periodontics (1)	4.0	
PERI 696	Scholarly Activity in Periodontics	1.0	
PERI 697A	Research	1.0	
PERI 697B	Research	1.0	
PERI 706	Fundamentals of Periodontal Surgery—Techniques and Instrumentation	2.0	
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 (2)		22.0
PROS 501	Removable Partial Prosthodontics Literature Review		2.0
PROS 502	Complete Denture Prosthodontics Literature Review		2.0
PROS 505	Patient Presentation Seminar (Prosthodontics, Implant, Perio) (1)		9.0
PROS 515	Practice Teaching in Prosthodontics		2.0
PROS 525	Dental Materials Science		2.0
PROS 527	Clinical Application of Dental Materials		2.0
PROS 546	Occlusion and Morphology		2.0
PROS 547	Occlusion: Principles and Instrumentation		2.0
PROS 555	Removable Partial Prosthodontics		2.0
PROS 556	TMJ Function and Dysfunction		1.0
PROS 557	Advanced Removable Partial Prosthodontics		2.0
PROS 565	Complete Denture Prosthodontics		2.0
PROS 566	Advanced Complete Denture Prosthodontics		2.0
PROS 575	Fixed Partial Prosthodontics		2.0
PROS 576	Advanced Fixed Partial Prosthodontics I (MC Aesthetics)		2.0
PROS 595	Maxillofacial Prosthetics		2.0
PROS 604	Literature Review in Implant Dentistry for Prosthodontists (2)		14.0
PROS 634	Diagnosis and Treatment Planning (2)		18.0
PROS 637	Geriatric Dentistry		1.0
PROS 696	Scholarly Activity in Prosthodontics		1.0
<b>Totals</b>		<b>94.0</b>	<b>100.0</b>
Interdisciplinary	Course Title	Periodontics	Prosthodontics
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 601	Practice Management	2.0	2.0
GRDN 609	Professional Ethics	2.0	2.0
GRDN 622A	Biomedical Science	2.0	2.0
GRDN 622B	Biomedical Science	2.0	2.0

ORPA 533	Radiology Topics for Graduate Dental Programs	2.0	2.0
REL_ 5__	Graduate-level Religion	3.0	3.0
<b>Totals</b>		<b>19.0</b>	<b>19.0</b>
<b>Overall Totals</b>		<b>113.0</b>	<b>119.0</b>

	Course Title	Periodontics	Prosthodontics
<b>Clinical</b>			
PERI 725	Clinical Practice in Periodontics (1-6)	72.0	
PERI 726	Clinical Practice in Implant Surgery (2)	24.0	
PROS 710	Clinical Practice of Prosthodontics (6)		66.0
<b>Totals</b>		<b>96.0</b>	<b>66.0</b>

<sup>1</sup> Requires multiple registrations.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

Four and one-half (4.5) years; full-time enrollment required

## Dual Major – Periodontics, Implant Dentistry Comparison

Closed to admissions for the 2022-2023 academic year.

Major	Course Title	Periodontics	Implant Dentistry
PERI 624	Moderate Sedation in Periodontics	4.0	4.0
PERI 524	The Periodontium	2.0	
PERI 531	Periodontal Pathology (2)	10.0	
PERI 601	Periodontal Therapy (2)	12.0	4.0
PERI 604	Current Periodontal and Implant Literature (2)	18.0	
PERI 605	Implant Literature Review (2)	4.0	
PERI 611	Introduction to Periodontics	2.0	
PERI 614	Implant Treatment Planning (2)	24.0	
PERI 634	Clinical Conference (1, 2)	9.0	
PERI 654	Practice Teaching in Periodontics (1)	4.0	
PERI 696	Scholarly Activity in Periodontics	1.0	
PERI 697A	Research	1.0	
PERI 697B	Research	1.0	
IMPD 505	Patient Presentation Seminar (1)		10.0
IMPD 547	Implant Dentistry Grand Rounds (1)		10.0
IMPD 561	Dental Bioengineering		2.0
IMPD 585	Implant Prosthodontics (2)		10.0
IMPD 601	Literature Review in Implant Dentistry (2)		22.0
IMPD 604	Current Literature Review in Implant Dentistry (2)		20.0
IMPD 611	Introduction to Implant Dentistry		2.0
IMPD 612	Advanced Implant Dentistry		2.0
IMPD 631	Oral Implant Surgery (1)		11.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1)		10.0
IMPD 637	Peri-Implant Histopathology		1.0
IMPD 654	Practice Teaching in Implant Dentistry (1-3)		3.0
IMPD 696	Scholarly Activity in Implant Dentistry		1.0
PROS 500	Prosthodontic Literature Review (2)		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

<b>Totals</b>		<b>92.0</b>	<b>134.0</b>
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	Course Title	Periodontics	Implant Dentistry
<b>Interdisciplinary</b>			
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 609	Professional Ethics <sup>2</sup>	2.0	2.0
GRDN 622A	Biomedical Science	2.0	2.0
GRDN 622B	Biomedical Science	2.0	2.0
ORPA 533	Radiology Topics for Graduate Dental Programs	2.0	2.0
REL_ 5_	Graduate-level Religion	3.0	3.0
GRDN 601	Practice Management	2.0	
PERI 706	Fundamentals of Periodontal Surgery—Techniques and Instrumentation	2.0	
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery <sup>1</sup>		4.0
OMFS 606	Applied Surgical Anatomy		1.0

<b>Totals</b>		<b>21.0</b>	<b>22.0</b>
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<b>Overall Totals</b>		<b>113.0</b>	<b>156.0</b>
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	Course Title	Periodontics	Implant Dentistry
<b>Clinical</b>			
PERI 725	Clinical Practice in Periodontics (1-6)	72.0	
PERI 726	Clinical Practice in Implant Surgery (2)	24.0	
IMPD 725	Clinical Practice in Implant Dentistry (4)		40.0
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry (2)		4.0
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry (2)		20.0
<b>Totals</b>		<b>96.0</b>	<b>64.0</b>

<sup>1</sup> Requires multiple registrations.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

Four and one-half (4.5 years); full-time enrollment required

## Dual Major – Prosthodontics, Implant Dentistry Comparison

Closed to admissions for the 2022-2023 academic year.

Major	Course Title	Prosthodontics	Implant Dentistry
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 (2)	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) (1)	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 (2)	14.0	
PROS 634	Diagnosis and Treatment Planning (2)	18.0	
PROS 637	Geriatric Dentistry	1.0	
PROS 696	Scholarly Activity in Prosthodontics	1.0	
IMPD 505	Patient Presentation Seminar (1)		10.0
IMPD 547	Implant Dentistry Grand Rounds (1)		10.0
IMPD 585	Implant Prosthodontics (2)		10.0
IMPD 601	Literature Review in Implant Dentistry (2)		22.0
IMPD 604	Current Literature Review in Implant Dentistry (2)		20.0
IMPD 631	Oral Implant Surgery (1)		11.0
IMPD 634	Diagnosis and Treatment Planning in Implant Dentistry (1)		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 (2)		4.0
PERI 624	Moderate Sedation in Periodontics		4.0
<b>Totals</b>		<b>100.0</b>	<b>134.0</b>
	<b>Course Title</b>	<b>Prosthodontics</b>	<b>Implant Dentistry</b>
<b>Interdisciplinary</b>			
GRDN 514	Introduction to Biomedical Research	4.0	4.0
GRDN 535	Clinical Oral Pathology	2.0	2.0
GRDN 609	Professional Ethics <sup>1</sup>	2.0	2.0
GRDN 622A	Biomedical Science	2.0	2.0
GRDN 622B	Biomedical Science	2.0	2.0
REL_ 5_	Graduate-level Religion	3.0	3.0
ORPA 533	Radiology Topics for Graduate Dental Programs	2.0	2.0
GRDN 601	Practice Management	2.0	
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery (1)		4.0
OMFS 606	Applied Surgical Anatomy		1.0
<b>Totals</b>		<b>19.0</b>	<b>22.0</b>
<b>Overall Totals</b>		<b>119.0</b>	<b>156.0</b>
	<b>Course Title</b>	<b>Prosthodontics</b>	<b>Implant Dentistry</b>
<b>Clinical</b>			
PROS 710	Clinical Practice of Prosthodontics (6)	66.0	
IMPD 725	Clinical Practice in Implant Dentistry (4)		40.0
IMPD 726	Clinical Practice in Periodontics in Implant Dentistry (2)		4.0
IMPD 727	Clinical Practice of Prosthodontics in Implant Dentistry (2)		20.0
<b>Totals</b>		<b>66.0</b>	<b>64.0</b>

<sup>1</sup> Fulfills service learning requirement.



**Normal time to complete the program**

Four and one-half (4.5 years); full-time enrollment required

# SCHOOL OF MEDICINE

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## Dean's welcome



At Loma Linda University School of Medicine, we believe skilled and compassionate physicians heal more than a patient's disease; they mend the mind, body, and spirit of a patient in need. This tenet has been at the core of our mission for more than 100 years, and we strive to educate physicians, researchers, and medical professionals who are committed to whole-person care.

In addition to our medical school program, we offer a broad spectrum of graduate education opportunities, including combined degree programs, postgraduate residencies and fellowships, and continuing medical education for physicians beyond their formal academic years.

Our faculty members have pioneered transplantation, epigenetics, and translational research—among other fields—bringing together clinicians, researchers, and bright young students. Their promise to develop lifelong learners has led our graduates to advance medical care around the world.

In the School of Medicine, you will be immersed in the ever-changing field of medicine and will be entrusted with the gift of improving the lives of others. We welcome your curiosity.

Tamara Thomas, M.D.  
Dean, School of Medicine

## School foundations

### History

In 1909, the School of Medicine opened its doors as the College of Medical Evangelists, and in 1910, Seventh-day Adventist pioneer Ellen G. White declared “The medical school at Loma Linda is to be of the highest order.” Thus began an endeavor that has lasted for more than a century: to educate physicians dedicated to Christian service.

Between 1913 and the mid-1960s, medical student education was split between the Loma Linda University campus and White Memorial Medical Center in Los Angeles. But in 1967, Loma Linda University Medical Center opened its doors, making way for consolidation of the four years of medical school in Loma Linda.

In 2017, the 11,000th student received her medical degree from the School of Medicine. No other university on the West Coast has graduated more physicians than Loma Linda University, and our graduates have travelled around the world offering care to others and fulfilling the University’s motto, “to make man whole.”

*“So they set out and went from village to village,  
preaching the gospel and healing people everywhere.”*

Luke 9:6

### Mission

The Loma Linda University School of Medicine is dedicated to continuing the teaching and healing ministry of Jesus Christ.

### Preparing the physician

Our purpose is the formation of Christian physicians, who will provide whole-person care to individuals, families, and communities.

### Education

We strive to create an environment in which medical students, graduate students, and residents will acquire the knowledge, skills, values, and attitudes appropriate for Christian health professionals and scholars.

### Research

Our faculty works to cultivate a supportive atmosphere of inquiry, discovering new routes to wholeness through basic and clinical research.

### Service

Patients will have timely access to cost-effective, safe, comprehensive, whole-person care without regard for their circumstances or status.

### Developing the whole person

The Christian view of wholeness asserts 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. We believe in the importance of transforming our daily activities into personal ministries.

### Reaching the world

Students, faculty members, and graduates of Loma Linda University School of Medicine are devoted to providing whole-person care wherever the opportunity arises by participating with the global community in the provision of local medical education, providing international physicians and scientists the opportunities for professional interaction and enrichment, and sharing the good news of a loving God as demonstrated by the life and teachings of Jesus Christ.

## Doctor of Medicine degree/Oral and Maxillofacial Surgery Program requirements

The Doctor of Medicine degree/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 program content 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 start the medical school portion of their education in February of their first year. Residents then complete the remainder of the first year, along with the second and third years of the medical school curriculum. The final year of the medical school curriculum consists of required clerkships in acute care, emergency medicine, a subinternship in ENT, and eight weeks of elective in Oral and Maxillofacial related specialties. The graduate then enters a one-year transitional internship in November of their fourth year, 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. Those interested in pursuing careers in academic medicine and medical research may wish to enroll in *one of the combined degree programs*.

### Combined degrees (M.D./M.S. or M.D./Ph.D.)—SM/GS

The M.D./Ph.D. combined degree program is available through the School of Medicine. It includes many of the features of the Medical Scientist Program. Students in the combined degree program complete the first two years of the standard medical curriculum. This is followed by three or more years of graduate coursework and research to qualify for a Ph.D. degree, or at least one year for an M.S. degree, before commencing the final two years of the medical school curriculum—the clinical training—for the Doctor of Medicine degree. Majors are offered in anatomy; cancer, developmental and regenerative biology; infection, immunity, and inflammation; and neuroscience, systems biology, and bioengineering.

For the M.D./M.S. and M.D./Ph.D. combined degree 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.)

Students interested in pursuing careers in academic medicine and medical research may wish to enroll in the Medical Scientist Program.

Tuition assistance for the M.D. portion of the combined degrees program is not given to all students working toward both degrees. Assistance for the M.D. portion will be given only in cases where an applicant has received approval from the School of Medicine M.D./Ph.D. Admissions Committee prior to beginning the M.D. coursework. Assistance will be in the form of an institutional loan that will cover M.D. tuition and fees but will not include living expenses. The School of Medicine makes provision for the loan to be forgiven when a recipient meets the terms described below and in the loan agreement.

Loans for the first two years of the M.D. curriculum may be canceled when a student completes an M.S. or Ph.D. degree within the time

schedule described below and according to the terms of the loan agreement. Loans for the third and fourth years of the M.D. curriculum may be canceled when a student completes the Ph.D. degree within the time schedule described below and according to the terms described below and according to the terms of the loan agreement.

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 Degree Programs after the general information for the School of Medicine.)

## Residency programs

Loma Linda University is affiliated with a variety of accredited residency programs in two sponsoring institutions. The first is Loma Linda University Medical Center, and the second is Loma Linda-Inland Empire Consortium for Healthcare Education. All specialties and a variety of subspecialty programs are offered. 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 in several centers housed within the School of Medicine.

### Center for Health Disparities and Molecular Medicine

The mission of the Center for Health Disparities and Molecular Medicine (CHDMM) is to eliminate health disparities through research, education, and community engagement. Faculty members at the CHDMM use modern molecular genetics and cell biology approaches, community based participatory research, and precision medicine to investigate the causes of health disparities, how they are developed, and promising strategies to address them. Current research efforts at the center examine the influence of the augmented state of cellular oxidative stress and inflammatory pathways on cell death and survival as it pertains to cancer, diabetes, and neurological health disparities. The goal is to define novel molecular determinants and biomarkers associated with these health disparities, leading to the development of innovative clinical and community interventions aimed at eliminating or reducing them. The educational mission of the center is to train a diverse group of graduate students, medical students, and postdoctoral scientists to develop an inclusive biomedical workforce. Further, through partnering with community-based organizations, the CHDMM aims to develop healthy and whole communities through the implementation of evidence based prevention initiatives and programs.

### Center for Perinatal Biology

The primary research focus of the Center for Perinatal Biology is investigation of molecular and epigenetic mechanisms of fetal development and programming of health and disease later in life. The majority of the funding to support this research is derived from

competitive grants awarded by the National Institutes of Health (NIH). Additional funding is provided by the National Science Foundation and other agencies. The biomedical scientists in this internationally renowned research center also teach basic science courses in the School of Medicine and graduate courses in their disciplines. The graduate courses include physiology/pharmacology, gynecology/obstetrics, pathology/human anatomy, biochemistry/microbiology, and pediatrics.

The center is an ideal environment for graduate students, postdoctoral fellows, and beginning investigators who spend from two-to-four years in research and training in fields related to developmental biology and physiology. 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. Its goals are met by the research and development of new biologically and technologically advanced diagnostic procedures, minimally invasive surgical techniques, and innovative hemostatic instrumentation. The center functions in collaboration with many well-known institutions, such as George Mason University, UCLA, and North Carolina State University.

The center has been the recipient of a five-year NIH competitive grant to determine the role of iron perturbations in metabolism in the pathogenesis of Alzheimer's disease, as well as grants for proteomic study of schizophrenia. The center's multidisciplinary work involves collaborations among faculty members within the biochemistry, radiology, cell and molecular biology, radiobiology, psychiatry, geriatric medicine, and biostatistics disciplines. 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 of the center holds numerous international and United States patents on surgical instruments and other devices.

### Neuroscience Research Center

The major goal of the Center for Neuroscience Research is to conduct translational studies of major neurological disorders, in particular, brain hemorrhages seen in neurosurgery and neurology. These instances of brain hemorrhage include subarachnoid hemorrhage, intracerebral hemorrhage, hemorrhage after ischemic stroke, neonatal brain hemorrhage, and traumatic brain injury caused by brain hemorrhage. A longitudinal combined approach is encouraged, which includes animal models, experimental treatment, neuroimaging, neurological functional evaluations, and neural and cerebral vascular biological studies, to explore the mechanisms and potential treatment options. The Center is funded by a NIH program project grant, as well as additional federal grant support to individual Center members.

### Center for Genomics

The mission of the Center for Genomics is to provide state-of-the-art genomic (e.g., next-generation sequencing), epigenomic, and bioinformatic tools to: 1) better understand the molecular mechanisms of human disease and health disparities from a genome-wide and systems biology approach; 2) identify novel biomarkers of and novel therapeutic targets for human disease while providing single-nucleotide resolution genomic and epigenomic data for precision medicine; and

3) define the health and lifestyle profile of the Loma Linda Blue Zone population at genomic and epigenomic levels. The educational mission of the Center is to teach and train graduate students, medical students, and postdoctoral scientists on systems biology involving genomics, epigenomics, transcriptomics, and bioinformatics in the Loma Linda University School of Medicine.

## General regulations

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

## Student life

The information on student life and student policies contained in this CATALOG is brief. The Loma Linda University *Student Handbook* more comprehensively addresses university and school expectations, regulations, and policies. All students are expected to inform themselves of the contents of the Student Handbook (<http://www.llu.edu/student-handbook/>), including Sections which contain policies that apply to all LLU students in all of the schools that make up Loma Linda University and to abide by its policies. Additional information regarding policies specific to the School of Medicine are provided by the school at the orientation for each of the academic programs. Students who have questions about the *Student Handbook* should contact the associate dean for student affairs over their program. Students in the School of Medicine's M.D and MMS programs are expected to familiarize themselves with the *Student Handbook*, as well as additional policies posted on Canvas and to abide by those policies. Students in the School of Medicine's Integrated Biomedical Graduate Studies Program are expected to familiarize themselves with the document *Student Guidelines, Policies and Procedures, Integrated Biomedical Graduate Studies* and to abide by those policies. Students in programs associated with the School of Medicine's Earth and Biological Sciences Graduate *Student Handbook* and to abide by those policies. Students in the Pathologists' Assistant Program are expected to familiarize themselves with the document *Student Handbook Pathologists' Assistant Program* and to abide by those policies.

## 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.

### Distinguished Student in Radiology Award

The Distinguished Student in Radiology Award is given to the student who is devoted to the field of radiology as evidenced by their distinguished service, exceptional performance, and commitment to pursuing radiology as a career.

### 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.

### 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.

### Department of Ophthalmology – Ernest Zane Award

The Department of Ophthalmology – Ernest Zane Award is given to a graduating senior who is recognized as an outstanding student pursuing a specialty in ophthalmology and demonstrating a commitment to mission service or a deep interest in continuing the teaching and healing ministry of Jesus Christ.

### 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 their peers and colleagues a growing excellence in the physical, mental, emotional, spiritual, and relational care of their patients as part of the art of medical practice.

**Class of 1990 Heart for Service Award**

Established and funded by the class of 1990, the Heart for Service Award is given to senior medical students who exemplify the character of Christ and demonstrate a commitment to service, either at home or abroad.

**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.

**Gold Humanism Honor Society**

Recognizes students, residents, and faculty who are exemplars of compassionate patient care and who serve as role models, mentors, and leaders in medicine.

**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.

**3AM Award**

The 3AM award is presented to the student who most embodies the work ethic, positive attitude, and spirit of collegiality that makes others grateful to be working next to them at all hours in the emergency department.

**Dysinger Family 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 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 website at [llu.edu/central/students/veterans.page](http://llu.edu/central/students/veterans.page) (<http://www.llu.edu/central/students/veterans.page>).

### Schedule of charges

**Tuition**

61,170	Full time
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**Fees**

\$4,056*	For years 1 and 2: enrollment fee
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\$4,396*	For years 3 and 4: enrollment fee
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**Supplies and instruments (estimated)**

\$4,000*	Per school calendar year
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\$1000*	First-year medical equipment
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\* Fees subject to change

### Living expenses (estimated)

Students should contact the Office of Financial Aid for current living allowance information [finaid@llu.edu](mailto:finaid@llu.edu) or 909/558-4509.

### On- and off-campus student housing

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) (<http://www.llu.edu/central/housing/>) for housing information and a housing application form.

### Special charges 2022-2023

\$85	Supplemental application (nonrefundable), in addition to AMCAS fee
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\$200	Late payment fee
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cost	Health-care items not covered by health fee or insurance
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cost	Library fine or loss, parking fine, property breakage or loss
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cost	Health coverage for spouse and family
\$25	Returned check fee

For additional details, see the combined degree programs (p. 428) page in this CATALOG.

## Programs

- Anatomy—M.S., Ph.D (p. 279).
- Biology - M.S. (p. 262), Ph.D. (p. 262)
- Biomedical Sciences - M.M.S. (p. 283)
- Cancer, Developmental and Regenerative Biology — M.S., Ph.D. (p. 251)
- Earth Science - Ph.D. (p. 266)
- Environmental Sciences - B.S. (p. 269)
- Geology - B.S. (p. 272), M.S. (p. 274)
- Infection, Immunity, and Inflammation — M.S., PhD. (p. 254)
- Medical Scientist—M.D. and Ph.D. (p. 287)
- Medicine—M.D. (p. 288)
- Natural Sciences - M.S. (p. 276)
- Neuroscience, Systems Biology, and Bioengineering — M.S., Ph.D. (p. 257)
- Pathologists' Assistant — M.H.S. (p. 282)

## 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 careers in independent research and teaching in academic or biotechnology settings. 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 time 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.

## Department of Basic Sciences

The Department of Basic Sciences in the School of Medicine offers graduate programs leading to M.S. and Ph.D. degrees in three areas 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 two 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 are 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

Vladimar Bashkirov

Danilo Boskovic

Eileen J. Brantley

John N. Buchholz

Carlos A. Casiano

Daisy D. De Leon

Marino A. De Leon

Charles A. Ducsay

Penelope J. Duerksen-Hughes

Valeri Filippov

Maria Filippova

Hansel M. Fletcher

Ravi Goyal

David A. Hessinger

Salma Khan

William H. Langridge

Xiao W. Mao

Eugenica I. Mata-Greenwood

Gregory A. Nelson

Stephen A. Nyirady

William J. Pearce

Michael J. Pecaut

Christopher C. Perry

Gordon G. Power

Hongyu Qiu

Ubaldo A. Soto-Wegner

Richard S. Sun

Jiping Tang

Julia J. Unternaehrer-Hamm

Roman Vlkolinsky

Nathan R. Wall

Charles Wang

Kylie J. Watts

Christopher G. Wilson

Sean M. Wilson

David L. Wolf

Daliao Xiao

Steven M. Yellon

John H. Zhang

Lubo Zhang

### Adjunct faculty

Daila S. Gridley

Keith E. Schubert

Ihsan Solaroglu

Lawrence C. Sowers

### Emeritus faculty

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 proposal 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 subsequent years, formal courses continue to broaden and integrate into a meaningful whole an understanding of clinical consequences of cellular events.

### Religion requirement

Students in the Master of Science (M.S.) degree curricula are required to complete one, three-unit, graduate-level religion course (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 three 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.

## Admissions

In addition to Loma Linda University (p. 23) 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 test of the Graduate Record Examination (GRE): A total (verbal plus quantitative) score of no less than the sum of the scores corresponding to the 50th percentile of each, with neither score less than the 35th percentile; analytical writing 4.0. GRE scores older than five years from the date of matriculation are not considered.
- A full year of each of the following undergraduate courses:
  - General biology
  - General chemistry
  - Organic chemistry
  - General physics
  - Biochemistry (a minimum of one quarter/semester)

Strongly Recommended:

- Upper-division biology (such as cell and molecular biology)
- A full year of biochemistry with labs
- Research experience
- Calculus
- Computer programming experience (neuroscience, systems biology and bioengineering program)

**PLEASE NOTE:** CLEP (College-Level Examination Program), pass/fail performances, and online classes are not acceptable for the science-required courses. Additionally, science credits earned in professional schools (e.g., allied health professions, business, dentistry, nursing or pharmacy) do not fulfill requirements for admissions to the graduate program.

The program reserves the right to decide on the equivalence of courses presented by the applicant.

## Programs

- Cancer, Developmental and Regenerative Biology – M.S., Ph.D. (p. 251)
- Infection, Immunity, and Inflammation – M.S., PhD. (p. 254)
- Neuroscience, Systems Biology, and Bioengineering – M.S. Ph.D. (p. 257)

# Cancer, Developmental and Regenerative Biology – M.S., Ph.D.

## Co-program directors

Mary Kearns-Jonker  
Julia Unternaehrer-Hamm

The School of Medicine offers basic sciences curricula leading to the Master of Science and Doctor of Philosophy degrees. The core curriculum provides a broad background in molecular biology, cell biology, and biochemistry. Advanced courses allow each student to fully develop an area of interest.

Research strengths of the program include: cancer biology (prostate, breast, thyroid, ovarian, cervical, pancreatic, and leukemia), molecular mechanisms controlling normal development and regeneration, stem cell-based cardiovascular repair, oxidative stress in mechanism of anticancer agents, stem cell delivery of gene therapy for regenerative medicine, neuronal injury and axonal regeneration, transcriptional regulation, normal and malignant immune cell development and function, nanoparticles for therapeutic applications, cellular and molecular mechanisms of cardiovascular diseases and aging, plasticity and interconnection between normal and cancer stem cells, miRNA regulation in ovarian cancer and early development, epigenomic/transcriptomic reprogramming and longevity, calcium signaling during lung development, developmental programming of health and disease, stem cell reprogramming, and genome editing.

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. The non-thesis Master of Science degree provides content appropriate for secondary teachers seeking advanced training in areas such as molecular biology, cancer biology, developmental biology, and regenerative medicine; 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 careers 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 learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate a broad knowledge of the biomedical sciences.
2. Demonstrate subject mastery in cancer, developmental, or regenerative biology.
3. Interpret the current literature in the field.
4. Design hypothesis-driven studies to address key questions in the field.
5. Make original contributions to the body of biomedical knowledge.
6. Demonstrate the principles of scientific and professional ethics.
7. Write effective scientific publications and grant proposals.\*

\*This outcome is not applicable to M.S. degree students.

## 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 coursework 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2

#### Seminars (all required)

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar	1

#### Religion

REL_ ____	Graduate-level religion course (RELE, RELR, or RELT)	3
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#### Program specific courses **12**

Choose from the following:

ANAT 507	Stem Cell Biology and Medicine	
ANAT 544	Human Embryology Lecture	
BCHM 544	Advanced Topics in Biochemistry	
BCHM 605	Seminar in Stem Cells and Cancer or BCHM 610 Cancer Journal Club	
CDRB 555	Biology of Cancer	

#### Degree completion options **8**

Coursework track:

Electives (8 units)	
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Research track:

BCHM 697	Research	
IBGS 698	Thesis (1-3 units)	
Elective (0-2 units)		

#### Total Units **45**

#### Available Electives

ANAT 548	Introductory Flow Cytometry	1
BCHM 530	Biochemical Basis of Human Disease SM	2
IBGS 525	Translational Research Training	2
MDCJ 520	Basis of Medical Genetics	2
MDCJ 560	Basis of Medical Genetics	2
MICR 515	Introduction to Bioinformatics and Genomics	2
MICR 530	Immunology	4
MICR 537	Selected Topics in Molecular Biology	1-3
PHSL 541	Cell and Molecular Biology	4
PHSL 587	Physiology of Reproduction	2

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

## Service learning requirement

This requirement may be met by taking IBGS 525 Translational Research Training or a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

## Noncourse requirements

Coursework track: a comprehensive written examination over the graduate coursework in lieu of preparing a thesis.

Research track: pass an oral examination given by their graduate guidance committee after the thesis has been completed.

## Normal time to complete the program

Two (2) years— based on full-time enrollment; part time permitted

## Comparison

See the comparison (p. 253) of the M.S. and Ph.D. degree programs.

## Ph.D. requirements

For the Ph.D. degree, students must complete a minimum of 61 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2

#### Seminars (all required)

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar (1)	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1

#### Religion

RELE 5__	Must be numbered 500 or above	3
RELR 5__	Must be numbered 500 or above	3
RELT 5__	Must be numbered 500 or above	3

#### Program specific courses **6**

##### Emphasis: Developmental/regenerative biology

ANAT 507	Stem Cell Biology and Medicine	
ANAT 544	Human Embryology Lecture	

##### Emphasis: Cancer biology

BCHM 544	Advanced Topics in Biochemistry	
BCHM 605	Seminar in Stem Cells and Cancer or BCHM 610 Cancer Journal Club	
CDRB 555	Biology of Cancer	

Electives: **6-12**



Choose from the following and other courses as approved by advisor:

BCHM 530 Biochemical Basis of Human Disease SM

CDRB 550 Clinical Exposure in Oncology

IBGS 525 Translational Research Training

IBGS 537A Special Topics in Biomedical Sciences

MDCJ 560 Basis of Medical Genetics

MICR 515 Introduction to Bioinformatics and Genomics

MICR 530 Immunology

NSBB 506 Fundamentals of Electrophysiology

PHSL 541 Cell and Molecular Biology

PHSL 587 Physiology of Reproduction

#### Research and dissertation

BCHM 697 Research (1-10) 12

IBGS 696 Research Rotations (1) 2

IBGS 699 Dissertation (1-5) 1-5

**Total Units** 61

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

## Service learning requirement

This requirement may be met by taking IBGS 525 Translational Research Training or a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

## Noncourse requirements

- Pass 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

Four (4) years – full-time enrollment; part time permitted

## Comparison

See the comparison (p. 253) of the M.S. and Ph.D. degree programs.

# Cancer, Developmental and Regenerative Biology – M.S., Ph.D. Comparison

Course Title	MS	PhD
<b>Basic science core</b>		
IBGS 501 Biomedical Communication and Integrity	2.0	2.0
IBGS 502 Biomedical Information and Statistics	2.0	2.0
IBGS 511 Cellular Mechanisms and Integrated Systems I	6.0	6.0
IBGS 512 Cellular Mechanisms and Integrated Systems II	6.0	6.0
IBGS 522 Cellular Mechanisms and Integrated Systems II Journal Club	2.0	2.0
IBGS 523 Cellular Mechanisms and Integrated Systems III Journal Club	2.0	2.0
IBGS 503 Biomedical Grant Writing		2.0
<b>Totals</b>	<b>20.0</b>	<b>22.0</b>
<b>Seminars</b>		
IBGS 604 Introduction to Integrative Biology Presentation Seminar	1.0	1.0
IBGS 605 Integrative Biology Presentation Seminar (1)	1.0	2.0
IBGS 607 Integrated Biomedical Graduate Studies Seminar <sup>1</sup>		1.0
<b>Totals</b>	<b>2.0</b>	<b>3.0</b>
<b>Religion</b>		
RELE ___ Graduate-level religion course		3.0
REL P ___ Graduate-level religion course		3.0
REL T ___ Graduate-level religion course		3.0
REL_ ___ Graduate-level religion course (RELE, RELR, or RELT)	3.0	
<b>Totals</b>	<b>3.0</b>	<b>9.0</b>
<b>Program specific courses</b>		
See M.S. and Ph.D. degree programs for choice of courses	12.0	12.0
<b>Totals</b>	<b>12.0</b>	<b>12.0</b>
<b>MS degree completion options</b>		
Required:	8.0	

Coursework track:

Electives (8 units)

Research track:

BCHM 697 Research

IBGS 698 Thesis (1-3 units)

Electives (0-2 units)

Totals		8.0	
	Course Title	MS	PhD
<b>PhD research/dissertation</b>			
BCHM 697	Research (1-10)		12.0
IBGS 696	Research Rotations (1)		2.0
IBGS 699	Dissertation (1-5)		1.0
<b>Totals</b>			<b>15.0</b>
<b>Overall Totals</b>		<b>45.0</b>	<b>61.0</b>

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

## Infection, Immunity, and Inflammation – M.S., Ph.D.

### Program director

Ubaldo Soto

### Associate program director

Mark Johnson

The core curriculum provides a broad background in molecular biology, immunology, and medical microbiology and infectious diseases. Advanced courses allow each student to fully develop an area of interest. Research strengths of the program include: signal transduction in bacteria, molecular genetics of virulence in bacteria, mechanisms of oxidative stress resistance, mechanisms of cell death, cellular and tumor immunology, normal and malignant immune cell development, autoimmunity, chaperonins and protein folding, mechanisms of posttranslational modification, 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, as well as medical technologists seeking specialized research training. The non-thesis 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 professional schools, such as medicine or dentistry.

The Doctor of Philosophy degree is designed to prepare students for careers in independent research as well as teaching in a university, clinical, or biotechnology environment. Doctoral degree students are expected to develop creativity and independence in addition to technical skills.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Demonstrate a broad knowledge of the biomedical sciences.
2. Demonstrate subject mastery in molecular, cellular, and integrative aspects of microbiology and immunity/inflammation.
3. Interpret the current literature in microbiology and immunity/inflammation.
4. Make original contributions to the body of biomedical knowledge.
5. Exhibit the principles of scientific and professional ethics.
6. Demonstrate the process of applying for external funding.\*

\*This learning outcome is not applicable to M.S. degree students.

## 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 coursework 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2

### Seminars (all required)

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1

### Religion

REL_ ____	Graduate-level religion course (RELE, RELR, or RELT)	3
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### Program specific courses

Choose from the following: 9

ANAT 548	Introductory Flow Cytometry <sup>3</sup>	
MICR 515	Introduction to Bioinformatics and Genomics	
MICR 521	Medical Microbiology <sup>2</sup>	
MICR 530	Immunology <sup>3</sup>	
MICR 540	Physiology and Molecular Genetics of Microbes <sup>2</sup>	
MICR 570	Mechanisms of Microbial Pathogenesis <sup>2</sup>	
MICR 624	Special Problems in Microbiology	
MICR 625	Independent Study in Microbiology Literature	

**Degree completion options 11**

Coursework track:

Electives (Choose 11 additional units from available electives listed below or from program-specific courses above)	
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Research track:

Elective (3)	
MICR 697	Research (5 units)
IBGS 698	Thesis (1-3 units)

**Total Units 45**

#### Available Electives

ANAT 507	Stem Cell Biology and Medicine	4
BCHM 515	Introduction to Bioinformatics	2
BCHM 544	Advanced Topics in Biochemistry	2-4
IBGS 525	Translational Research Training	2
MICR 537	Selected Topics in Molecular Biology <sup>2,3</sup>	1-3
PHRM 584	Drug Metabolism and Biochemical Pharmacology	4

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Must take at least 3 units of coursework with a clear microbiology focus.

<sup>3</sup> Must take at least 3 units with a clear immunology focus.

### Service learning requirement

This requirement may be met by taking IBGS 525 Translational Research Training or a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

### Noncourse requirements

Coursework track: a comprehensive written examination over the graduate coursework in lieu of preparing a thesis.

Research track: pass an oral examination given by their graduate guidance committee after the thesis has been completed.

### Normal time to complete the program

Two (2) years – based on full-time enrollment; part time permitted

### Comparison

See the comparison (p. 256) of the M.S. and Ph.D. degree programs.

## Ph.D. requirements

For the Ph.D. degree, students must complete a minimum of 60 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2

#### Seminars (all required)

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar <sup>1</sup>	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1

#### Religion

RELE 5__	Must be numbered 500 or above	3
RELR 5__	Must be numbered 500 or above	3
RELT 5__	Must be numbered 500 or above	3

#### Program specific courses

Choose from the following: 12

ANAT 548	Introductory Flow Cytometry <sup>3</sup>	
MICR 515	Introduction to Bioinformatics and Genomics	
MICR 521	Medical Microbiology <sup>2</sup>	
MICR 530	Immunology <sup>3</sup>	
MICR 540	Physiology and Molecular Genetics of Microbes <sup>2</sup>	
MICR 570	Mechanisms of Microbial Pathogenesis <sup>2</sup>	
MICR 624	Special Problems in Microbiology	
MICR 625	Independent Study in Microbiology Literature (2-4)	

#### Research

IBGS 696	Research Rotations (1)	2
MICR 697	Research (1-7)	12
IBGS 699	Dissertation (1-5)	2-5

**Total Units 62**

#### Available Electives

ANAT 507	Stem Cell Biology and Medicine	4
BCHM 515	Introduction to Bioinformatics	2
BCHM 544	Advanced Topics in Biochemistry	2-4
IBGS 525	Translational Research Training	2
MICR 537	Selected Topics in Molecular Biology <sup>2,3</sup>	1-3
PHRM 584	Drug Metabolism and Biochemical Pharmacology	4

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Must take at least 3 units of coursework with a clear microbiology focus.

<sup>3</sup> Must take at least 3 units with a clear immunology focus.

## Service learning requirement

This requirement may be met by taking IBGS 525 Translational Research Training or a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

## 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

Five (5) years – based on full-time enrollment; part time permitted

## Comparison

See the comparison (p. 256) of the M.S. and Ph.D. degree programs.

# Infection, Immunity and Inflammation – M.S., Ph.D. Comparison

	Course Title	MS	PhD
<b>Basic science core</b>			
IBGS 501	Biomedical Communication and Integrity	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I	6.0	6.0
IBGS 512	Cellular Mechanisms and Integrated Systems II	6.0	6.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2.0	2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2.0	2.0
IBGS 503	Biomedical Grant Writing		2.0
<b>Totals</b>		<b>20.0</b>	<b>22.0</b>
	Course Title	MS	PhD
<b>Seminars</b>			
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1)	1.0	2.0
<b>Totals</b>		<b>2.0</b>	<b>3.0</b>
	Course Title	MS	PhD
<b>Religion</b>			
RELE 525	Ethics for Scientists		3.0
RELR 588	Personal and Family Wholeness		3.0
RELT 617	Seminar in Religion and the Sciences		3.0
REL_ ___	Graduate-level religion course (RELE, RELR, or RELT)	3.0	
<b>Totals</b>		<b>3.0</b>	<b>9.0</b>
	Course Title	MS	PhD
<b>Program specific courses</b>			
ANAT 548	Introductory Flow Cytometry <sup>3</sup>		
MICR 515	Introduction to Bioinformatics and Genomics		
MICR 521	Medical Microbiology <sup>2</sup>		
MICR 530	Immunology <sup>3</sup>		
MICR 540	Physiology and Molecular Genetics of Microbes <sup>2</sup>		
MICR 570	Mechanisms of Microbial Pathogenesis <sup>2</sup>		
MICR 624	Special Problems in Microbiology		
MICR 625	Independent Study in Microbiology Literature		
Choose from the above:			12.0
Choose from the above:		9.0	
<b>Totals</b>		<b>9.0</b>	<b>12.0</b>
	Course Title	MS	PhD
<b>MS degree completion options</b>			
Required:		11.0	
Course work track:			
Electives (choose 8 units from available electives listed below)			

Research track:

MICR 697	Research
IBGS 698	Thesis

<b>Totals</b>		<b>11.0</b>	
	<b>Course Title</b>	<b>MS</b>	<b>PhD</b>
<b>PhD research/dissertation</b>			
IBGS 696	Research Rotations (1)		2.0
MICR 697	Research (1-7)		12.0
IBGS 699	Dissertation (1-5)		2.0
<b>Totals</b>			<b>16.0</b>
<b>Overall Totals</b>		<b>45.0</b>	<b>62.0</b>

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Must take at least 3 units of coursework with a clear microbiology focus.

<sup>3</sup> Must take at least 3 units with a clear immunology focus.

## Neuroscience, Systems Biology, and Bioengineering – M.S., Ph.D.

### Program director

Michael Pecaut

### Associate program director

Christopher Wilson

The core curriculum provides a broad background in molecular biology, immunology, and medical microbiology and infectious diseases. Advanced courses allow each student to fully develop an area of interest. Research strengths of the program include: cellular and systems neurosciences, bioinformatics, molecular biology, computational modeling, biostatistics and data analytics, radiation physics, functional/structural imaging, *in vivo* and *in vitro* physiology, and biomedical engineering.

The thesis or research option for the Master of Science degree provides training for individuals who will become technicians involved in biomedical research in universities or in the biotechnology industry as well as for medical technologists seeking specialized research training. The non-thesis Master of Science degree option provides content appropriate for secondary school teachers seeking advanced training in areas such as neuroscience, systems biology, bioinformatics, and medical imaging, as well as 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 learning outcomes

By the end of this program, the graduate should be able to:

1. Articulate fundamental concepts in the biomedical sciences.
2. Integrate aspects of neuroscience, systems biology, or bioengineering.
3. Interpret the literature within neuroscience, systems biology, or bioengineering.

4. Demonstrate the principles of scientific and professional ethics.
  5. Make original contributions to the body of biomedical knowledge.
  6. Explain the process of applying for external funding.\*
- \*This learning outcome does not apply to M.S. degree students.

## 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 coursework 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6

### Seminars (all required)

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar	1
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1

### Religion

REL_ ____	Graduate-level religion course (RELE, RELR, or RELT)	3
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### Program specific courses

NSBB 552	Data Analytics	3
NSBB 526	Journal Club (1) <sup>2</sup>	2
Choose from the following three (3) areas:		11

### Neuroscience

Required core: (10-15 units)	
ANAT 516	Neuroscience GS
NSBB 500	Foundations in Neuroscience
NSBB 504	Neuroscience Methods
NSBB 506	Fundamentals of Electrophysiology
NSBB 507	History of Neuroscience



NSBB 520	Neuroinflammation: Neuron-Glia Interactions
PHRM 554	Neuropharmacology
PSYC 551	Psychobiological Foundations
Electives: (5-6 units)	
NSBB 510	Cortical Circuits
NSBB 515	Contemporary Neuroimaging
<b>Systems biology</b>	
Required core: (10-15 units)	
MICR 540	Physiology and Molecular Genetics of Microbes
NSBB 551	Systems Biology – A Practical Approach
NSBB 553	Advanced Bioinformatics – Sequence and Genome Analysis
NSBB 555	Genomics and Bioinformatics: Tools
NSBB 557	Integration of Computational and Experimental Biology
STAT 521	Biostatistics I
STAT 522	Biostatistics II
Electives: (7-12) <sup>3</sup>	
HLIF 520	Data Management: Modeling and Development
HLIF 530	Data Analytics and Decision Support
IBGS 525	Translational Research Training
MDCJ 560	Basis of Medical Genetics
STAT 523	Biostatistics III
<b>Bioengineering</b>	
Required core: (10 units)	
NSBB 571	Engineering Analysis of Physiological Systems
NSBB 572	Cellular and Molecular Engineering
NSBB 575	Orthopaedic Regenerative Engineering and Mechanobiology
Electives: (10-18 units) <sup>2</sup>	
NSBB 579	Bioengineering Fabrication
NSBB 580	Medical Imaging Physics
NSBB 584	Medical Image Analysis
NSBB 585	Radiation Detectors for Medical Applications
NSBB 587	Radiation Therapy Physics
<b>Degree completion options</b> <b>11</b>	
Coursework track:	
Electives (Choose 11 units from available electives listed in above areas of specialization)	
Research track:	
Elective (0-2 units)	
NSBB 697	Research (8 units) <sup>3</sup>
IBGS 698	Thesis (1-3 units)
<b>Total Units</b>	<b>48</b>

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Credit toward degree for the first two registrations only.

<sup>3</sup> With instructor, mentor and program director approval, students may opt to take classes from another track or program to focus on a specific type of research topic (e.g., neuroscience, immunology, cancer).

## Service learning requirement

This requirement may be met by taking a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

## Noncourse requirements

Coursework track: a comprehensive written examination over the graduate course work in lieu of preparing a thesis.

Research track: pass an oral examination given by their graduate guidance committee after the thesis has been completed.

## Normal time to complete the program

Two (2) years – based on full-time enrollment; part time permitted

## Comparison

See the comparison (p. 260) of the M.S. and Ph.D. degree programs.

## Ph.D. requirements

For the Ph.D. degree, students must complete a minimum of 70 units—as detailed in the table below—and must maintain a G.P.A. of at least 3.0.

Based on research dissertation focus, other courses may be required as recommended by the dissertation committee and approved by School of Medicine graduate academic affairs committee. 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club	2
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club	2

### Seminars (all required)

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar <sup>1</sup>	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1

### Religion

RELE 5__	Must be numbered 500 or above	3
RELR 5__	Must be numbered 500 or above	3
RELT 5__	Must be numbered 500 or above	3

### Program specific courses

NSBB 526	Journal Club (1) <sup>2</sup>	2
NSBB 552	Data Analytics	3

Choose from the following three (3) areas: **18**

### Neuroscience

Required: (11-18 units)		
ANAT 516	Neuroscience GS	
NSBB 500	Foundations in Neuroscience	
NSBB 504	Neuroscience Methods	

Electives: (2-6 units)	
NSBB 506	Fundamentals of Electrophysiology
NSBB 507	History of Neuroscience
NSBB 510	Cortical Circuits
NSBB 515	Contemporary Neuroimaging
NSBB 520	Neuroinflammation: Neuron-Glia Interactions
PHRM 554	Neuropharmacology

### Systems biology

Required: (10-15 units)	
NSBB 551	Systems Biology – A Practical Approach
STAT 521	Biostatistics I
STAT 522	Biostatistics II
Electives: (2-10 units)	
HLIF 520	Data Management: Modeling and Development
NSBB 553	Advanced Bioinformatics – Sequence and Genome Analysis
NSBB 555	Genomics and Bioinformatics: Tools
NSBB 557	Integration of Computational and Experimental Biology
STAT 523	Biostatistics III

### Bioengineering

Required: (10 units)	
NSBB 557	Integration of Computational and Experimental Biology
NSBB 572	Cellular and Molecular Engineering
NSBB 579	Bioengineering Fabrication
Electives: (2-10 units)	
NSBB 575	Orthopaedic Regenerative Engineering and Mechanobiology
NSBB 580	Medical Imaging Physics
NSBB 584	Medical Image Analysis
NSBB 585	Radiation Detectors for Medical Applications
NSBB 587	Radiation Therapy Physics

### Research

IBGS 696	Research Rotations (1) <sup>2</sup>	2
NSBB 697	Research (1-8) <sup>2</sup>	12
IBGS 699	Dissertation (1-5)	2-5

**Total Units** **73**

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Credit toward degree for the first two registrations only.

## Service learning requirement

This requirement may be met by taking a religion course designated as a service learning course. For more information about this requirement and a list of religion courses that fulfill it, see section on academic service learning (p. 34) in this CATALOG.

## 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

Five (5) years – based on full-time enrollment; part time permitted

## Comparison

See the comparison (p. 260) of the M.S. and Ph.D. degree programs.

## Neuroscience, Systems Biology and BioEngineering – M.S., Ph.D. Comparison

	Course Title	MS	PhD
<b>Basic science core</b>			
IBGS 501	Biomedical Communication and Integrity	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I	6.0	6.0
IBGS 512	Cellular Mechanisms and Integrated Systems II	6.0	6.0
IBGS 503	Biomedical Grant Writing		2.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club		2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club		2.0
<b>Totals</b>		<b>16.0</b>	<b>22.0</b>
	Course Title	MS	PhD
<b>Seminars</b>			
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0
IBGS 605	Integrative Biology Presentation Seminar (1)	1.0	2.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar (1)	1.0	1.0
<b>Totals</b>		<b>2.0</b>	<b>3.0</b>
	Course Title	MS	PhD
<b>Religion</b>			
RELE 5__	Must be numbered 500 or above		3.0
RELR 5__	Must be numbered 500 or above		3.0
RELT 5__	Must be numbered 500 or above		3.0
REL_ 5__	Must be numbered 500 or above with an RELE, RELR, or RELT prefix	3.0	
<b>Totals</b>		<b>3.0</b>	<b>9.0</b>
	Course Title	MS	PhD
<b>Program specific courses</b>			
	See Ph.D. degree program for choice of courses		23.0
	See M.S. degree program for choice of courses	16.0	
<b>Totals</b>		<b>16.0</b>	<b>23.0</b>
	Course Title	MS	PhD
<b>MS degree completion options</b>			
	Required:	11.0	
	Coursework track:		
	Electives (11 units)		
	Research/Thesis track:		
	Electives (0-2 units)		
	IBGS 698      Thesis		
	NSBB 697      Research		
<b>Totals</b>		<b>11.0</b>	
	Course Title	MS	PhD
<b>PhD research/dissertation</b>			
NSBB 697	Research (1-8)		12.0
IBGS 696	Research Rotations (1)		2.0
IBGS 699	Dissertation (1-5)		2.0
<b>Totals</b>			<b>16.0</b>
<b>Overall Totals</b>		<b>48.0</b>	<b>73.0</b>

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> At least 2 units must be in a techniques course and 2 units in a didactic literature-based course.

## Department of Earth and Biological Sciences

### Graduate degree programs

#### Master of Science and Doctor of Philosophy

The Department of Earth and Biological Sciences (EBS) within the School of Medicine at Loma Linda University offers Master of Science degrees in biology, geology, and natural sciences; Doctor of Philosophy degrees in biology and earth science; and Bachelor of Science degrees in geology and environmental sciences.

The goal of the department is to provide students with the best possible opportunities for graduate study in these areas, with strong preparation for careers in the application of research in or teaching of biology, geology, paleontology, or earth systems science.

### Student life

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, who needs to be familiar with the contents of the *Student Handbook* and the School of Medicine's "Orange Book" of *Student Guidelines, Policies, and Procedures*. Additional information regarding policies specific to a particular school or program within the University is available from the respective school.

### Financial information

#### Schedule of charges (2020-2021)

EBS strives to make it possible for every qualified student to successfully complete his or her degree in a timely manner. For many students, financial arrangements may be key elements in providing opportunity for timely completion. The department therefore makes available to as many qualified students as possible various forms of financial aid within the limits of the departmental budget and circumstances. Such financial aid may take the form of research assistantships (RA) and tuition waivers, or other special awards. It is hoped that these incentives will not only help make a student's graduate career possible, but will also strengthen and expand their opportunities for learning while enrolled in the University. Other financial aid, such as student loans or other scholarships, are available through the Student Financial Aid office in the Student Services building.

Every student is responsible for the enrollment fee each quarter. It is not covered by tuition waivers. If a student is awarded an RA, they will be expected to document at least 30 hours per pay period (two [2] weeks) on departmental and research-related projects. Ph.D. degree students will be expected to document at least 40 hours per pay period on their project in order to continue receiving the RA. Please note that RAs are awarded for a set amount for the year (M.S. degree—\$7,500; Ph.D. degree—\$17,000). This amount is paid out monthly after the first full month of work.

#### Tuition

\$580	Per unit, graduate credit
\$290	Per unit, undergraduate credit; \$3,480 per quarter
\$350	Per unit, audit, graduate

#### Special charges\*

\$60	Application fee
\$823	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

Ronald L. Carter

Stephen G. Dunbar

William K. Hayes

George Jackson

Ana María Martínez Ardila

Kevin E. Nick

Suzanne E. Phillips

#### Secondary faculty

V. Leroy Leggitt

#### 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

Matthew McLain

Ronald Nalin

Ariel Roth

Timothy G. Standish

## Admissions

In addition to Loma Linda University admission requirements (p. 23), the applicant must also complete the following requirements:

### Application procedure

1. The application instructions, available on the Web at [llu.edu/central/apply](http://llu.edu/central/apply) (<http://www.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 courses.

## 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 their 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 website 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. 262), Ph.D. (p. 262)
- Earth Science — Ph.D. (p. 266)
- Environmental Sciences — B.S. (p. 269)
- Geology — B.S. (p. 272), M.S. (p. 274)
- Natural Sciences — M.S. (p. 276)

## 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. M.S. and Ph.D. curricula provide a broad and unified approach to the life sciences, as well as 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 for students of this program, in consultation with their advisors.

## Programs

- Biology – M.S. (p. 263), Ph.D. (p. 264)

## Biology – M.S.

### Program director

Stephen G. Dunbar

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Demonstrate critical independent evaluation of published scientific literature.
2. Plan and carry out independent research.
3. Critically evaluate philosophies of science and their relation to issues of public interest.
4. Demonstrate proficient oral and written skills in communicating science topics.
5. Demonstrate professional aptitude and attitudes.

## 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, including contact information, from the department web page at <http://www.llu.edu/medicine/ebs/index.page?> (<http://medicine.llu.edu/research/department-earth-and-biological-sciences/>). Qualified students are also encouraged to seek fellowships from federal and private agencies with the help of their advisors.

## 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 programs, in consultation with faculty members and 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 that time.

## Registration and tuition after normative time

This program is designed for M.S. degree students to finish within 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 degrees must register for two units without a tuition waiver each quarter, until they complete their degrees. 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 be a completed significant, original research; and be formatted in the style of an appropriate scientific journal, since the manuscript is likely to be submitted for publication.

## Admissions

In addition to Loma Linda University (p. 23) 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 courses\*:

### Required:

- General biology (one year)
- General chemistry (one year)
- Genetics (one course)
- Organic chemistry (one year)
- General physics (one year)
- Precalculus
- Statistics (one course)

### Recommended:

- Biochemistry
- Calculus

\*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](mailto:ebs@llu.edu).

## Application time

Applications are accepted at any time, although students are usually admitted for Autumn Quarter. 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 502	Orientation to Graduate Biology	1
BIOL 545	Genetics and Speciation	4
BIOL 558	Philosophy of Science <sup>1</sup>	4
BIOL 607	Seminar in Biology <sup>2</sup>	3
BIOL 616	Research and Experimental Design	2
BIOL 617	Proposal Writing and Grantsmanship	2
BIOL 664	Science Communication Outreach <sup>4</sup>	1

**Select one or more course(s) from any of the following areas for at least 6 units** **6**

**Biological systems**

BIOL 517	Ecological Physiology	
BIOL 555	Molecular Genetics	
MICR 540	Physiology and Molecular Genetics of Microbes	
MICR 570	Mechanisms of Microbial Pathogenesis	

**Ecology**

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**

BIOL 409	Mammalogy	
BIOL 426	Invertebrate Paleontology	
BIOL 427	Vertebrate Paleontology	
BIOL 504	Biology of Marine Invertebrates	
BIOL 539	Behavioral Ecology	
GEOL 444	Paleobotany	
GEOL 545	Taphonomy	

**Religion**

REL_5__	Graduate-level Religion	3
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**Electives**

Additional courses required by the student's guidance committee to complete the total units required for the degree <sup>3</sup> **8**

ANAT 516	Neuroscience GS	
ANAT 542	Cell Structure and Function GS	
BCHM 515	Introduction to Bioinformatics	

**Research**

Typically research units will be graded each quarter and can be repeated for additional credit

BIOL 698	Thesis Research (1-8)	15
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**Total Units** **49**

<sup>1</sup> BIOL 559 Philosophy of Science and Origins required for students who have taken BIOL 475 Philosophy of Science and Origins or equivalent

<sup>2</sup> Each quarter in residence; 0.5 unit per quarter (Total units required may vary depending on the number of quarters a student is on campus.)

<sup>3</sup> 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.

<sup>4</sup> Fulfills service learning requirement

**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.

**Length of program**

Two (2) years – based on full-time enrollment; part time is permitted.

**Biology – Ph.D.****Program director**

Stephen G. Dunbar

**Program learning outcomes**

At the end of this program, the student should be able to:

1. Demonstrate critical independent thinking.
2. Plan and carry out independent research.
3. Critically evaluate links between philosophies of science and societal responsibilities.
4. Effectively communicate professional practice through oral and written skills.
5. Demonstrate a professional aptitude and attitude.

**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.

## Comprehensive

A written and oral comprehensive is required after the first summer of research. The student is required to provide a written report in the form of a publishable manuscript and to orally defend previous research in front of their research committee by the end of the Winter Quarter following the first summer of research work.

## Dissertation

The written dissertation must demonstrate 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 is 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 is designed for completion in the normative time of four years. In certain circumstances, students may need more time for completion. Students are required to be registered every quarter until the dissertation is completed and defended. For details, see the continuous enrollment and personal leave of absence policies (p. 36) listed in this CATALOG. Students who go beyond the normative time for completing their degree must register for two (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. 23) admission requirements, the applicant must also complete the following:

- 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. of 3.5 or higher in a M.S. degree program
- Complete the following courses\*:

### Required:

- General biology (one year)
- General chemistry (one year)
- General physics (one year)
- Genetics (one course)
- Organic chemistry (one year)
- Precalculus
- Statistics (one course)

### Recommended:

- Biochemistry
- Calculus

\*Some courses may be taken during residence at this university, with the approval of the EBS admissions committee.

\*Prerequisites may be waived for applicants who enter the program with a masters degree in a biological discipline.

## Application

Applications are accepted at any time. Review of applications 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 minimum of 65 units of didactic and research coursework is required, including at least 53 at or above the 500 level. See below for a list of courses. The student's advisory committee may require the student to take additional courses as electives

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 502	Orientation to Graduate Biology	1
BIOL 545	Genetics and Speciation	4
BIOL 558	Philosophy of Science <sup>1</sup>	4
BIOL 607	Seminar in Biology <sup>2</sup>	6
BIOL 616	Research and Experimental Design	2
BIOL 617	Proposal Writing and Grantsmanship	2
BIOL 664	Science Communication Outreach <sup>4</sup>	1

### Select course(s) from each of the following areas

Biological systems		2
BIOL 517	Ecological Physiology	
BIOL 555	Molecular Genetics	
MICR 540	Physiology and Molecular Genetics of Microbes	
MICR 570	Mechanisms of Microbial Pathogenesis	
Ecology		2
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		2
BIOL 409	Mammalogy	
BIOL 426	Invertebrate Paleontology	
BIOL 427	Vertebrate Paleontology	
BIOL 444	Paleobotany	
BIOL 504	Biology of Marine Invertebrates	
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<sup>3</sup> 10

ANAT 516	Neuroscience GS	
ANAT 542	Cell Structure and Function GS	
BCHM 515	Introduction to Bioinformatics	

### Research

Typically research units will be graded each quarter and can be repeated for additional credit

BIOL 699	Dissertation Research (1-8)	21
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**Total Units** 66

<sup>1</sup> BIOL 559 Philosophy of Science and Origins required for students who have taken BIOL 475 Philosophy of Science and Origins or equivalent

<sup>2</sup> each quarter in residence; 0.5 unit per quarter (Total units required may vary depending on the number of quarters a student is on campus.)

<sup>3</sup> 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 maximum of 12 units below the 500 level may be applied to the 65 units for the Ph.D. degree.

<sup>4</sup> Fulfills service learning requirement

## 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. Its purpose is to measure the student's knowledge of their field of study, and their 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 and oral research proposal and budget presentation for the research committee.
- 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

Four (4) years – based on full-time enrollment; part time permitted.

## Earth Science – Ph.D.

### Program director

Kevin E. Nick

The Department of Earth and Biological Sciences offers a program leading to the Doctor of Philosophy degree in earth science. Emphasis is on research and coursework in sedimentology, paleontology, igneous petrology, and environmental geology. Students are prepared for understanding the history of the earth and life, and the scientific approach to deciphering this history. Students are also encouraged to think independently and to consider various approaches to understanding the past. Research in paleontology can also be pursued through the curricula for the Master of Science degree in geology and the Doctor of Philosophy degree in biology.

## Program Objectives

The Doctor of Philosophy in earth science program prepares a student for academic or applied geosciences. Doctoral students learn and apply all aspects of research in the geosciences, and their research will contribute to the discipline. The integrated core course sequence provides the background to take the National Association of State Boards of Geology (ASBOG) Fundamentals of Geology (FG) examination leading to Geologist-In-Training (GIT) certification. Field-based courses and research are emphasized and supported by laboratory analyses and modeling. Students develop skills to critically evaluate and conduct research in the subdisciplines of sedimentology, paleontology, igneous petrology, or environmental geology. Throughout the curriculum, students are encouraged to develop an open-minded and investigative approach to the application of the scientific method to the resolution of geologic problems.

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.

## Program learning outcomes

By the end of the program, the graduate should be able to:

**PLO1 – Foundational Knowledge and Skills.** Characterize earth materials and their stratigraphic relations, demonstrating an understanding of current geologic processes and geoscience theory at a level required for their chosen degree program.

**PLO2 – Research.** Conduct research in their chosen field of specialization, acquiring professional-level knowledge and expertise appropriate to their degree.

**PL03 – Professionalism.** Demonstrate professional attributes necessary for interacting with colleagues and leadership, and contributing to their discipline.

**PL04 – Societal Interaction and Impact.** Interact with others on issues in philosophy of science and public interest.

## Student financial aid

Assistantships for research and/or teaching are available at the Department of Earth and Biological Sciences on a competitive basis. Additional 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.

## Registration and tuition after normative time

The program design is for Ph.D. degree students with geology backgrounds to finish in five years. In certain circumstances, students may require more time for completion. Students who are past the normative time for completing their degree may risk their departmental assistantship or incur tuition charges.

## General requirements

For information about requirements and practices to which all graduate students are subject, students should consult relevant sections of this CATALOG, as well as general information pertinent to the school in which this program is housed.

## Admissions

### Academic preparation requirements

Applicants must meet Loma Linda University (p. 23), Faculty of Graduate Studies, and Program admission requirements summarized below.

- Hold an undergraduate or graduate degree from an accredited institution. An undergraduate or M.S. degree in geology or earth science is strongly recommended prior to applying to the Ph.D. degree program. Students who show above average progress during the M.S. geology program may apply to and be accepted into the Ph.D. degree program, bypassing the M.S. degree.
- Achieve acceptable scores in English proficiency and general GRE examinations.
- Demonstrate the minimum required G.P.A. of at least 3.0.
- Expected undergraduate preparation includes:
  - Two quarters of college mathematics (including calculus)
  - General physics with laboratory (two quarters or one semester)
  - General chemistry with laboratory (one year)
  - Statistics (one course)
  - Undergraduate geology courses (see corequisites listed below)

Some of these courses, including undergraduate geology courses, may be taken during residence at Loma Linda University, with approval of the admissions committee.

Applicants must also participate in an interview with a program faculty member prior to acceptance. Students may contact the department at ebs@llu.edu for advice on admission requirements. Advanced standing toward Ph.D. course requirements may be granted based on coursework taken prior to admission and beyond undergraduate degree requirements.

## Application time

Applications must be completed by January 31 of the year being considered for admission, for priority consideration. Review of applications begins in February for Autumn Quarter admission. Research assistantships are competitively awarded.

## Program requirements

A minimum of 82 quarter units of academic credit for courses, seminars, and research is required (including at least 55 at or above the 500 level); 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 316	Mineralogy	
GEOL 317	Igneous and Metamorphic Petrology	
GEOL 318	Sedimentary Petrology	
GEOL 424	Structural Geology	
<b>Core</b>		
GEOL 443	Historical Geology	4
GEOL 510	Orientation to Graduate Geology	1
GEOL 515	Sedimentology and Stratigraphy	3
GEOL 537	Field Geology Sedimentology and Stratigraphy	2
GEOL 538	Field Mapping and Geologic Report Writing	4
GEOL 539	Field Geology Structures and Igneous Rocks	2
GEOL 558	Philosophy of Science <sup>3</sup>	4
or GEOL 559	Philosophy of Science and Origins	
GEOL 607	Seminar in Geology <sup>1</sup>	3-5
GEOL 617	Proposal Writing and Grantsmanship	2
GEOL 664	Science Communication Outreach <sup>2</sup>	1
Select two earth materials courses from the following:		7-8
GEOL 527	Earth Materials – Advanced Mineralogy (4)	
GEOL 528	Earth Materials – Advanced Igneous Petrology (4)	
GEOL 529	Earth Materials – Advanced Sedimentary Petrology (3)	
Select one paleontology course from the following:		4
GEOL 512	Invertebrate Paleontology (Select one paleontology course from the following:)	4
GEOL 513	Vertebrate Paleontology (4)	
GEOL 514	Paleobotany (4)	
GEOL 545	Taphonomy (4)	
Select two courses to total at least five hours from the following:		5-8
GEOL 526	Introduction to GIS for the Natural Sciences (2)	
GEOL 535	GIS Spatial Analysis for the Natural Sciences (3)	
GEOL 565	Analysis of Sedimentary Rocks (4)	
GEOL 575	Hydrogeology (4)	
HGIS 522	Principles of Geographic Information Systems and Science (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)	
Select one course to be approved by PhD committee of the following:		3-4



STAT 509	General Statistics	
STAT___	Statistics course related to dissertation topic and approved by dissertation committee	
<b>Religion</b>		
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	
<b>Dissertation Research and Writing</b> <sup>4</sup>		
GEOL 699	Dissertation Research <sup>4</sup>	12
<b>Electives</b>		
Additional courses recommended by the student's guidance committee to complete total requirements of 82 units. All GEOL graduate-level courses, not counted toward requirements, may count towards elective credit.		10-14
<b>Total Units</b>		<b>82</b>

<sup>1</sup> Registration is required for each quarter in residence, maximum units counted toward the degree total is 5

<sup>2</sup> Fulfills service learning requirement

<sup>3</sup> GEOL 559 Philosophy of Science and Origins required, in lieu of GEOL 558 Philosophy of Science, for students who have completed GEOL 475 Philosophy of Science and Origins.

<sup>4</sup> 12 units minimum; registration permitted for 1 to 4 units per quarter; typically dissertation research units will be graded each quarter and can be repeated for additional credit; GEOL 697 may apply towards elective credit but should not be used for dissertation research topics

## Seminar attendance

All graduate students in residence must register for and attend GEOL 607 Seminar in Geology each quarter in residence at Loma Linda University.

## 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.

## 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 upon consultation with the student's major professor and the course instructor.

## Non-Course 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 should complete advancement to candidacy by the autumn or winter quarter of their second year of residence. Application for advancement to candidacy is fulfilled by completing the following which are documented and approved with Form A:

1. Departmental approval of a research advisor, academic advisor, and committee.
2. Showing progress in the program while maintaining a satisfactory GPA.
3. Research committee approval of the comprehensive examination requirement as stated in the department student handbook.
4. Research committee approval of the written research proposal, budget, and oral defense of research topic and plan.
5. Being recommended by the program faculty.

## Presentation of research

Ph.D. degree students are required to present at scientific meetings and be involved with the scientific community.

Submission of a manuscript based on the dissertation research of the student and where the student is a primary contributor is also required for the degree.

## Dissertation

The written dissertation must demonstrate the completion of significant, original research and chapters must be written in the style of an appropriate scientific journal where manuscripts are likely to be submitted for publication.

## Defense of dissertation

A public, oral presentation of the dissertation is required. The written dissertation is presented to each member of the research committee for evaluation. The committee also evaluates the oral presentation and the student's responses to questions in a final oral defense of the research. When all steps are approved, the committee completes Form D.

## Normal time to complete the program

Five (5) years – based on full-time enrollment; part time permitted

## Environmental Sciences – B.S.

### Program director

George D. Jackson

The Department of Earth and Biological Sciences offers a program leading to the Bachelor of Science degree in environmental sciences. This program builds upon a strong interdisciplinary foundation in natural, physical, and earth systems sciences, leading to an understanding of the effects of human activities on environmental sustainability and management. In addition, because understanding the environment has become highly dependent upon 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. 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 may choose an advanced expertise in conservation biology and biodiversity, or environmental geology. This program will encourage students to develop critical-thinking skills, healthy lifestyles, and service-oriented attitudes necessary for finding effective and ethical solutions to environmental problems on both a local and global scale.

### Program learning outcomes

By the end of this program, the student should be able to:

1. Integrate each of earth's dynamic and interdependent component systems.
2. Critically evaluate the relation of science and faith within an environmental context.
3. Demonstrate written, technical, oral, and problem-solving skills necessary to collect, analyze, and share environmental data with scientific and public communities.
4. Identify professional and academic opportunities in the environmental science field.
5. Discuss concurrent environmental science research.
6. Examine human and natural causes of earth's environmental problems.
7. Address environmental problems as an environmental scientist.

### 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 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, GIS, climatology, and diverse health sciences; and public policy, law, or planning careers.

Environmental scientists may also become involved through employment or by volunteering with nonprofit organizations such as Adventist Development and Relief Agency International, as well as help world

populations learn how to use the earth's resources to their advantage in a sustainable manner.

### Preparation for teaching

In addition to the environmental sciences 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 undergraduate program director for further information. General elective units can be used for educational 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 strongly encouraged to contact the pre-health 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 coursework 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 8 units of general elective credit toward the B.S. degree. All internship appointments are subject to Environmental Sciences 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 projects within the context of environmental conservation, health, or sustainability in an effort to find new solutions to environmental problems.

### Honors program

Students who earn a G.P.A. of 3.0 or above, sponsored by a faculty member and with an approved research proposal, may apply to be accepted into the environmental sciences honors program. The honors student must register for at least 2 units of undergraduate research, conduct original research under a faculty member's direction, submit a written undergraduate thesis, and give a public oral presentation of their research.

### Required units and residence requirement

All unit requirements listed are quarter units. Minimum requirements include one year of full-time residence at Loma Linda University, completing 32 of the final 46 units; or a minimum of 45 total units of coursework 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 from a two-year junior or community college is allowed.

Please note: Grades of C- and below are not accepted for credit.

## Financial aid

The following tuition rate for Geology or Environmental Sciences programs apply: B.S. \$290/unit; 12–18 units—\$3,480 per quarter.

### Scholarships and discounts

Scholarships and discounts available to eligible undergraduate students in the Department of Earth and Biological Sciences include:

- Academic scholarships based on test results.
  - a. American College Test (ACT) score of 30 or above: \$1,600 (or 16 percent of tuition)—for a student who maintains a cumulative G.P.A. of at least 3.5, renewable for successive years.
  - b. Scholastic Aptitude Test (SAT): a 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.
    - National Merit Finalist Scholarship covers 100 percent of tuition.
    - National Merit Semifinalist Scholarship covers 34 percent of tuition.
    - National Merit Commended Scholarship covers 20 percent of tuition.
- Renewable G.P.A. scholarships (eligibility based on G.P.A. at the end of previous academic year): 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.
  - 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 nine percent of tuition).

### Guidelines

- All scholarships or other financial awards must not 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 awards 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 coursework (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 coursework at a nearby community college in order to complete their outstanding corequisite requirements.

In addition to Loma Linda University admissions requirements (p. 23), 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 corequisites listed below.

### Course corequisites

Corequisites must be completed at an accredited college or university. These courses are listed as they relate to general education requirements.

#### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area is required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (45 quarter units)

- College algebra (four units)
- Statistics (four units) offered at LLU
- Statistics using R (BIOL 305 Statistics Using the R Software Package offered at LLU)
- General biology with laboratory (12 units)
- General chemistry with laboratory (12 units)
- Another 12 credits of physical or life sciences

#### Domain 4: Social sciences (minimum 12 quarter units)

- Select from two of the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology.
- 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 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

#### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units

- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

## Electives

To meet the minimum total of 192 quarter units required for the degree. For more information regarding GE requirements for graduation, see LLU general education requirements (p. 26).

Please note: Grades of C- and below are not accepted for credit.

## Program requirements

### Required core courses

BIOL 449	Biodiversity and Conservation	3
BIOL 415	Ecology	3
BIOL 664	Science Communication Outreach	1
ENVS 434	The Environmental Context of Community Health	3
ENVS 455	Environmental Law and Regulation	4
ENVS 485	Seminar in Environmental Sciences <sup>1</sup>	0.5
ENVS 487	Internship in Environmental Sciences	4
GEOL 204	Physical Geology	4
GEOL 434	Introduction to GIS for the Natural Sciences (2)	2
GEOL 435	GIS Spatial Analysis for the Natural Sciences (3)	3
GEOL 464	Science Communication Outreach <sup>2</sup>	1
GEOL 475	Philosophy of Science and Origins	4

### Concentration

Select a concentration in Conservation Biology and Biodiversity OR Environmental Geology (see descriptions below) 24

### 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. 8

### Religion

REL_ 4__	Upper-division Religion	6
Select one course of 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	

### General electives

Any undergraduate courses taught at Loma Linda University, or other accredited college, to meet the 192-unit total requirement

**Total Units** 72.5

<sup>1</sup> All ENVS students are required to register and attend seminar every quarter while enrolled. Typically seminar units will add up to 3 units at the completion of the ENVS program.

<sup>2</sup> Fulfills service learning requirement.

## 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. However, one year of organic chemistry and one year of physics is required of most graduate programs listed above.

BIOL 406	Marine Biology	4
BIOL 407	Herpetology	3
BIOL 409	Mammalogy	4
BIOL 414	Biology of Marine Invertebrates	4
BIOL 415	Ecology	3
BIOL 428	Genetics and Speciation	4
BIOL 456	Techniques in Vertebrate Ecology	3
BIOL 466	Multivariate Statistics	3
BIOL 488	Current Topics in Biology	1-4
BIOL 495	Undergraduate Research	1
BIOL 497	Special Projects in Biology	1-4
ENVS 487	Internship in Environmental Sciences	4,8
ENVS 488	Topics in Environmental Sciences	1-4
ENVS 495	Special Projects in Environmental Sciences	1-4
ENVS 497	Undergraduate Research	1-4

### 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	4
GEOL 316	Mineralogy	4
GEOL 317	Igneous and Metamorphic Petrology	4
GEOL 416	Sedimentology and Stratigraphy	6
GEOL 424	Structural Geology	5
GEOL 426	Invertebrate Paleontology	4
GEOL 427	Vertebrate Paleontology	4
GEOL 443	Historical Geology	4
GEOL 455	Modern Carbonate Depositional Systems	3
GEOL 456	Field Methods of Geologic Mapping	4
GEOL 465	Hydrogeology	4
GEOL 488	Topics in Geology	1-4
GEOL 495	Special Projects in Geology	1-4
GEOL 497	Undergraduate Research	1
ENVS 487	Internship in Environmental Sciences	4,8
ENVS 488	Topics in Environmental Sciences	1-4
ENVS 495	Special Projects in Environmental Sciences	1-4

ENVS 497	Undergraduate Research	1-4
HGIS 424	Desktop GIS Software Applications	4

## Normal time to complete the program

Four (4) years – two (2) years (seven [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. Sedimentary geology, paleontology, igneous petrology, and environmental geology are areas of emphasis. The curriculum is designed as a degree-completion program; two years of college-level coursework should be completed before admission. The program aims to maintain affordability through tuition rates and scholarships. Please contact the department at ebs@llu.edu for assistance in planning for program entry or with any questions or comments.

## Objectives

The integrated core course (major) sequence of the geology degree provides students with a general background in geology as preparation for careers or graduate studies in geology, paleontology, and environmental geology. An emphasis on fieldwork provides the link to basic geological data beyond the classroom and laboratory. Students apply the scientific method to resolve geologic problems throughout the geology curriculum. Students are encouraged to consider the relationship among science, faith, and societal responsibility during this process.

## Program learning outcomes

By the end of the program, the graduate should be able to:

**PLO1 – Foundational Knowledge and Skills.** Characterize earth materials and their stratigraphic relations, demonstrating understanding of current geologic processes and geoscience theory at a level required for their chosen degree program.

**PLO2 – Research.** Conduct research in their chosen field of specialization, acquiring professional-level knowledge and expertise appropriate to their degree.

**PLO3 – Professionalism.** Demonstrate professional attributes necessary for interacting with colleagues, leadership, and contributing to their discipline.

**PLO4 – Societal Interaction and Impact.** Interact with others on issues in philosophy of science and public interest.

## Curriculum

The Bachelor of Science degree in geology requires a total of 192 quarter units. The total units are divided according to general studies requirements, major requirements, and electives.

The following summarizes the general categories and numbers of credits required for the degree and will help in planning the course schedule. All units are quarter units.

Major requirements—60 units

Major electives—14 units

Minimum general studies in the natural sciences—44 units

Minimum other general studies requirements—38 units

Other electives (this number will decrease if units in the above categories are greater)—36 units

Total—192 units

## Residence requirements

Minimum requirements include one year of full-time residence at Loma Linda University, completing at least 32 of the last 48 units; or a minimum of 45 total units of coursework 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 credit can be transferred from a two-year junior or community college.

## Undergraduate thesis

Students will prepare an undergraduate thesis based on a field or laboratory experience supervised by a faculty advisor. Students must register for at least two units of undergraduate research, conduct research under a faculty member's direction, submit a written undergraduate thesis, and deliver a public oral presentation.

## Geology careers

A baccalaureate degree in geology prepares a student to enter graduate programs in geology, paleontology, or environmental geology as well as for employment in environmental and energy-related industries, or (with the necessary education courses) for teaching in secondary schools. Most employment opportunities are for those with graduate degrees and may be found in industry, research, or college teaching.

In addition to the geology major, a student preparing to teach at the elementary or secondary level will need to complete the requirements for a teaching credential. The student should consult the Geology Program director for further information. Education courses will count toward general studies requirements.

## Scholarships and discounts for earth and biological sciences undergraduate students

Tuition rate for courses offered by the Geology Program (B.S.): \$290/unit; 12-18 units—\$3,480 per quarter

- Academic scholarships based on test results
  - a. American College Test (ACT) score of 30 or above: \$1,600 (or 16 percent of tuition). For a student who maintains a cumulative G.P.A. of at least 3.5, renewable for successive years.
  - b. Scholastic Aptitude Test (SAT): The 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.
    - National Merit Finalist Scholarship covers 100 percent of tuition.
    - National Merit Semifinalist Scholarship covers 34 percent of tuition.
    - National Merit Commended Scholarship covers 20 percent of tuition.
- Renewable G.P.A. scholarships (eligibility based on G.P.A. at the end of previous academic year): 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.

- 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 nine percent of tuition).

## Additional scholarship guidelines

- The sum of scholarships and other financial awards should not 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 deadline for verifying with Student Financial Services that the student qualifies for a scholarship for the academic year is the last day of final tests for the first quarter.
- The scholarships and reduced tuition awards listed here apply only to students enrolled in undergraduate programs in the Department of Earth and Biological Sciences.

Note: Determining 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 awards.

## Admissions

### Applications

Applications are accepted at any time. Review of applications begins in February for Autumn Quarter admission.

In addition to Loma Linda University (p. 23) admission requirements, the applicant must also complete the following requirements for admission to the Geology BS program:

- complete two years (minimum of 82 quarter units) of general education and science courses at any accredited institution. This should include the majority of the general studies requirements. Note that this would typically include a year of general chemistry and general physics with associated laboratory sections, and mathematics. Please contact the program director if you have questions about this requirement.
- achieve a minimum of 2.5 G.P.A. during the first two years of coursework.
- submit letters of recommendation from two faculty members at institutions previously attended.

Listed below are the admission and prerequisite requirements to obtain a bachelor's degree from Loma Linda University. These are listed in general education domain order.

## Prerequisites

### Domain 1: Religion (8 quarter units)

(completed during enrollment at LLU)

### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- Mathematics, including calculus (eight-12 units)
- Statistics (four units)
- General chemistry with laboratory—one full year, complete sequence
- General physics with laboratory—one full year, complete sequence
- Courses in general biology or ecology with laboratory (eight units)

### Domain 4: Social sciences (minimum 12 quarter units)

- One course dealing specifically with issues of human diversity is required.
- Select additional units, as needed, from: anthropology, economics, geography, political science, psychology, and sociology

### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university.
- Additional courses may include information systems, critical thinking, and public speaking

### Domain 6: Health and wellness (minimum 2 quarter units)

- A didactic course in health or nutrition (e.g., personal health, personal nutrition, population health, global health, and community nutrition) minimum of 2 units
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

For total unit requirements for graduation, see LLU General Education Requirements (p. 26).

## Electives

As necessary, to meet the minimum total requirement of 82 transferable quarter units. These units added to the 110 undergraduate units required in the program fulfill the 192 total units required for the bachelor's degree.

Please note: Grades of C- and below are not accepted for credit toward the degree.

## Program requirements

### Major

GEOL 204	Physical Geology	4
GEOL 316	Mineralogy	4
GEOL 317	Igneous and Metamorphic Petrology	4
GEOL 318	Sedimentary Petrology	3
GEOL 416	Sedimentology and Stratigraphy	6
GEOL 424	Structural Geology	5
GEOL 436	Low Temperature Geochemistry	4
GEOL 443	Historical Geology	4

GEOL 456	Field Methods of Geologic Mapping	4
GEOL 464	Science Communication Outreach <sup>1</sup>	1
GEOL 475	Philosophy of Science and Origins	4
Select at least one course from the following:		4
GEOL 426	Invertebrate Paleontology (4)	
GEOL 427	Vertebrate Paleontology (4)	
GEOL 444	Paleobotany (4)	
GEOL 485	Seminar in Geology (0.5)	3
GEOL 497	Undergraduate Research (Additional hours may be taken to fulfill Electives)	2
<b>Religion</b>		
Select at least one course from each prefix:		6
RELE 4__	Upper-division ethics	
RELR 4__	Upper-division relational	
Select one of 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	
<b>Geology electives</b>		
Select 14 units from the following or from any unused GEOL courses:		14
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 434	Introduction to GIS for the Natural Sciences (2)	
GEOL 435	GIS Spatial Analysis for the Natural Sciences (3)	
GEOL 455	Modern Carbonate Depositional Systems	
GEOL 465	Hydrogeology	
GEOL 486	Research and Experimental Design	
GEOL 487	Field Geology Studies	
GEOL 488	Topics in Geology	
GEOL 489	Readings in Geology and Paleontology	
GEOL 495	Special Projects in Geology	
HGIS 422	Principles of Geographic Information Systems	
HGIS 424	Desktop GIS Software Applications	
<b>General electives</b>		<b>36</b>
<b>Total Units</b>		<b>110</b>

<sup>1</sup> Fulfills service learning requirement

### Seminar attendance requirements

All students must register for and attend GEOL 485 Seminar in Geology for each quarter of residence at this University.

### Normal time to complete the program

Four (4) years – two (2) years (six [6] quarters) at LLU – based on full-time enrollment; part time permitted

## Geology – M.S.

### Program director

Kevin E. Nick

The Department of Earth and Biological Sciences offers the Master of Science in geology degree. Research and coursework emphasize field and laboratory studies in sedimentology, paleontology, igneous petrology, and environmental geology. Research in paleontology may also be pursued through the M.S. and Ph.D. degree curricula in biology, and through the Ph.D. degree curriculum in earth science.

### Program objectives

The Master of Science in geology program prepares a student to enter the fields of applied geosciences or further graduate studies. The integrated core course sequence provides the background to take the National Association of State Boards of Geology (ASBOG) Fundamentals of Geology (FG) examination leading to Geologist-In-Training (GIT) certification. Fieldwork is emphasized and provides a first-hand experience with geological phenomena that cannot be satisfactorily grasped or understood solely from classroom or laboratory study. Students will develop skills to critically evaluate and conduct research in the subdisciplines of sedimentology, paleontology, igneous petrology, or environmental geology. Throughout the geology curriculum, students are encouraged to develop an open-minded and investigative approach to the application of the scientific method to the resolution of geologic problems.

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.

### Program learning outcomes

By the end of this program, the graduate should be able to:

**PL01 – Foundational Knowledge and Skills.** Characterize earth materials and their stratigraphic relations, demonstrating understanding of current geologic processes and geoscience theory at a level required for their chosen degree program.

**PL02 – Research.** Conduct research in their chosen field of specialization, acquiring professional-level knowledge and expertise appropriate to their degree.

**PL03 – Professionalism.** Demonstrate professional attributes necessary for interacting with colleagues, leadership, and contributing to their discipline.

**PL04 – Societal Interaction and Impact.** Interact with others on issues in philosophy of science and public interest.

### 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.

## Overview of program requirements

### Two-year track—for students with an undergraduate degree in geology

A minimum of 52 quarter units, including 44 at or above the 500 level, constitutes the curriculum for the Master of Science degree in geology.

### 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 in geology program. Students will take 16 units of undergraduate geology courses as corequisites that are not part of the M.S. curriculum, as well as M.S. degree curriculum courses in geology with a minimum of 52 quarter units, including 44 at or above the 500 level. Total for the three-year track is 68 quarter units. Advanced standing may be granted toward corequisite requirements.

## Admissions

Applicants must meet Loma Linda University (p. 23), Faculty of Graduate Studies, and Program admission requirements summarized below.

- Hold an undergraduate or graduate degree from an accredited institution.
- Achieve acceptable scores in English proficiency and general GRE examinations.
- Demonstrate the minimum required G.P.A. of at least 3.0.
- Participate in an interview with a program faculty member prior to acceptance.
- Expected undergraduate preparation includes:
  - Two quarters of college mathematics (including calculus)
  - General physics with laboratory (two quarters or one semester)
  - General chemistry with laboratory (one year)
  - Statistics (one course)
  - Undergraduate geology courses (see corequisites listed under program requirements)

Some of these courses, including undergraduate geology courses, may be taken during residence at Loma Linda University, with approval of the admissions committee.

Students may contact the department at ebs@llu.edu for advice on admission requirements. Advanced standing toward M.S. course requirements may be granted based on coursework taken prior to admission and beyond undergraduate degree requirements.

Applications should be completed by January 31 of the calendar year being considered for admission and for priority consideration. Review of applications begins in February for Autumn Quarter admission. Research assistantships are competitively awarded.

Applicants without undergraduate geology courses are accepted in alternate years. It is recommended that applicants contact the department early in the application process at ebs@llu.edu.

## Program requirements

### Three-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 316	Mineralogy	4
GEOL 317	Igneous and Metamorphic Petrology	4
GEOL 318	Sedimentary Petrology	3
GEOL 424	Structural Geology	5

**Total Units** **16**

### M.S. degree requirements for all students—both two-year and three-year tracks

Students with an undergraduate geology degree may be granted advanced standing toward some requirements.

#### Core

GEOL 443	Historical Geology	4
GEOL 510	Orientation to Graduate Geology	1
GEOL 515	Sedimentology and Stratigraphy	3
GEOL 537	Field Geology Sedimentology and Stratigraphy	2
GEOL 538	Field Mapping and Geologic Report Writing	4
GEOL 539	Field Geology Structures and Igneous Rocks	2
GEOL 558	Philosophy of Science <sup>3</sup>	4
or GEOL 559	Philosophy of Science and Origins	
GEOL 607	Seminar in Geology (0.5) <sup>1</sup>	3-4
GEOL 617	Proposal Writing and Grantsmanship	2
GEOL 664	Science Communication Outreach	1

Select one earth materials course from the following: 3-4

GEOL 527	Earth Materials – Advanced Mineralogy (4)	
GEOL 528	Earth Materials – Advanced Igneous Petrology (4)	
GEOL 529	Earth Materials – Advanced Sedimentary Petrology (3)	

Select one paleontology course from the following: 4

GEOL 512	Invertebrate Paleontology (4)	
GEOL 513	Vertebrate Paleontology (4)	
GEOL 514	Paleobotany (4)	
GEOL 545	Taphonomy (4)	

Select two courses to total at least five hours from the following: 5-8

GEOL 526	Introduction to GIS for the Natural Sciences (2)	
GEOL 535	GIS Spatial Analysis for the Natural Sciences (3)	
GEOL 565	Analysis of Sedimentary Rocks (4)	
GEOL 575	Hydrogeology (4)	
HGIS 522	Principles of Geographic Information Systems and Science (2)	
HGIS 524	GIS Software Applications and Methods (3)	

#### Religion

REL_5__	Graduate-level Religion	3
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#### Thesis research and writing

GEOL 698	Thesis Research (1-3)	6
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#### Electives

Additional courses recommended by the student's guidance committee to complete total requirements of 52 or 68 units. All GEOL graduate-level courses not counted towards core requirements may be counted towards elective requirement.

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**Total Units** **52**

<sup>1</sup> Registration required for each quarter in residence; maximum counted toward the degree total is 3.0

<sup>2</sup> Fulfills service learning requirement

<sup>3</sup> GEOL 559 Philosophy of Science and Origins required, in lieu of GEOL 558 Philosophy of Science, for students who have completed GEOL 475 Philosophy of Science and Origins.

<sup>4</sup> 6 units minimum; registration permitted for 1 to 3 units per quarter; typically research units will be graded each quarter; can be repeated for additional credit; GEOL 697 may apply towards elective credit but should not be used for thesis research topics

### Seminar attendance

All graduate students must register for and attend (GEOL 607 Seminar in Geology) each quarter in residence at Loma Linda University.

### 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

### Advancement to candidacy

Students are urged to select a research project early in their program, in consultation with a faculty member approved by the department. By the third quarter of study, students should apply for advancement to candidacy and develop an approved, comprehensive, plan for completion of the degree. Advancement to candidacy is petitioned by completing Form A, which requires:

1. Departmental approval of a research advisor, academic advisor, and research committee.
2. Showing progress in the program while maintaining a satisfactory G.P.A.
3. Research committee approval of the written research proposal.
4. Passing the oral defense of the research proposal.
5. Being recommended by the program faculty.

### Research Presentation

Presentation of research findings at a scientific meeting is required.

### Thesis

The written thesis must demonstrate significant conclusions based on analysis of original data generated by the student. Chapters must be written in the style of an appropriate scientific journal.

### Defense of thesis

A public, oral presentation of the thesis is required. The written thesis is presented to each member of the research committee for evaluation. The committee also evaluates the oral presentation and student's responses in a final oral defense of the research. When all steps are approved, the committee completes Form D.

### 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 (seven [7] academic quarters) – based on full-time enrollment; part time permitted

36-month track – three (3) years (nine [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. Coursework 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.

## 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. Multiple working hypotheses are encouraged. The goal is to prepare students for effective careers in teaching or government.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Articulate the fundamental concepts of biology, geology, GIS, and environmental science.
2. Seek endorsement for subject-teaching in secondary education in either biological science or geoscience.
3. Apply effective written and oral communication to professional practice.
4. Apply the scientific method, hypothesis testing, and deductive reasoning.
5. Discuss key issues related to the integration of faith and science.
6. Seek employment in K-12 teaching, or civil or public service.

## 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 in the Department of Earth and Biological Sciences.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, the applicant must also complete the following requirements:

- Bachelor's degree in biology, geology, chemistry, physics, or other degree with typical biology and geology prerequisites.
- Undergraduate G.P.A. of at least 3.0 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 quarters (calculus recommended)
  - Biology—one-year
  - General physics with laboratory—one year
  - General chemistry with laboratory—one year
  - General ecology—one course

Some prerequisite courses 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. It is highly recommended that the applicant complete the application process by January 31 of the calendar year being considered for admissions, for priority consideration.

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/GEOL 558	Philosophy of Science	4
GEOL 518	Earth Structure, Process, and History	4
BIOL 607	Seminar in Biology (0.5) <sup>1</sup>	3
or GEOL 607	Seminar in Geology	
BIOL/GEOL 616	Research and Experimental Design	2
BIOL 664	Science Communication Outreach <sup>2</sup>	1
Select one course of the following:		3-4
BIOL 505	Marine Biology	
BIOL 515	Biogeography	
BIOL 517	Ecological Physiology	
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		22-23
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 529	Mammalogy	
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 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	
ENVS 434	The Environmental Context of Community Health	
ENVS 495	Special Projects in Environmental Sciences	
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 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)	
HGIS 422	Principles of Geographic Information Systems	
HGIS 424	Desktop GIS Software Applications	
Research/Project		
BIOL 695	Special Projects in Biology	4
or BIOL 697	Research	
or GEOL 695	Special Projects in Geology	
or GEOL 697	Research	
<b>Total Units</b>		<b>51</b>

<sup>1</sup> Registration required for each quarter in residence; 0.5 unit per quarter.

Maximum counted toward the degree total is 3 (6 quarters of seminar).

<sup>2</sup> Fulfills service learning requirement.

## 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 four 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**

Two (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 coursework provides a broad biomedical background, with opportunities for qualified students to not only study all aspects of human morphology from both didactic and investigative points of view, but to also 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 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.

### Program learning outcomes

By the end of the anatomy program, the graduate should be able to:

1. Apply the biomedical sciences to the study of human anatomy.
2. Demonstrate mastery of molecular, cellular, and integrative aspects of anatomy.
3. Interpret current literature in anatomy.
4. Make original contributions to biomedical science.
5. Demonstrate scientific and professional ethics.
6. Explain 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 an interdisciplinary faculty that integrates all 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, and successful grant-proposal writing. Students learn of new developments in the biomedical sciences through weekly seminars and gain presentation skills 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 course (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, enroll for research units. An IP will be assigned until the student registers for new units. The units should be spread over the time it takes to complete the thesis or dissertation research satisfactorily. An IP may not be carried 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

#### Pathologists' Assistant Program primary faculty

Cheryl Germain

Michael Weitzel

#### Pathologists' Assistant Program clinical faculty

Maria Nieves G. Rabina

### Admissions

In addition to Loma Linda University (p. 23) application requirements, 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.
- General test of the Graduate Record Examination (GRE): A total (verbal plus quantitative) score of no less than the sum of the scores corresponding to the 50th percentile of each, with neither score less than the 35th percentile; analytical writing 4.0. GRE scores older than five years from the date of matriculation are not considered.
- A full year of each of the following undergraduate courses:

- General biology
- General chemistry
- Organic chemistry
- General physics
- Biochemistry (a minimum of one quarter/semester)
- Strongly recommended:
  - Upper-division biology (such as cell and molecular biology)
  - A full year of biochemistry with labs
  - Research experience
  - Calculus

**PLEASE NOTE:** CLEP (College-Level Examination Program), pass/fail performances, and online classes are not acceptable for the science required courses. Additionally, science credits earned in professional schools (e.g., allied health professions, business, dentistry, nursing or pharmacy) do not fulfill requirements for admissions to the graduate program.

The program reserves the right to decide on the equivalence of courses presented by the applicant.

## Programs

Anatomy – M.S. (p. 280), Ph.D. (p. 280) Comparison (p. 281)

Pathologists' Assistant – M.H.S. (p. 282)

## 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 coursework 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 <sup>1</sup>	1

### Religion

RELR 540	Wholeness and Health <sup>2</sup>	3
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### Degree completion options

Coursework track:

ANAT__	Anatomy/Embryology electives (15 units)	
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Research track:

ANAT 697	Research (14 units)	
IBGS 605	Integrative Biology Presentation Seminar (1 unit)	

**Total Units** **45**

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Fulfills service learning requirement.

## Noncourse requirements

Coursework option: a comprehensive written examination over the graduate coursework in lieu of writing a thesis.

Research option: pass an oral examination administered by the student's graduate guidance committee after thesis has been completed.

## Normal time to complete the program

Two (2) years—based on full-time enrollment; part time permitted.

## Anatomy – Ph.D.

For the Ph.D. degree, students must complete a minimum of 70 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 dissertations 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	6
IBGS 512	Cellular Mechanisms and Integrated Systems II	6
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 604	Introduction to Integrative Biology Presentation Seminar	1
IBGS 605	Integrative Biology Presentation Seminar (1.0) <sup>2</sup>	2
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1

### Religion

RELE 5__	Must be numbered 500 or above	3
RELR 540	Wholeness and Health <sup>2</sup>	3
RELT 5__	Must be numbered 500 or above	3

### Research/Dissertation or Thesis

ANAT 697	Research (1-8)	12
IBGS 696	Research Rotations (1)	2

**Total Units** **70**

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Fulfills service learning requirement.

### Normal time to complete the program

Four (4) years—based on full-time enrollment; part-time permitted.

## Anatomy – M.S., Ph.D. Comparison

	Course Title	MS	PhD
<b>Basic Science Core</b>			
IBGS 501	Biomedical Communication and Integrity	2.0	2.0
IBGS 502	Biomedical Information and Statistics	2.0	2.0
IBGS 503	Biomedical Grant Writing		2.0
IBGS 511	Cellular Mechanisms and Integrated Systems I		6.0
IBGS 512	Cellular Mechanisms and Integrated Systems II		6.0
IBGS 522	Cellular Mechanisms and Integrated Systems II Journal Club		2.0
IBGS 523	Cellular Mechanisms and Integrated Systems III Journal Club		2.0
<b>Totals</b>		<b>4.0</b>	<b>22.0</b>
	Course Title	MS	PhD
<b>Major</b>			
ANAT 516	Neuroscience GS	6.0	6.0
ANAT 541	Gross Anatomy GS	7.0	7.0
ANAT 542	Cell Structure and Function GS	7.0	7.0
ANAT 544	Human Embryology Lecture	2.0	2.0
<b>Totals</b>		<b>22.0</b>	<b>22.0</b>
	Course Title	MS	PhD
<b>Seminars</b>			
IBGS 605	Integrative Biology Presentation Seminar (1)		2.0
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1.0	1.0
IBGS 607	Integrated Biomedical Graduate Studies Seminar <sup>1</sup>	1.0	1.0
<b>Totals</b>		<b>1.0</b>	<b>3.0</b>
	Course Title	MS	PhD
<b>Religion</b>			
RELE 5__	Must be numbered 500 or above		3.0
RELT 5__	Must be numbered 500 or above		3.0
RELR 540	Wholeness and Health <sup>2</sup>	3.0	3.0
<b>Totals</b>		<b>3.0</b>	<b>9.0</b>
	Course Title	MS	PhD
<b>MS completion options</b>			
Required units		15.0	
Coursework track:			
ANAT ____	Anatomy/Embryology electives (15 units)		
Research track:			
ANAT 697	Research ((14 units))		
IBGS 605	Integrative Biology Presentation Seminar		
<b>Totals</b>		<b>15.0</b>	
	Course Title	MS	PhD
<b>PhD research/dissertation</b>			
ANAT 697	Research (1-8)		12.0
IBGS 696	Research Rotations (1)		2.0
<b>Totals</b>			<b>14.0</b>
<b>Overall Totals</b>		<b>45.0</b>	<b>70.0</b>

<sup>1</sup> Registration and attendance required every quarter in residence, but units do not count toward total required for graduation.

<sup>2</sup> Fulfills service learning requirement.

## Pathologists' Assistant – M.H.S.

### Program director

Cheryl Germain

### Clinical Coordinator

Meghan Dorrell

### Medical director

Jeremy Deisch

Loma Linda University offers a professional course of study leading to the M.H.S. degree in pathologists' assistant. This degree prepares students for a career as mid-level health-care professionals in hospital pathology laboratories, private laboratories, universities, and industry.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Perform appropriate anatomic pathology techniques for the preparation, gross description, and dissection of human surgical tissue specimens.
2. Perform appropriate autopsy pathology techniques for the recovery, preparation, gross description, and dissection of human organs and tissue specimens.
3. Communicate effectively verbally and in writing.
4. Administer a pathology laboratory/autopsy service successfully.
5. Train other clinical health professionals using appropriate pedagogy.

## Accreditation

Loma Linda University is accredited by the WASC Senior College and University Commission (WSCUC), 1001 Marina Village Parkway, Suite 402, Alameda, CA 94501; telephone: 510/748-9001; fax: 510/748-9797; website: <http://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>).

### Pathologists' Assistant Program accreditation

In April, 2018, the Pathologists' Assistant Program was granted a five-year accreditation, with no citations or concerns, from the National Accrediting Agency for Clinical Laboratory Science (NAACLS). The next accreditation review is in 2023.

NAACLS is the premier accreditation for pathologists' assistant programs. Strict standards required for this accreditation ensure quality education and preparation for the certification examination and competence in the field as a pathologists' assistant. Loma Linda University School of Medicine's Pathologists' Assistant Program will adhere to required standards to produce high-quality and competent pathologists' assistants. For further information, contact the National Accrediting Agency for Clinical Laboratory Sciences, 5600 North River Road, Suite 720, Rosemont, IL 60018-5119; 847/939-3597 or 773/714-8880; website: <http://www.naacls.org>.

## Admissions

The annual application period is November 1-March 31. Applications and all supporting documents (e.g., transcripts, recommendations) must be received by the March 31 deadline. Dates are strict for acceptance

of application materials. The class will include 18 students. Accepted applicants will be notified by May 15 to begin the Autumn Quarter (late September).

In addition to Loma Linda University (p. 23) requirements, the applicant must all fulfill the following requirements:

1. A baccalaureate degree from an accredited institution
2. A preferred cumulative GPA of 3.0 or higher
3. Interview—Only select applicants will be invited for an individual interview (no group interviews).
4. All prerequisite courses must be completed at an accredited college or university in the United States prior to admission; coursework from international institutions is not accepted.
  - Biology with laboratory (12 quarter units/8 semester units)
  - General chemistry with laboratory, complete sequence (12 quarter units/8 semester units)
  - Organic chemistry, complete sequence (12 quarter units/8 semester units)
  - Microbiology with laboratory (4 quarter units)
  - College algebra or higher (3 quarter units)
  - English composition (complete sequence)
  - Strongly recommended: medical terminology and conversational Spanish
5. Three letters of recommendation—Recommendations from family members or friends are NOT acceptable. DO NOT ask the pathologists' assistant (PA) with whom you've shadowed for a recommendation.
  - a. Suggestions:
    - A laboratory professional (clinical or research) with whom the applicant has worked
    - An undergraduate professor
    - A work supervisor who can address the applicant's work ethic and dependability
  - b. Recommendations:
    - Speak with the persons from whom you are requesting recommendations and be sure they know you well, understand the program to which you're applying and why. Make certain they can speak to your abilities; not just that you are a nice person.
    - Be sure the persons supplying the recommendations understand that NO PAPER RECOMMENDATIONS ARE ACCEPTED! All recommendations must follow electronic procedure. If the recommender does not have an email account, help them create a free email account on yahoo or google
6. Proof of shadowing—During the interview the applicant will be asked to relate what a PA does during a normal working day. While there is no required number of hours to shadow, the applicant must be interactive, asking questions to learn the duties of a PA (ASCP). Contact information of the PA with whom you shadowed must be provided.
7. The GRE, or any other pre-graduate school standardized testing, is not required.



NOTE: There are no transfers of credit into the Pathologist's Assistant program. All courses in the curriculum must be completed at Loma Linda University.

The Pathologist's Assistant program follows the LLU Nondiscrimination Policy (p. 13).

## Program requirements

### First Year

#### Autumn Quarter

		Units
ANAT 544	Human Embryology Lecture	2
IBGS 501	Biomedical Communication and Integrity	2
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
PATH 501	Anatomy and Pathology I	4
PATH 521	Anatomical Techniques I	3

#### Winter Quarter

AHCJ 515	Curriculum Development in Higher Education	3
IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
PATH 502	Anatomy and Pathology II	4
PATH 522	Anatomical Techniques II	3
PHSL 588	Pathophysiology	4

#### Spring Quarter

IBGS 604	Introduction to Integrative Biology Presentation Seminar	1
PATH 524	Clinical Microbiology for Pathologists' Assistants	3
PATH 551	Disease Mechanisms I	3
PATH 581	Basic Pathologic Microanatomy	2
RELE 505	Clinical Ethics	3

#### Summer Quarter

PATH 534 <sup>1</sup>	Civic Engagement and Poverty: Service Learning	1
PATH 552	Disease Mechanisms II	3
PATH 564	Biomedical Photography	1
PATH 582	Advanced Microanatomy	2
PATH 598	Clinical Laboratory Management	2
PATH 644	Clinical Pathology Seminar	2

### Second Year

#### Autumn Quarter

PATH 741	Pathology Review I	2
PATH 761	Pathologists' Assistant Practicum I	9

#### Winter Quarter

PATH 742	Pathology Review II	2
PATH 762	Pathologists' Assistant Practicum II	9

#### Spring Quarter

PATH 743	Pathology Review III	2
PATH 763	Pathologists' Assistant Practicum III	9

#### Summer Quarter

PATH 744	Pathology Review IV	2
PATH 764	Pathologists' Assistant Practicum IV	9

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**Total Units:** 94

Multiple clinical rotations are assigned by the program director to ensure a varied and comprehensive clinical experience for each student. Rotations will include surgical pathology in academic and community settings, private laboratories, pediatric pathology, medical examiners offices and hospital autopsy services.

### Noncourse Requirements

- Will Alexander Lecture Series: Attendance at the Will Alexander Wholeness Series is mandatory in PGY1. The series extends from Fall to Spring Quarters, once a month, Wednesday evenings for one hour. The lecture series includes topics on wholeness, personal/professional development, care of creation, diversity, and service.

### Normal time to complete the program

Two (2) years (24 months) – full-time enrollment required

## Biomedical Sciences – M.M.S.

### Program Coordinator

Kenneth R. Wright

Students accepted into the Master of Medical Science (M.M.S.) degree program in biomedical sciences enroll in five of the six blocks taken by first-year medical students, but at a reduced class-load. Faculty members responsible for teaching students in the M.M.S. degree program teach these first-year blocks.

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 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 3 units of religion and a 7-unit, year-long seminar—including topics such as the science of learning, critical thinking, medical practice management, clinical cases, and writing a thesis paper. The remaining units come from the first-year medical curriculum—which includes the following blocks: foundations, hematology and immunology, musculoskeletal and skin, endocrine and reproductive, and cardiovascular. Although courses share lecture/active learning/laboratory experiences and assessments with the Doctor of Medicine (M.D.) 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.

### Program learning outcomes

By the end of this program, the graduate should be able to:

1. Demonstrate mastery of foundational knowledge in the basic sciences.
2. Develop skill in critical thinking and appropriate study strategies.
3. Develop a social support network and an attitude of teamwork.
4. Lay the foundation for the concept of whole-person care through spiritual, social, and scientific growth and knowledge.
5. Demonstrate personal ethics in both academic and social settings.

## Admissions

Applicants to the Master of Medical Science must satisfy the same requirements (p. 289) as those applying to the Doctor of Medicine Program at Loma Linda University. They will have completed a

<sup>1</sup> Fulfills service learning requirement

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). Students are accepted into the program on recommendation of the School of Medicine admissions committee only.

## Program requirements

BCVS 514	Cardiovascular Block	3.5
BENR 510	Endocrine and Reproductive Block	7
BFDN 511	Foundations I Block	12
BGIL 512	Foundations II – Gastrointestinal and Liver Block	9
BHMI 514	Hematology and Immunology Block	7
BMSC 510	Master of Medical Science Seminar	3.5
RELR 540	Wholeness and Health <sup>1</sup>	3
<b>Total Units</b>		<b>45</b>

<sup>1</sup> Fulfills service learning requirement

### Noncourse requirement

To be eligible for the M.M.S degree, all required courses must be completed with an overall G.P.A. of 3.0 or above and no grade below a "C."

### Normal time to complete the program

One (1) year (3.5 academic quarters) – full-time enrollment required

# Professional

## Academic information

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 website as llu (<http://www.llu.edu/assets/central/handbook/documents/Student-Handbook.pdf>). All 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 for each academic year. Students who have questions about the *Student Handbook* should contact the senior associate dean for medical student education.

### USMLE Steps I and II policy

The *Student Handbook* provides conditions and deadlines for taking and passing USMLE examinations.

## Program requirements

The School of Medicine evaluates students progress and readiness for graduation in the following competency domains:

### Competencies for medical student education

**Patient Care**—Students must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health in the context of whole person care.

- *History Taking*—Obtain and synthesize relevant and accurate information about the patient.
- *Physical Examination*—Perform appropriate, complete, and accurate physical examination.
- *Oral Case Presentation*—Provide an oral presentation of a clinical encounter appropriate for the clinical case, context, and audience.
- *Medical Documentation*—Document a clinical encounter in the patient record.
- *Procedures and Skills*—Perform skills and procedures required for patient care.
- *Patient Management*—Provide patient care that is compassionate, appropriate, and effective.

**Medical Knowledge**—Students must demonstrate the ability to effectively source and validate medical information, possess an adequate foundation of basic scientific knowledge, and apply this knowledge and information to the care of patients using clinical reasoning and problem solving skills in a whole person care approach.

- *Fundamental Medical Knowledge*—Comprehend the established and evolving basic and clinical biomedical sciences, including epidemiological and social/behavioral sciences.
- *Health Promotion and Disease Prevention*—Promote health and prevent disease.
- *Ethics and Spirituality, Culture of Patients*—Employ ethical principles and knowledge of religious beliefs and spirituality and cultural beliefs of patients and their families to enhance patient care.

- *Sourcing and Evaluation of Medical Information*—Use information technology to optimize delivery of patient care.
- *Problem Solving and Clinical Reasoning Skills*—Demonstrate problem solving and clinical reasoning skills

**Professionalism**—Students must demonstrate professional behaviors, attitudes and beliefs that allow patients, colleagues, members of the healthcare team and society to approach each physician encounter with an expectation of trustworthiness.

- *Personal Attributes*—Show ownership for one's choices, attitudes, and behaviors.
- *Relationship Attributes*—Demonstrate compassion, integrity and respect for others, including sensitivity and responsiveness to a diverse patient population.
- *Societal Responsibilities*—Fulfill obligation to patients, colleagues, and society.

**Systems-Based Practice**—Students must demonstrate an awareness of and responsiveness to the larger context and system of health care, (including health policy, social policy, and advocacy), as well as the ability to call effectively on other resources, including interprofessional teams in the system, to provide optimal health care.

- *Health Care Delivery Systems*—Demonstrate knowledge of health care delivery systems and their potential effects on the health of patients and communities.
- *System Resources*—Apply system-level approaches to improve quality of healthcare.
- *Interprofessional Education*—Collaborate effectively to improve health outcomes.

**Practice-Based Learning and Improvement**—Students must demonstrate the ability to investigate and evaluate their care of patients, appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

- *Evidence-Based Medicine*—Use principles of evidence-based medicine to optimize patient care.
- *Feedback, Self-assessment and Reflection*—Develop lifelong learning skills through seeking feedback, self-assessment, and reflection.
- *Practice-based Quality Improvement*—Engage in improvement of health care systems.

**Interpersonal and Communication Skills**—Students must be able to demonstrate culturally sensitive interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and professional associates. Students will recognize the presence of implicit bias.

- *Relationship-Building Skills*—Demonstrate adaptability in relationships with colleagues, patients, and their families.
- *Effective Listening Skills*—Actively engage in the skill of listening in educational and patient care settings.
- *Information Sharing Skills with Patients and their Families*—Communicate effectively within the context of the cultural beliefs, practices, and needs presented by patients and their communities.
- *Information Sharing with Professional Associates*—Present and document patient information to professional associates.
- *Communication with the Medical Team*—Work cooperatively with interprofessional health care teams.

**Whole Person Care**—Through the study and application of whole person care, students will develop an understanding of wholeness/wellness that is applied to their relationship with patients, colleagues, and themselves.

- *Whole Person Care of Patients*—Apply whole person care model to the care of patients.
- *Personal Wholeness of Self/Colleagues*—Apply Whole Person Care/Wellness to care of colleagues, and help support a healthy medical community. Implement wholeness strategies for personal development.

### 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 their current class but would like to participate in the commencement exercises, they must have completed a minimum of three months of the required senior clerkships, i.e., medicine, pediatrics, family medicine or surgery sub-internship, 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 university president, 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 Federation of State Medical Boards (FSMB). Additional information can be found on the FSMB website at [www.fsmb.org](http://www.fsmb.org)

## Postgraduate training

### Graduate specialty medical education residencies

Loma Linda University is affiliated with a variety of accredited residency programs in two sponsoring institutions. The first is Loma Linda University Health and the second Loma Linda-Inland Empire Consortium for Healthcare Education. 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 Health 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. Because 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 *AMA PRA Category I Credit(s)*<sup>™</sup> for physicians. Course offerings include weekly, bi-weekly, and monthly School of Medicine departmental grand rounds as well as 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:

Dana Gonzalez, Associate Director  
Loma Linda University School of  
Medicine

Continuing Medical Education Office  
11175 Campus Street, CP A1116G  
Loma Linda, CA 92350  
909/558-4963

[dmmgonzalez@llu.edu](mailto:dmmgonzalez@llu.edu) ([mmorrell@llu.edu](mailto:mmorrell@llu.edu))

## Clinical facilities

Clinical instruction takes place primarily at Loma Linda University Health, which includes the Loma Linda University Children's Hospital, Loma Linda University East Campus Specialty Hospital, Loma Linda University Surgical Hospital, Faculty Medical Offices (FMO), Loma Linda University Behavioral Medicine Center, and Loma Linda University Medical Center—Murrieta. Additional clinical teaching sites include Kettering Medical Center in Dayton, Ohio, Jerry L. Pettis Memorial Veterans Medical Center, Riverside University Health System-Medical Center, and the White Memorial Medical Center. Also utilized are Arrowhead Regional Medical Center, Riverside Community Hospital, Glendale Adventist Medical Center, and Kaiser Permanente.

### 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 a Level 1 trauma center

for the region, comprehensive stroke center, STEMI receiving center, and 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 and emergent 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 Surgical Hospital**

Loma Linda University Surgical Hospital is a specialty hospital that serves as a teaching resource for various specialties.

### **Loma Linda University Behavioral Medicine Center**

Loma Linda University Behavioral Medicine Center, a freestanding, full-service psychiatric hospital, opened in 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.

### **Faculty Medical Offices**

The Faculty Medical Offices (FMO) include facilities for multiple specialties and an outpatient surgery suite. The FMO is utilized for student outpatient experience.

### **Kettering Medical Center**

Kettering Medical Center (KMC), part of the Seventh-day Adventist Health care system is a tertiary care, level 2 trauma center delivering whole person care. It is one of the two major teaching centers in the Dayton Metro area which serves a population of greater than 1.5 million. It features cutting edge technology, state of the art clinical services with a cardiovascular division providing high volume interventional cardiology services and all aspects of structural cardiac procedures including the greatest volume of transcatheter aortic valve replacements in the region, a cancer center, and state of the art neurologic services including acute interventions. KMC has a greater than 50-year tradition of medical education, including medical student from both Wright State University and Loma Linda, resident, and fellow education.

### **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 facilities, including a new state of the art ambulatory care center 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 University Health System—Medical Center**

RUHS-MC, located 10 miles southeast of Loma Linda in the city of Moreno Valley, is a regional medical center providing care to all patients in need. Patients are available for student and resident training.

### **White Memorial Medical Center**

White Memorial Medical Center is located approximately 60 miles west of Loma Linda in 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.

### **AdventHealth Orlando (AHO)**

AdventHealth Orlando is a 1400 bed quaternary care center in Orlando, Florida, and is the major teaching hospital of AdventHealth. AHO has 6 major organ transplant programs, 200 critical care adult beds, multiple residencies and fellowships, and every conceivable capability to manage complex medical and surgical problems. The hospital serves as a referral facility as well as a community health resource. AHO has the highest possible rating (5-star) by the Centers for Medicare and Medicaid Services (CMS) and has been rated by U.S. News and World Report as the best hospital in Orlando for 11 consecutive years and on multiple occasions has been rated the top hospital in the state of Florida. AHO is the primary site for the Orlando Regional Campus of Loma Linda University School of Medicine.

### **AdventHealth for Children**

AdventHealth for Children (AHC) is the quaternary care children's hospital of AdventHealth and resides on the Orlando campus of AdventHealth Orlando. AHC is the major teaching and referral hospital for children in the AdventHealth system. AHC services include transplantations in multiple organ systems and a bone marrow transplantation program.

Comprehensive specialty care for children is available on the AHC campus and includes inpatient and outpatient services delivered with an award-winning, patient centered, whole person care philosophy.

## **Medical Scientist – M.D./Ph.D.**

### **Program director**

Penelope J. Duerksen-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 degree programs.

The Medical Scientist Program develops 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 Medical Scientist Program at Loma Linda University is designed to attract those students who are energized by engaging in biomedical research and wish to contribute substantially to this enterprise. The expectation is that graduates of this program will pursue careers in academic medicine and medical research. Areas of study for the Ph.D. degree include: anatomy; cancer, developmental, and regenerative biology; infection, immunity, and inflammation; and neuroscience, systems biology, and bioengineering. The program integrates graduate and medical education within a Christian environment, and is designed to allow completion of both the Ph.D. and M.D. degrees.

Students typically begin the combined degree program by taking two years of medical school, culminating in successful completion of Step 1 of the USMLE examination. Students then transition to the Ph.D. portion of the curriculum, where they take and pass required courses, successfully pass written and oral qualifying examinations, and complete and successfully defend doctoral dissertations. Students then transition back to the M.D. program, where they finish the final two years of training, completing all of the standard clinical rotations, and take and pass Step 2 of the USMLE. A student must finish all requirements for the Ph.D. degree before being allowed to register for the last year of medical school. In most cases, the sequence should take approximately eight years to complete.

Combined degree students must complete the full curricula for both the M.D. and the Ph.D. programs, with the exception that during the Ph.D. years, two rather than three 3-unit religion courses are required, which must include RELT 617 Seminar in Religion and the Sciences and either RELE or RELR 500-level or above classes; and during the M.D. years, complete 12 units of 700-level religion coursework rather than 14 units, with these 12 units to include RELR 775 Whole Person Care, RELE 708 Medicine and Ethics, and RELE 714 Advanced Medical Ethics. Students are encouraged to inquire about the possibility of waiving specific graduate-level classes where equivalent mastery has been demonstrated in the M.D. curriculum.

Students interested in beginning the sequence with Ph.D. training, or who have other special requests, are encouraged to communicate with the program coordinator, since some customization may be possible.

## 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 program. The application package for the Ph.D. degree requires scores for the general test of the Graduate Record Examination. Both programs must accept the candidate in order for the candidate's credentials to be evaluated by the MD/PhD committee for acceptance into the Medical Scientist Program (MD/PhD). 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 coursework.
3. Tuition deferment for the M.D. curriculum, upon completion of a Ph.D. degree.

Tuition assistance for the M.D. portion of the combined degree program is not given to all students who earn both degrees. Assistance for the M.D. portion will only be given in cases where an applicant has received approval from the School of Medicine MD/PhD Committee prior to beginning the M.D. coursework. Assistance that is received will be in the form of an institutional loan which will cover MD tuition and fees but will not include living expenses. The School of Medicine makes provision for the loan to be forgiven when a recipient meets the terms described below and in the loan agreement.

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 until they have finished the requirements for the Ph.D. degree. If a student withdraws from the Ph.D. degree program their 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.

If a student has received acceptances into both the M.D. and the Ph.D. programs, but is not accepted into the MSP, they may elect to complete one or both degrees; however, tuition support for the medical program will not be available to these individuals.

\* Stipends from the School of Medicine will be awarded for the first two years of the graduate program, provided that the student makes satisfactory academic progress and remains in good and regular standing. Stipends covering study beyond the first two years should ordinarily be obtained from the individual laboratories or departments in which the student conducts research.

## Medicine – M.D. Curriculum

The curriculum in medicine consists of four academic years. The foundational basic and clinical sciences are integrated throughout medical school, with an emphasis on the basic sciences in the first half, and the clinical sciences in the second half of the curriculum. Organ system blocks are used to integrate the traditional basic science disciplines and other important topics into a single course covering each system, with six blocks taught sequentially in year one, and four

blocks in year two. The educational program makes use of a wide variety of pedagogical methods—including but not limited to traditional and interactive lectures; problem, team, and case-based learning; personalized computer-based instruction; quantitative laboratory experiences; patient-care experiences; and the use of simulation and standardized patients.

Students also begin to develop the skills and professional behaviors that are integral to the safe, competent, compassionate, ethical, and Christian practice of medicine—both now and in the future—through participation in two longitudinal courses, which extend throughout medical school. The Clinical Skills course is designed to sequentially develop skills in patient-care, communication, critical thinking, practice-based learning and improvement, professionalism, and whole-person care. Students will have opportunities to participate in both inpatient and outpatient care experiences throughout each year of medical school, in addition to the use of standardized patients and simulation experiences. The Christian Physician Formation course is taught in LIFE communities, where small groups of students are paired with clinical faculty. This course includes a religion component, which is co-taught by faculty from the School of Religion and clinical faculty, as well as topics including resilience, professionalism, social determinants of health, and lifestyle medicine. Students are provided with a faculty mentor through this course to guide them through their educational journey.

The third year of medical education is organized into two components. The primary care block consists of rotations in internal medicine, pediatrics, and family medicine, and includes a continuity clinic experience. Surgery, obstetrics and gynecology, and neurology/psychiatry are combined in the second component. During these rotations, students obtain a foundation for patient care in ambulatory and hospital-based settings through a process of self-directed learning, guided supervision, and teaching by house staff and faculty members in the clinical setting, along with the use of standardized patients and simulation experiences. Recurring experiences in whole-person care, medical ethics, radiology, lifestyle and preventive medicine, social determinants of health, and patient safety are integrated into these core rotations. Students have the opportunity to explore areas of interest during two elective experiences.

During advanced integration weeks, third- and fourth-year students will have the opportunity to explore multiple topics. Students will attend plenary sessions led by visiting speakers each morning and participate in breakout groups in the afternoons. These sessions include topics on religion/spirituality, social determinants of health, cultural humility, resilience, and lifestyle medicine. Themes such as "Whole-Person Care" and "God and Human Suffering" will bring topics together to integrate learning. During the integration weeks, students will also have access to mentoring with regard to career planning, specialty choice, and the residency application process.

The fourth year of medical education requires students to integrate the knowledge and skills gained during the first three years, and apply it more autonomously to patient care. Students participate in supervised patient-care experiences in emergency medicine, intensive care medicine, preventive medicine and public health, a selective in either medicine or surgery, and a subintern-level experience in medicine, surgery, family medicine, or pediatrics. Students have ample opportunity to pursue individual interests during four months of elective rotations. To emphasize the importance of science in medical practice, up to a one-month elective must be completed in the basic science discipline of the student's choosing. Students have adequate flexible time to study

for Step II (clinical knowledge and clinical skills) of the USMLE and successfully participate in the residency selection process.

## Departments

- Anesthesiology (p. 293)
- Basic Science (p. 294)
- Cardiothoracic Surgery (p. 297)
- Dermatology (p. 297)
- Emergency Medicine (p. 298)
- Family Medicine (p. 300)
- Gynecology and Obstetrics (p. 303)
- Medical Education (p. 304)
- Medicine (p. 304)
- Neurology (p. 313)
- Neurosurgery (p. 314)
- Ophthalmology (p. 314)
- Orthopedic Surgery (p. 316)
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- Radiology (p. 329)
- Surgery (p. 331)
- Urology (p. 334)

## Admissions

### The Study of Medicine

To prepare for a career in medicine, applicants should pursue a broad understanding in the major areas of knowledge—the natural sciences, the behavioral sciences, and the humanities—which will assist them in learning throughout their lives.

The School of Medicine Admissions Committee selects applicants who are best suited to fulfill the mission of the school and to successfully practice medicine. The committee selects applicants 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 applicants to the School of Medicine demonstrate

excellent interpersonal skills and show evidence of sensitivity to the needs of humanity.

The Admissions Committee puts forth considerable effort to ensure that an applicant is qualified for medical school. The applicant's academic record and MCAT scores are reviewed to assess the applicant's ability to handle the academic rigors of the medical curriculum. The committee also looks for prerequisite qualities of character and personality, potential for self-direction, good judgment, integrity, and dedication to the ideal of service to humanity.

## Selection Criteria

Applicants are selected based on a holistic review of the academic record, MCAT scores, medical and service experiences, mission fit, recommendations, interpersonal and intrapersonal competencies, and personal interviews. The Admissions Committee seeks individuals who have demonstrated a serious personal commitment to the practice of medicine and have altruistic goals and ideals.

The School of Medicine is owned and operated by the Seventh-day Adventist Church; therefore, preference for admission is given to qualified members of the Church. However, it is a firm policy of the Admissions Committee to admit applicants from other faiths who have demonstrated a commitment to Christian principles and are best suited to meet the educational goals of the School. No applicant is accepted on the basis of religious affiliation alone.

### Required

Required courses must be completed at an accredited institution of higher education in the United States or Canada. The following courses are required for consideration:

General biology (excludes microbiology, anatomy and physiology), one year sequence with lab

General or inorganic chemistry, one year sequence with lab

Organic chemistry, one year sequence with lab

General physics, one year sequence with lab

Biochemistry, one academic term; lab recommended

CLEP and pass/fail performances are not acceptable for the required courses. Additionally, science credits earned in professional schools (e.g., allied health professions, business, dentistry, nursing, or pharmacy) do not fulfill requirements for admission to medicine. Advanced Placement (AP) credits for the required science courses generally are not accepted.

### Medical College Admission Test (MCAT)

Applicants must complete the MCAT prior to consideration by the Admissions Committee. The MCAT is based on knowledge gained from required science courses. The test must be taken no later than September of the year prior to anticipated matriculation. MCAT scores older than three years from the date of anticipated matriculation are not considered.

### Health-care experience

Applicants are required to obtain physician shadowing experience and direct patient care exposure to better inform their decision for a career in 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 function; intellectual-conceptual, integrative, and quantitative abilities; and behavioral and social attributes. Technological compensation can be made for some disabilities 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 high-fidelity simulations, 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 FUNCTION:** Students must have sufficient motor function to elicit information from patients by palpation, auscultation, percussion, and other diagnostic maneuvers. A student should be able to do basic laboratory tests (urinalysis, CBC, etc.); carry out diagnostic procedures (intravenous line placement, paracentesis, etc.); and read EKGs and X-rays. A student 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 student must 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, teamwork, 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 well-being 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.

Federal and state law and Loma Linda University policy require the School of Medicine to provide students who have disabilities, and who are able to meet the technical standards of the School of Medicine, reasonable accommodation in its academic programs.

## Application

Application to the School of Medicine must be submitted through the American Medical College Application Service (AMCAS). Invitations to submit a secondary application are sent to applicants. Letters of recommendation as specified are required and must be submitted to AMCAS

## Pre-entrance health requirement and health coverage

Medical students are exposed to patients beginning in the first year 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 term, students must give evidence in the form of physician records or college health service 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 student's account. Pre-entrance requirements may be found online at Student Health Service. Students are also required to have certain injections and immunizations repeated at various intervals during their enrollment, including an annual skin test for tuberculosis.

Medical students are required to have an influenza vaccination on an annual basis in order to meet the requirements of clinical sites where students will be working. These vaccinations will be administered by Student Health Service at the beginning of each flu season.

Incoming students are expected to have routine dental and medical care as well as elective surgery attended to prior to registration.

Medical 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 academic term. Student Health Plan benefit information may be found online at Student Health Service. The plan does not cover optical care and provides only limited dental care. A student who does not have health insurance coverage for their spouse/children may purchase coverage through the University's Department of Risk Management at the time of registration or during specified enrollment periods. The Student Health Plan is available online at Student Health Service. For further information, contact Risk Management at (909) 651-4010.

## Transfer

Loma Linda University School of Medicine accepts transfer applications if transfer positions are available. Opportunities for transfer are rare. If a transfer position should be available, applications are accepted only from students in good standing at LCME-accredited allopathic medical schools in the United States. Among the requirements for transfer consideration, students must have completed all preclinical coursework and successfully passed USMLE Step 1.

## Program requirements

### First Year

MCPF 510	Christian Physician Formation	4
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MCSD 510	Clinical Skills Development	5.5
M CVS 510	Cardiovascular Block	9
MENR 510	Endocrine & Reproductive Block	9
MFDN 511	Foundations I Block	13.5
MGIL 512	Foundations II – Gastrointestinal and Liver Block	12.5
MHMI 514	Hematology and Immunology Block	8
MPLM 510	Pulmonary Block	6
MSEL 510	First-Year Selective	2
RELR 704	Orientation to Christian Physician Formation	2
RELT 716	God and Human Suffering	2
Select one of the following: <sup>1</sup>		2
RELR 749	Marriage and Family Wholeness	
RELR 776	Christian Spirituality and the Health Professional	
RELT 706	Adventist Beliefs and Life	
RELT 707	Medicine, Humanity, and God	
RELT 718	Adventist Heritage and Health	
RELT 740	World Religions and Human Health	
RELT 764	Paul's Message in Romans	
RELT 767	Apostle of Hope: The Life, Letters, and Legacy of Paul	

### Second Year

MAIN 610	Application & Integration Block	9.5
MCPF 610	Christian Physician Formation	2
MCSD 610	Clinical Skills Development	3
MMSK 610	Musculoskeletal and Skin Block	5
MNHB 610	Neuroscience & Human Behavior Block	16
MREN 610	Renal and Urinary Block	7
MSEL 610	Second-Year Selective	2
RELE 708	Medicine and Ethics	1
RELR 774	Whole-Person Care for Physicians	1
Select one, not taken during the first year, from the following: <sup>1</sup>		2
RELR 749	Marriage and Family Wholeness	
RELR 776	Christian Spirituality and the Health Professional	
RELT 706	Adventist Beliefs and Life	
RELT 707	Medicine, Humanity, and God	
RELT 718	Adventist Heritage and Health	
RELT 740	World Religions and Human Health	
RELT 767	Apostle of Hope: The Life, Letters, and Legacy of Paul	
RELT 734	Foundations for International Health-Care Missions	
RELT 764	Paul's Message in Romans	

### Third Year

1.5 units = 1 week of clinical clerkship		
FMDN 701	Family Medicine Clerkship (6 weeks)	9
GYOB 701	Gynecology and Obstetrics Clerkship (6 weeks)	9
MCPF 710	Christian Physician Formation	3
MEDN 701	Medicine Clerkship (8 weeks)	12
MNES 791	Third-year Elective (4 weeks) <sup>2</sup>	6
NEPS 710	Neurology/Psychiatry Clerkship (8 weeks)	12
PEDS 701	Pediatrics Clerkship (8 weeks)	12
RELE 714	Advanced Medical Ethics	2
SURG 701	Surgery Clerkship (8 weeks)	12

**Fourth Year**

Clinical clerkships		
EMDN 821	Emergency Medicine Clerkship (2 weeks)	3
MDCJ 821	Preventive Medicine and Population Health (4 weeks) <sup>3</sup>	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	
Selectives (4 weeks)		
MSEL 824	Fourth-Year Selective in Medicine	3
MSEL 825	Fourth-Year Selective in Surgery	3
Select 24 units (16 weeks) of the following:		24
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	
<b>Total Units</b>		<b>252</b>

**Normal time to complete the program**

Four (4) years – full-time enrollment required

<sup>1</sup> Not limited to the courses listed.<sup>2</sup> Upon permission, students may complete this course as the first elective in the fourth year<sup>3</sup> Fulfills service learning requirement



# Anesthesiology

The goals of the Department of Anesthesiology are to:

1. Provide necessary anesthesia, analgesia, pain control, and intensive care of the highest caliber with Christian empathy to patients at Loma Linda University Medical Center and its affiliated facilities.
2. Educate medical students, dentists, nurse anesthetists, and anesthesiology residents in the fields of anesthesia, critical care, perioperative medicine, and pain control.
3. Provide increased knowledge on the use of anesthetic and analgesic agents.

## Critical Care Anesthesiology

Robert Martin, Chair

Ihab Dorotta, Head

## Primary faculty

Carolyn Abbasi

Shelley F. Abdel-Sayed

Zulficar Ahmed

Donald L. Anderson

Ronald Atillo

Sherif A. Azer

Kristen R. Bandy

Alexandra Bandy

Brent J. Barker

Steven Barr

Michael Benggon

Felema Bitfu

Baher N. Boctor

Stanley D. Brauer

Douglas Brockmann

Justin Calvert

Alba Carpenter

Deborah Carritte

Harmony F. Carter

Michael Carver

Jose Cesar

Melody Chang

Amanda Chao

Carl E. Collier

Mark Comunale

Francis Comunale

Carmencita Coronel

Susan Cosgrove

David Creamer

Jennifer Cristall

Christopher Cullom

Ihab R. Dorotta

Michael Douglas

Hilcias Duran-Gheorghe

Linninea Ebell

Thomas A. Engel

Sandra Tatiana Fortner

Corwyn Fortner

Jordanne Fruits

Jennifer Gastelum

Jason W. Gatling

Elizabeth A. Ghazal

Crystal Gutierrez

Tiffany Hadley

Mohammad Hassanian

Derek Ho

Justin E. Horricks

JulieAnn Hsu

Huayong Hu

Tony Hu

Chris Huang

Daniela S. Karagyozyan

Jonathan Kelling

Uoo Kim

Adeline Kim

David Kim

Benjamin Kuo

Jeffrey Lane

Deon Lau

Ryan E. Lauer

Martin Le

Jessica Lee  
 Sandra Lee  
 Sandra Lee  
 Anita Lee  
 Patrick D. Leiter  
 John Lenart  
 Donna Lien  
 Catrissa Lightfoot-Siardia  
 Nicholas Edward Loper  
 Simona Lupu  
 Kristel Jan Magsino  
 Linda Martin  
 Robert D. Martin  
 Carin Mead Mascetti  
 Linda J. Mason  
 Melissa Dawn McCabe  
 Edward McCluskey  
 Deborah W. McIvor  
 Ali Mehdizadeh  
 Kimberly G. Menefee  
 Candy Miranda  
 Shannon M. Mulder-Michaelson  
 Kevin Nasseri-Noori  
 Nadia Nathan  
 Kenneth Neff  
 Carlos Enrique Neumann  
 Monica M. Neumann  
 Laura Ngo  
 Paul K. Nguyen  
 Katherine Nurkse  
 Ioana Pasca  
 Alexander Santillan Quiroz  
 Davinder Singh Ramsingh  
 Ronak Raval  
 Lowell W. Reynolds  
 Elena Rudoy

David Sanner  
 Ricardo Sayat  
 Nitin Shah  
 Gary W. Shih  
 Melinda Sloan  
 Leonard Soloniuk  
 Joseph Soo  
 Gary R. Stier  
 Whitney Alison Sullivan-Lewis  
 Shirley Tan  
 Teresa Thompson  
 Tarrah Tokishi  
 Ryan C. Tone  
 Mihn Chau Tran  
 Michele VandenHoven  
 Rashmi Vandse  
 Victoria Vo  
 Linda I. Wat  
 Peter White  
 Mark Wittman  
 Michelle Woodfin

### **Secondary faculty**

Gregory Cheek  
 Christopher Jobe  
 Rodney McKeever  
 Shawn Uraine

### **Emeritus faculty**

Martin Allard  
 Burton A. Briggs  
 Maureen Bull

## **Basic Science**

The objectives of the Department of Basic Sciences are to:

1. Offer relevant coursework 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 graduate curricula leading to M.S. and Ph.D. degrees designed to provide graduate students with 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, Vice chair

### **Division of Biomedical Engineering Science Division**

Michael Pecaut, Vice chair

### **Division of Microbiology**

Hansel M. Fletcher, Vice chair

### **Division of Pharmacology**

John Buchholz, Vice chair

### **Division of Physiology**

John H. Zhang, Vice chair

### **Primary faculty**

Abu Ahmed

Danilyn M. Angeles

Jerome Badaut

Vladimir Bashkirov

Erik Behringer

Arlin Blood

Danilo Boskovic

Eileen J. Brantley

Aldo Bruccoleri

John N. Buchholz

Carlos A. Casiano

Xin Sean Chen

Sheng Chen

Wayne Cheng

Bhaskar Das

Sinisa Dovat

Desislava Doycheva

Johnny Figueroa

Barbara Holhouser

Xiang-Qun Hu

Mark Johnson

Isaac Kremsky

Daisy D. De Leon

Marino A. De Leon

Penelope J. Duerksen-Hughes

Valeri Filippov

Hansel M. Fletcher

David A. Hessinger

Salma Khan

William H. Langridge

Jing Li

Jun Ling

Qing Yi Ma

Xiao W. Mao

Eugenia I. Mata-Greenwood

Jamie Milligan

Gregory A. Nelson

Stephen Nyirady

Andre Obenaus

Marvin Payne

William Pearce

Michael Pecaut

Eustace Penniecook-Sawyer

Christopher C. Perry

Nicolino Rizzo

Michael Samardzija

Keith Schubert

Reinhard Schulte

Prativa Sherchan

Rui Song

Ubaldo A. Soto-Wegner

Lawrence Sowers

John Stout

Richard S. Sun

Jiping Tang

Julia J. Unternaehrer-Hamm

Roman Vlkolinsky

Nathan R. Wall

Charles Wang

Kylie J. Watts

Christopher G. Wilson

Sean M. Wilson

Colwick Wilson

Daliao Xiao

Steven M. Yellon

John H. Zhang

Lubo Zhang

**Secondary faculty**

Olayemi Adeoye

Frakis Almaguel

Nancy J. Anderson

Besh Rhyl Barcega

Samuel Barnes

Brenda L. Bartnik-Olson

David J. Baylink

Abigail Benitez

Eleanor Blakely

David A. Bush

Cindy X. Cai

Kakarla Chalam

Chien-Shing Chen

Keith K. Colburn

Bradley A. Cole

Khashayar Dashtipour

Mohammad Dastjerdi

Daniel DiLorenzo

Ihab Dorotta

Joseph Fan

Ronald Fernando

Kendra Fisher

Umesh Gangadharmath

Ciprian Gheorghe

Susan Hall

Lei Huang

J. Paul Jacobson

Willie L. Davis, Jr.

Carlos A. Garberoglio

Elizabeth A. Ghazal

June-Anne Gold

Christian S. Jackson

Alan K. Jacobson

T. Michael Kashner

Daniel K. Kido

Michael A. Kirby

Wolff M. Kirsch

Steve C. Lee

Xian Luo-Owen

Timothy Martens

Fayth Miles

Saied Mirshahidi

Subburaman Mohan

Monica Neumann

H. Bryant Nguyen

Thomas A. O'Callaghan

Peter H. Pham

Suzanne Phillips

Xue Zhong Qin

Mark Reeves

E. Ellen Reibling

Lawrence Sandberg

Kristin A. Seiberling

Matilda Sheng

Wei-Xing Shi

Sam Siddighi

Jerry Slater

Dustin D. Smith

Jason C. Smith

Maulin Soneji

Salvador Soriano

Donna D. Strong

Konrad Talbot

Xiaolei Tang  
 Karen A. Tong  
 Abel Torres  
 Marcelo Vazquez  
 Leonard S. Werner  
 N. Dan Wycliffe  
 Gary Y. Yang  
 Xiangpeng Yuan  
 Xiao-Bing Zhang  
 Zhiwei Zhang

### **Emeritus faculty**

Charles Ducsay  
 Daila Gridley  
 Barry Taylor  
 Anthony Zuccarelli

## **Cardiothoracic Surgery**

The Department of Cardiothoracic 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 an ACGME-approved residency 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.
5. Promote collaboration with adult cardiology to offer advanced therapies to select patients with complex cardiovascular disease (e.g., transcatheter aortic valve replacement [TAVR], percutaneous mitral valve repair [MitraClip], or mechanical circulatory support [LVADs]).
6. Provide clinical support and professional resources as a tertiary care center to community-based cardiac surgery programs in the region.

### **Chair**

Anees J. Razzouk

### **Vice Chair**

Joshua Chung

### **Head**

Ahmed Abou-Zamzam

### **Primary faculty**

Joshua Chung  
 Rosario Florida  
 Randall Fortuna  
 Walter Hurtado  
 Sarika Jain  
 George Kafrouni  
 Joshua T. Gysbers, PA  
 Nguyen Le  
 Timothy Martens  
 Jennifer Mohr, PA  
 Peter Peng  
 David G. Rabkin  
 Anees J. Razzouk  
 O. Howard Shattuck, PA  
 Reza Salabat  
 Mihir Sheth  
 Bruce Toporoff  
 Salman Zaheer

## **Dermatology**

### **Chair**

Harry Dao, Jr.

### **Primary faculty**

Nancy J. Anderson  
 Conroy Chow  
 Betsy Furukawa  
 Linda Golkar  
 Harry Dao, Jr.  
 Shawna K. Langley  
 Justin D. Love  
 Jariene D. Luke  
 Kenneth Macknet  
 Lavonne Meadows  
 Michael Messina  
 Tanya Nino  
 Jack Seeburger



Kristin Carter Smith

Fred Soeprono

Abel Torres

### **Secondary Faculty**

Justin Kerstetter

### **VA Faculty**

Desmond Gibson

Jane Hirokane

Sharon Jacob-Soo, Dermatology Section Chief

Kenneth Dale Macknet

Jack Seeburger

## **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 crossroad interface between the community and medical center services—providing a point of access to medical care for many people who are seriously and unexpectedly ill, and whose conditions may be compromised by geographic isolation and socioeconomic disadvantage.

The objectives of the department are to:

1. Provide and coordinate cost-effective, empathetic, compassionate, and excellent pre-hospital, emergency, and trauma services.
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 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.

### **Division of General Emergency Medicine**

E. Lea Walters, Chair

Lance A. Brown, Vice Chair Operations

### **Division of Pediatric Emergency Medicine**

Lance A. Brown, Head

### **Division of Academic Affairs Emergency Medicine**

Dustin Smith, Vice Chair

### **Primary faculty**

Shaher Altoumah

Moosa Matt Azadian

Besh Rhyl Barcega

Emily Barrett

Robert Bassler

Austin Beck

Deena Bengiamin

Steven Bolger

Caitlin Borkowski

Lance A. Brown

S. Nohemi Caldwell

Weyjuin Chao

Brian Chen

Kevin Chen

Sarah J. Christian-Kopp

Samuel Chua

Randall Culler

Lynda Daniel-Underwood

Morgaine Daniels

Andrew Davis

Megan Dickson

Marque Dietzler

Vi A. Dinh

William Downes

Radu Dudas

W. Seth Dukes

Bogdan Dumitriu

Stacey Ernest

Diandra Escamilla

Molly Estes

Joseph Fargusson

Jessica Fields

Lizveth Fierro

Brian Foster

Shubhangi Gaikwad

Paul Giem

Brian Gordon

Jeff T. Grange

Casey Graves

Steven M. Green

Shayne Gue

Mindi J. Guptill

Paul Hanna	John Naftel
Melvyn Harris	Leza Naydich
Korbin N. Haycock	Steven Nazario
Danielle Hindi	Timothy Nesper
Sarah Holgren	Olen Netteburg
Eugene Hu	Nancy Ngo
Timothy Ibrahim	Steven Tamba, NP
Yaron Ivan	John Michael O'Neal
Zan Jafry	Humberto Ochoa
Sharmin Kalam	Jessica Alvarez, PA
Aqeel S. Khan	Ajit Pang
Michael Kiemeny	Karli Parlette
Eugene Kim	Sarah Peterson
Grace J. Kim	Lisa Ponsford
Tommy Y. H. Kim	Alayna Prest
Sunghee Kim	Melanie Randall
Patricia Korszyk	Kimber Raswon
Heather Kuntz	E. Ellen Reibling
Kristina Kyle	Jon Boyd Roper
William Lee	Daniel Rossie
Cody Limone	Charlotte Roy
Stephen Lin	Amy Russell
Andrew Little	Paul Savino
Chin-Yu Jean Lo	Mary A. Savory
Katia Lugo	Geron Sheppard
R. Daniel Luther	Thomas S. Sherwin
Daniel Lymon	Andrew Simmons
Darcy Mainville	Karan Singh
Claire L. McArthur III	Dustin D. Smith
Carmen Martinez Martinez	Jennifer Tango
Zachary McCarty	Heather M. Tassone
Amber Mejia	Rachel Tena
James Mitchell	Tamara L. Thomas
Caroline Molins	Mark Thomas
Nicholas Montano	Jessica Thomas
James A. Moynihan	Kevin Tomecsek

Cory Toomasian

Louis Tran

Stephanie Tseeng

Nitin Ubhayakar

Daniel Udrea

Reza Vaezazizi

Pablo Vargas

Brittaney Vargus

E. Lea Walters

Deborah L. Washke

Krista Wiese

Maciej Witkos

Brian J. Wolk

Timothy P. Young

Sophia Zabadayev

Kimberly R. Zimmerman

### Secondary faculty

Sara Johnson

H. Bryant Nguyen

Kathy Valdeverona

## 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 family medicine specialty.
2. Educate students and residents to provide evidence-based, best-practice, chronic-disease care that spans the arc of care—from prevention to management of 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 all genders and ages.
4. Teach students and residents skills necessary for taking a spiritual history, and for incorporating spiritual and psychosocial dimensions 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 as well as 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

Roger D. Woodruff

### Vice Chair

Daniel Reichart

### Head, Geriatric Medicine

Wessam Labib

### Head, Palliative Medicine

Gina Mohr

### Primary faculty

David Ahamba

Natesha Ambs

Rose Appel

James Appel

Javier Armijo

Edna Arteaga-Hernandez

Rebecca Barnard

John Bas

Randy Beddoe

Daniel Bedney

Prashath Bhat

Robert Bourne

John Branch

Ron Brathwaite

Julie Bryson

Mauricio Bueno

Daniel Carmillo

Zachary J. Cash

Jian Chen

David Cherepuschak

Jeffrey Cho

Chad Cole

Ariel Cole

Walter Combs

Robin Creamer

James E. Crouse

Isam Victor Dafdony

Katalin Danji

Jhanelle Dawes

Yiming Ding

Jennifer Doan	Tyler Ladue
Mary Dubisz	Boram Lee
Jack Dubois	Gilbert Lee
Carlos Dumois	Tony Lee
Richelin Dye	David Lennon
Elizabeth Elliott	Andre de Leon
Lindsey Elsea	Tate de Leon
N. Margarete Ezinwa	Hugo Leon
Allen Felix	Michael Lloyd
Daniel Flaming	Jason Lohr
Lisa Flores	Marc Ma
Christopher Flores	Richard Madrid
Daniel Franco	Tarek Mahdi
Cindy Gamboa	Daniel Maldonado
William Gerling	Kyle Masi
Herbert Giebel	Matthew McCarty
Claire-Alyce Gobble	Morodak Meas
Candice Golez	Gilberto Medina
Murlan Grise	Raj Mehta
Serena Gui	Talha Memon
Rio Gutierrez	Shishin Miyagi
Raul Hernandez	Walter Morgan
Kevin Herrick	Ivy Mulinge
Mark Holthouse	Scott Nass
Darrel Hopkins	Eddie Needham
Jonathan Horstmann	James Nozaki
Tae-Woong Im	Barbara Orr
Sharon Jamie	Shantharam Pai
Ecler Jaqua	Erik Palmer
William Jih	Richard Parker
Kris Johnson	Carl Pean
Jordan Kattenhorn	Lauren Van Putten
Jennifer Keehbauch	Robert Quigley
Kamal Kejriwal	Darlene Rae
Sirvard Khanoyan	Maisara Rahman
Ann Klega	Manfred Ramos

Karolis Raudys

Brenda Rea

Armando Lemus-Hernandez

Jessica McClintock

Rami Haddad

Calvin Hagglov

Sara E. Halverson

Mary A. Hanna

Joan E. Haynes-Lee

Jeffrey L. Kim

Richard Kim

Wessam K. Labib

Hobart H. Lee

Allen Liu

Maria B. Lohr

Laurie McNaughton

Gina J. Mohr

Kelly R. Morton

Juan Najarro

Van Nguyen

Michelle E. Reeves

Daniel Reichert

Magda Robinson

Daniel Roquiz

Khaled El Said

Luis Samaniego

Joseph Scherger

Karen Shannon

Kevin C. Shannon

Nadia Sheridan

Kevin Sherin

Marc Shlachter

Sabiha Siddiqui

Sarah De Almeida E Silva

Julio Silvestre

Lauren M. Simon

Mina Soliman

Eric Steele

Courtney Stroble

Mark Sutton

Lucila Tarin

Victoria Teppone

John Testerman

Lisa Thompson

Sherilyn Toppenberg

John Torquato

Mai-Linh, Tran

Juna Tsao

Lori Urban

Robert Vandervoort

Humberto Villalvazo

Sarah Villegas

David Ward

Peter Weiss

Elizabeth West

Sarah Winslow

Elizabeth Wolpern

Timothy Wong

Roger D. Woodruff

Robert Yamada

Tom Yang

Qi Tong Yu

Jack Yu

John Zweifler

**Secondary faculty**

Wayne Dysinger

Linda Ferry

Mina Rakoski

Randy Stinnett

Mitsuhiko Tsukimoto



# Gynecology and Obstetrics

The Department of Gynecology and Obstetrics provides 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 continuing medical education reaching through and beyond the residency years.
3. Provide faculty members, who function as role models for the students and residents.

## Chair

Kevin Balli

## Primary faculty

Sanaz Amini

Kristen Anderson

Kevin C. Balli

Gihan Bareh

Stewart Barlow

Ashley Beem

James Betoni

Barry S. Block

Hayley Bottino

Marissa Caballes

Irena Cabrera

Emerald Caruso

Sum C. Cheung

Lenorre Clarke

Steven Crawford

Mark Crider

David Doucette

Dale Drollinger

Thinh Duong

Tiare Evans

Stephanie Fegale

Heather Figueroa

Juliana Fuller

Ciprian Gheorghe

Rebecca Gonzalez

Shravya Govindappagari

Jeffrey S. Hardesty

Elaine E. Hart

Bryan Hill

Linda Hong

Negar Hosseinfar

Beverly K. Hudson

Yevgeniya Ioffe

John Jacobson

Chasity Jennings-Nunez

Ronald B. Johnson

Lisa A. Kairis

Melissa M. Kidder

Juthamas Kositsawat

Kathleen M. Lau

Peter K. Y. Leung

Man Li

Danielle Sawyer Macknet

Courtney Martin

Danielle M. Mason

William McCullough

Nathalie McKenzie

Lynn McLean

Hana Mikdachi

Mazdak Momeni

Laurel Munson

Meghan Murphy

Danae Netteburg

Bryan Oshiro

Christina Panton

Bo Park

William C. Patton

Crystal Pruitt

Leroy Reese

Christia Del Rosario

Ivan Rybkin

Elmer Sakala

Andrea Salcedo

Herminia Salvador

Zachary Schwartz

Kathryn Shaw

John Shie

Sam Siddighi

Robert J. Wagner, Jr.

Sarah Smithson

E. Laurence Spencer-Smith

Moselle Stark

Steven Vasilev

Darrell Vaughan

Canty Wang

Kim Warner

Ai-Mae Watkins

Cinna Wohlmuth

Ruofan Yao

Jane Yun

### **Secondary faculty**

Arlin Blood

Charles Ducsay

Eugenia Mata-Greenwood

Julia Unternaehrer

Steven M. Yellon

## **Medical Education**

### **Chair**

Tamara Thomas

### **Primary faculty**

Donna Carlson

Jessica ChenFeng

Scarlet Martinez

Bob Mason

Diana Mason

Khiet Ngo

Robert Orr

Martie Parsley

Denise Souder

Rebekah Bartos Specht

Nancy J. Heine

Barbara A. Hernandez

Kathy A. Herzberger

Loretta B. Johns

Christiane Schubert

### **Secondary faculty**

Molly Best

Bradley A. Cole

Lynda Daniel-Underwood

Daniel W. Giang

Lawrence K. Loo

Allison Ong

Ellen Reibling

Daniel Rogstad

Tamara M. Shankel

Tamara L. Thomas

## **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 mission of Loma Linda University and Loma Linda University Health.

### **Vision**

- The Department of Medicine seeks to become a greater regional clinical resource.
- The Department of Medicine seeks to foster a spirit of inquiry, expressed in research and teaching. The faculty advances clinical practice and understanding.

### **Themes**

- Renewal.
- Growth.
- Teamwork.

### **Chair**

Douglas R. Hegstad

**Executive vice chair**

H. Bryant Nguyen

**Vice chairs**

Philip Gold

Anthony Hilliard

Navin Jaipaul

Daniel Kim

Lawrence Loo

H. Bryant Nguyen

Lauren Tan

**Associate chairs**

T. Michael Kashner

James Larsen

Sonny Lee

Leah Tutud-Hans

Andrew Wright

**Division of Cardiology**

Anthony Hilliard, Head

**Division of Endocrinology**

Kevin Codorniz, Head

**Division of Gastroenterology and Nutrition**

Michael L. Volk, Head

**Division of Hematology and Oncology**

Mark E. Reeves, Interim Head

**Division of Hospitalist Medicine**

Michael Matus, Head

**Division of Infectious Diseases**

Jennifer Veltman, Head

**Division of Nephrology**

Amir Abdipour, Head

**Division of Pulmonary & Critical Care**

H. Bryant Nguyen, Head

**Division of Regenerative Medicine**

David J. Baylink, Head

**Division of Rheumatology and Immunology**

Karina D. Torralba, Head

**Program director, Residency Program**

Sonny C. Lee

**Primary faculty**

Amir Abdipour

Toufic Abdo

Arin Aboulian

Dmitry Abramov

Islam Abudayyeh

Endre Agoston

Kwame Agyeman

Zebayel Akele

Mojtaba Akhtari

Mohammed Akram

Anas Alani

Syed Ali

Hector Almanzar-Ramos

Hayder Alzubaidi

M. Reza Amini

Deborah Anghesom-Negusse

James Anholm

Pavan Kumar Annamaraju

Patricia Applegate

Timothy Arakawa

Jonathan Arcobello

Yona Ardiles

Vega Arturo

Mihran Ask

Marian Assal

Syed Athar

Lydia Aye

Mansoor Azim

Catherine Bacheller

Husek Baek

Sanjoy Banerjee

Ramesh C. Bansal

Richard Bardin

Juan Barrio

Basiem Barsoum

Frances Batin

David J. Baylink

Diane Berriman

Daniel Betat

Aditya Bharadwaj	Jason T. Cheng
Rahul Bhardwaj	Jeremiah Cheng
Edward Blews	Doris Chih
Cesar Bonilla	Derek Chinn
Reiner Bonnet	Morteza Chitsazan
Kimberly Borden	David Choe
Joel Brothers	Nicole Choi
Evert Bruckner	Steven Chong
Kaveh Brumand	David Chooljian
Tamara Burks	Ara A. Chrissian
John Byrne	Sophie Chwa
Marven Gerel Cabling	Kevin A. Codorniz
Cindy Cai	Keith Colburn
Constanza Burciaga Calderoni	David Condon
Alejandro Calvo	Tahmeed A. Contractor
Robert Cambridge	Kathia Cordero-Caban
Huynh Cao	Adrian N. Cotton
Yuan Cao	Alfred C. Cottrell
Matthew Cappiello	James J. Couperus
Kristin Carr	Debra Craig
Ethelred Carter	Chitra Damodaran
Yas Casey	Nagamani Dandamudi
Daniel Castro	Patricia P. Dang
Bobby Chan	Nasim Daoud
Jayaram Chandrasekar	Christopher Daum
Madalitso Chandu	Lino DeGuzman
Sandy Chang	Rahel Demisse
Suzanne Chang	Peter Demuth
Daniel Chao	Angela Do
Zeno Charles-Marcel	Hieu Duc Do
Kendrick Che	Paige Dobalian
Gregory Cheek	Loomee Doo
Chien-Shing Chen	Christina Downey
Lynette Chen	Kelly Downey
Shaw Chen	Karen Echeverria-Beltran
Thomas Chen	Bouchra Edderkaoui

Harvey Elder	Stephanie Gondra-Sanabria
Marvin L. Elias	Dwayne Gordon
Parastu Emrani	Alan Gorenberg
Amanda Etheridge	Prashanth Gowda
Dwight Evans	Nandini Gowda
George Everett	Aric Gregson
John Faraci	Michaela Gruzensky
David Farchadi	Tricia Guadiz
Ramiz Fargo	Richelle Guerrero-Wooley
Maham Farshidpour	Nancy Gupta
Ronald Fernando	Hassan Haddadin
Adam Fershko	Harvey Hahn
Anthony Firek	Susan Hall
Franz Fisher	Saba Hamiduzzaman
Olha Fomenko	Muhammad Hammami
Alexander Friedman	Steven Hardin
Gerald Friedman	Jonathan Harper
Helmuth Fritz	Jevede Harris
Geir Frivold	Abdalhamid Al Harsh
Enrica Fung	Muhammad Hasan
Brian Furukawa	Mariam Hazem
Joe Gamboa	Amy C. Hayton
Lakshmi Ganesan	Bruce Hayton
Vinisha Garg	Davi Hecht
Deepak Garg	Douglas R. Hegstad
Jalaj Garg	Giv Heidari-Bateni
Roger Garrison	Danielle Henkel
Frank Gavini	Steven Henley
Alma Gerona	Jan Herrman
Bevan A. Geslani	Elaine Hguyen
Silvana Giannelli	Anthony A. Hilliard
Lauren Gigliotti	Su Su Hline
Paresh C. Giri	Elliot Ho
Robert Gish	Andrew Ho
J. Benjamin Gleason	Jason Hoff
Timothy Gobble	Victor Hogen



Mehrnaz Hojjati	T. Michael Kashner
Annie Hong	Emmanuel P. Katsaros
Dennie Hong	Anas Kawayeh
Frank D. Howard	Hana Kazbour
Russell Hoxie	Asma Kazi
Vincent Hsu	Waseemuddin Kazi
Chung-Tsen Hsueh	Waseemuddin Kazi
James Huang	Casey Kennedy
Kathie Huang	Chandrasekhar Kesavan
Armando Huaringa	Todd kessler
Enacio Hunt	Keerti Khandekwal
Emad Ibrahim	Talha Khawar
Earl Ilano	Ahmed Kheiwa
Erick Imbertson	John Jae-Woo Kim
Michelle Imperio	Christina Kim
Sergio Infante	Mi Kim
Michael Ing	Andrew Kim
George Isaac	Hyung Kim
Dale M. Isaeff	Joseph Kim
Mohamed Ismail	David Kim
Christian Jackson	Dennis Kim
Talisa Jackson	Daniel Kim
Katherine Jacob	Walter Klein
Alan Jacobson	Shawn Koh
Alexander W. Jahng	Han Koh
Navin Jaipaul	Ja Eun Koo
Charmaine Jamias	Ja Eun Koo
Pairote Jaronwanichkul	Kamal Kotak
Niranjan Jeganathan	Reed Krause
Suchaya Jinamornphongs	Rajagopal Krishnan
Joshua Jordan	Van La
Kenneth R. Jutzy	Dima Lababidi
Tejinder M. Kalra	Rodrigo Do Lago
Ilho Kang	Jeremy Lam
Matthew Kaptein	Howard Lan
Lori Karan	Wilson Lao

Alan Lau	Ravi Mandapati
Kin-Hing William Lau	Stacy Mandras
Andrea Lee	Neel Mann
Sonny Lee	Monoucher Manoucheri
James P. Larsen	Axa I. Martell
Timothy Lee	J. Todd Martell
Brian Lee	Ashley Masih
Stephen Lee	Katherine Mattison
Steve Lee	Michael Matus
Scott Lee	Stephen McDonald
Paul Leonor	James McMillan
Sophia Li	Leonidas Mejia
Reed Liang	Luis Isea Mercado
Nikhil Limaye	Alan Michel
Samuel Limbong	Jonathan Min
Michael Lin	Hamid R. Mirshahidi
Jen-Gu Lin	Saied Mirshahidi
Eugene Liu	Hamid Mirshahidi
Jia-Yia Liu	Aarti Nikki Mittal
Takkin Lo	Subburaman Mohan
Ronald Lo	Ioana Moldovan
Andrew Logan	Pamela Lobo Moreno
Evelyn Lomarda	Dafne Moretta
Wen Long	Ali Motabar
Lawrence K. Loo	Mariyam Moten
Jose Lozano	Seema Mukadam
Jennifer Magalong	Gayathri Nagaraj
Edward Maharam	Raul Nakamatsu
Masood Mahmood	Melin Narayan
Asef Mahmud	Daniel Nash
Kanwaljeet K. Maken	Brandon Nathaniel
Ariel Malamud	Taranjit Natt
Priya Malik	Neil Nedley
Nirav M. Mamdani	Christopher Ng
Ramesh Manchanda	Phat Ngo
Krish Manchandia	H. Bryant Nguyen

Mike C. Nguyen	Nishant Puri
Khoa Nguyen	Lakshmi Puvvula
Hoa Nguyen	Xue Zhong Qin
Douglas Nguyen	Gulnara Rackauskas
Sunil Nowrangi	Murli Raghaven
Ndi Nyah	Samira Rahmanian
Albert Nyanga	Vinutha Rajesh
William Ochoa	Mina Rakoski
Edmond Ohanian	Purushotham Ramaiah
Snorri Olafsson	John Rambharose
Cassandre Oscar	Rungwasee Rattanavich
Ganiyu Oshodi	Venkataramana Reddy
Takahiro Otsuka	Michael Ree
Surya-Rao Pakalapati	Surakshya Regmi
Zahra Pakbaz	Rhodes L. Rigsby
Dennis Palmer	Suzanne Rizkalla
Neha Pandey	Mark Robinson
Olivia Papacostea	Daniel K. Rogstad
Petru Papacostea	Thomas Romano
James M. Pappas	Philip Roos
Purvi Parwani	Giorgio Roveran
Jay Patel	Daren Rudisaile
Mark Patuszynski	Charles Rundle
Daniel Pearce	Vandad Saadat
Luon Peng	Gergette Sacay
Mario Perez	Seyed-Ali Sadjadi
Kimerey Van Perre	Prem Sahasranam
Jon Persichino	Leena Sahay
Anh Tuan Pham	Antoine Sakr
Dan Pham	Huma Samar
Eileen Pham	Vaneet K. Sandhu
Prashant Phatak	Matheni Sathananthan
Donald Portocarrero	David Saunders
Vinoy Prasad	Amy Schill-Depew
Gregory Price	Brian Schwartz
Tiffany Priester	Lyndetta Schwartz

Roger Seheult	Julia Suh
Craig Seheult	Christine Sun
Ahmed Seliem	Made Sutjita
Khaled Selim	Thomas Sweeney
Cynthia Serabyn	Drew Tadiarca
Steve Serrao	Mitali Talsania
Shivang Shah	Daniel Tambunan
Tahseen Shareef	Ellen Tambunan
Mohammad Sharif	Laren D. Tan
Michael Shaw	Shirley Tan
Wei Shen	Xiaolei Tang
Matilda Sheng	Shahriyar Tavakoli
John Shin	Siegmund Teichman
Shant Shirvanian	Samuel Tekeste
John Shrader	Douglas Teller
Richard Shu	Rhonda Tetz
Danish S. Siddiqui	Suman Thapamagar
Raman Sidhar	Mie Mie Thinn
Vasthi Silva	Hok-Ming Thio
Helme Silvet	Nikhil Thiruvengadam
Lusine Simonyants	Gary Thompson
Ajeet Singhvi	Jonathon Thorp
Ambika Sivanandam	Conny Tirtaman-Sie
Wasseem Skef	Bhoodev Tiwari
Lynetta Skoretz	Duc To
Robert Smith	Karina D. Torralba
Pejman Solaimani	Denise Townsend
Hae-Young Song	Joshua Trabin
N. Leonard Specht	Nancy Tran
Malathy Sriskandarajah	Diane Tran
Liset N. Stoletniy	Anita Trikha
Debra Stottlemeyer	H. Tam Troung
Richard Strong	James Y. Tsai
Donna Strong	Leah A. Tuddud-Hans
David Stultz	Michael Ulrich
Prajan Subedi	Anna Leigh Ursales

Thien Van

Jennifer Veltman

Rafael Villicana

Michael L. Volk

Michael Walter

John H. Wang

Destry Washburn

Samiksha Wasnik

Arthur Weinstein

Mark A. Welch

Bruce Weng

Leonard S. Werner

Rachel White

Shammah Williams

Angela Williams

Raymond Y. Wong

John Wong

Sammy Wong

Brian Wong

Jeffrey E. Wonoprabowo

Michael Woo

Andrew Wright

Patrick Wu

Weirong Xing

Yi David Xu

Pamela Yamanishi

Dennis Yang

Minho Yu

Jandark Yuseif

Yasmin Yusufaly

Manila Zaman

Zhiwei Zhang

Yan S. Zhao

Xin Zheng

**Secondary faculty**

Alismail Abdullah

Abigail Benitez

Vince Cacho

Justin Calvert

Carlos A. Casiano

Francis D. W. Chan

Kay Chea

Camille Clarke

Marc J. Debay

Vi Dinh

Philip Edelman

Rosemarie Florian

Gary E. Fraser

Nancy J. Heine

Kathy A. Herzberger

Christopher Jacobson

Sharon Jamie

Selma Khan

Donna Lien

Pushpa Nowrangji

Sunitha Nune

Jeffrey Olson

David Puder

Mark Reeves

Joan Sabate

Lawrence Sandberg

Tamara M. Shankel

Rebekah Bartos Specht

Gary R. Stier

Sigve K. Tonstad

Chad J. Vercio

Chi Viet

Andrew Wai

Alan Wei

Sean M. Wilson

Timothy Wong



**Emeritus**

David Bland  
 Ingrid Bloomquist  
 Charles Brinegar  
 Stanley Condon  
 Glenn Foster  
 Philip Gold  
 Walter Graf  
 George Grames  
 Terri Granillo  
 Guen David Jang  
 Edwin Krick  
 Irvin Kuhn  
 Francis Lau  
 Paul Levine  
 Terence Lewis  
 Robert Marsa  
 Robert Mitchell  
 J. Lamont Murdoch  
 Sudha Pai  
 Stewart Shankel  
 Robert Soderblom

**Neurology**

The goal of the Department of Neurology is to deliver the highest quality 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**

Travis Losey

**Associate Chair of of Education**

Laura D. Nist

**Associate Chair of Clinical Operations**

Jeffrey Rosenfeld

**Residency and Fellowship Program Director**

Laura D. Nist

**Primary faculty**

Nancy Baker  
 Firas Bannout  
 Krystle Bekalo-Quinlan  
 Jeffrey Bounds  
 Thomas Bravo  
 Esther Byun  
 Charles Casassa  
 Shauna Cheung  
 Bradley A. Cole  
 Dorothee Cole  
 Yujian Guo  
 Brian Cravanas Jr.  
 Khashayar Dashtipour  
 Mohammad Dastjerdi  
 Karen Frei  
 Daniel W. Giang  
 James Guth  
 David Ko  
 Ruby Koshy  
 Theresa LaBarte  
 Antonio Liu  
 Travis Losey  
 Ali Makki  
 Laura D. Nist  
 Jignasa Patel  
 Gordon W, Peterson  
 Kenneth Pugar  
 Bridgett Quinonez  
 Jeffrey Rosenfeld  
 Yilin Shek  
 A. Dean Sherzai  
 Ayesha Sherzai  
 R. Richard Sloop  
 Vincent Truong  
 Bryan E. Tsao

Philip Tseng

Danilo Vitorovic

Jared Yee

Ilya Zolotnik

**Secondary faculty**

Gregory Aaen

Eman Hawy

Sarah Humbert

Jessica Koch

**Emeritus Professor**

Donald Peterson

## Neurosurgery

**Chair**

Warren W. Boling

**Primary faculty**

Achal Achrol

James Ausman

Robyn Banzon

Warren Boling

Liming Bu

Traian Cojocaru

Belinda Delatorre

Kenneth DeLosReyes

Daniel DiLorenzo

Clifford Douglas

Justin Dye

Shahin Etebar

Brian Hanak

Lei Huang

Namath Hussain

Vance Johnson

Wolff Kirsch

Miguel Lopez-Gonzalez

Tanya Minasian

Andrea Moreno

Ying Nie

Ellen Nong

Ravi Patel

Nicole Perez

Ramachandran Promod Pillai

Hayley Pekarcik

Richard Robinson

Venkatraman Sadanand

Nikhil Sahasrabudhe

Anish Sen

Fang Tie

**Secondary faculty**

Olumide Danisa

Paul Jacobson

Walter Johnson

John Zhang

**Research faculty**

Lei Huang

Ying Nie

Konrad Talbot

## Ophthalmology

The Department of Ophthalmology is committed to:

1. Providing an academic environment that will foster an in-depth understanding of the specialty of ophthalmology.
2. Providing education for students, residents, and fellows that prepares them for an academic, community, or mission practice.
3. Encouraging and supporting clinical research.
4. Inspiring students and residents to promote preventive ophthalmology.

**Chair**

Michael E. Rauser

**Vice chair, Academic Affairs**

Kakarla Chalam

**Vice chair, Clinical Affairs**

Jennifer A. Dunbar

**Director**

Kakarla Chalam  
Retina Fellowship

Kakarla Chalam  
Retina Service

Fatema Esmail  
Pediatric Ophthalmology Service

Howard Guan  
Medical Student Education

Frank Hwang  
Cornea Fellowship

Frank Hwang  
Cornea External Disease & Refractive Surgery Service

Jeffrey Ing  
Global Eye Care

**Program director**  
Samantha Perea  
Residency Program

**Association program director**  
Leila Khazaeni  
Residency Program

**Primary faculty**  
John C. Affeldt

Kinza Ahmad

Sandra Akamine-Davidson

Meaghan Balli

Dianne Barrett

Pamela Bekendam

Peter Bekendam

Josef Bille

Larry Bowes

John Carlson

Kakarla Chalam

Clement Chan

Eric Chin

David Choi

Reema Chokshi

Paul Chung

Jennifer Dunbar

Nathan Elledge

Moses Enghelberg

Fatema Esmail

Joseph T. Fan

Neil Finnen

David Gano

Howard V. Gimbel

Howard Guan

Eman Hawy

Martha Henao

Kenneth Houchin

Lynn Huang

Gary Huffaker

Jennifer I, Hui

Frank Hwang

Jeffrey Ing

Wayne B. Isaeff

Jaskarn Johl

Kevin Kaplowitz

Lisa Keltner

Leila M. Khazaeni

William H. Kiernan

Samuel Kim

Joseph Kim

Benjamin Kronberg

Xuan Le-Nguyen

Gavin McEwan

Jay Mehta

Todd Mondzelewski

Enoch Nam

Julio Narvaez

Rosalynn H. Nguyen-Stongin

Stephen O'Connell

Abraham Park

Kaitlyn Pearson

Samantha E. Perea

Richard Pesavento

Jonathan Pirnazar

Duna Raoof

Michael E. Rauser

Paul Row

Arvind Saini

Jewel Sandy

Gerald Schultz

Bailey Shen

Mark Sherman

Carl Shibata

David Sierpina

Jodi Smith

Kris Storkersen

Mukesh B. Suthar

Richard R. Tamesis

Sharon Theodore

Donald G. Tohm

Tom Tooma

Gabriel Valerio

Douglas Van Putten

Linda Vargas

Ira Vidor

Craig White

Hilalry Wilson

Timothy Winter

Robert Wresch

Tiffany Yanase

Janie Yoo

Ernest S. Zane

### Secondary faculty

Kelly Keefe

### Research

Balamurali Ambati

Sangheetha Ravi Kumar

Hironori Uehara

Xiaohui Zhang

## Orthopaedic Surgery

The Department of Orthopaedic Surgery provides a lecture series to junior medical students. Series objectives 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 careers in orthopaedic surgery.
6. Stimulate interactive discussion of various orthopaedic conditions.
7. Communicate high-yield orthopaedic board topics for future self-study.

### Chair

Thomas Donaldson

### Assistant Chair

Olumide Danisa

### Division of Hand Surgery

M. Daniel Wongworawat, Head

### Division of Spine Service

Olumide Danisa, Head

### Primary faculty

Kofi Agyeman

Jonathan Allen

Nirav Amin

Duane Anderson

Michael Baldwin

Sean Balkcom

William Bowen

William Bunnell

Thomas Burgdorff

Paul Burton

Jason Chen

John Chrisler

Olumide Danisa

Thomas Donaldson

Peter Elsisy

Joseph Elsisy

Anthony Essilfie

Scott Fischer

Daniel Galat

Vance Gardner

David Gazzaniga

Ronny Ghazal

Phillip Glivar

Hrishikesh Gogineni

Barry Grames

Grigor Grigoryan

Robert Grumet

Jessica Guillen

Todd Guthrie

Zachary Hadley  
 Christopher Hayes  
 Brian Hodges  
 Gail Hopkins  
 Kenneth Jahng  
 Christopher Jobe  
 Andrew Kim  
 David Kruse  
 Connor LaRose  
 Sang Le  
 Christopher LeBrun  
 D. Allen MacKenzie  
 James Matiko  
 Clifford Merkel  
 M. Kenneth Mudge  
 Henry Ndasi  
 Scott Nelson  
 Dylan Nugent  
 Timothy Nunn  
 Daniel Patton  
 Kevin Phan  
 Wesley Phipatanakul  
 Miguel Prietto  
 Carlos Prietto  
 Rebecca Rajfer  
 Barth Riedel  
 Tyler Roberts  
 Ronald Roiz  
 Erik Schnaser  
 Brian Schneiderman  
 Harold Schutte  
 Akash Shah  
 Michael Shepard  
 James Shook  
 John Skubic  
 Jason Solomon

John Steinmann  
 Husan Syed  
 Arthur Thiel  
 Robert Vercio  
 Sarah Walker  
 Barry Watkins  
 Mark Weber  
 Nadine Williams  
 Peter Wilton  
 Andrew Wong  
 M. Daniel Wongworawat  
 Dheeraj Yalamanchili  
 Siamak Yasmeh  
 Tabitha Young  
 Lee Zuckerman

### **Secondary faculty**

Allie Blackburn  
 Wayne Cheng  
 Subburaman Mohan  
 Robin Pueschel

## **Otolaryngology and Head and Neck Surgery**

### **Chair**

Alfred A. Simental

### **Vice chair**

Steve Lee

### **Primary faculty**

Benjamin Bradford  
 Nadia Chan  
 Baishakhi Choudhury  
 Christopher A. Church  
 Luamy Cornejo  
 Brianna Crawley  
 Quy Alan Dao  
 Jodi Datema  
 Sara Devine  
 Wei Dong



Cory Ferguson  
 Pedro A. deAndrade  
 Jenifer Fuller  
 Peter Han  
 Jared C. Inman  
 Timothy Jung  
 Stephanie Kidd  
 Esther Kim  
 Cherine Kim  
 Andrea Kottlowski  
 Priya D. Krishna  
 Garth LeClair  
 Steve C. Lee  
 Marjorie Leek  
 Hongzhe Li  
 Christina Liem  
 Yuan Liu  
 Whitney Mast  
 Lauren Matsumoto  
 Allie Maus  
 Justin McLarty  
 Thomas Murry  
 Khanh Nguyen  
 Tsungju O-Lee  
 Ashley Page  
 Nathaniel Peterson  
 George Petti  
 Alexis Ronney  
 Kristin A. Seiberling  
 Alfred A. Simental, Jr.  
 Charles E. Stewart III  
 Jill Tubbs  
 Jonathan Venezia  
 Paul Walker  
 Helen X. Xu  
 Ronica Yalamanchili

Xiangpeng Yuan

### **Secondary and adjunct faculty**

Kenneth De Los Reyes

Salma Khan

Mia C. Nepomuceno-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. Courses offered by the department provide a bridge to the clinical sciences, spanning the 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 members, graduate students, medical students, and residents.

### **Chair**

Paul C. Herrmann

### **Division of Anatomy**

P. Benigno Nava, Jr., Head

Kerby Oberg, Vice Chair

### **Division of Pathology**

Darryl G. Heustis, Vice Chair

### **Division of Laboratory Medicine**

James Pappas, Head

### **Division of Pediatric Pathology**

Craig W. Zuppan, Head

### **Pathology primary faculty**

Fouad Abdelhalim

Faramarz Azizi

J. Bruce Backwith

Jeffrey D. Cao

Cody Carter

Shobha L. Castelino-Prabhu

Resa L. Chase

Evelyn B. Choo

Camilla J. Cobb

Jeremy K. Deisch

Laura Denham

Meghan Dorrell

Joy Fridey  
 Cheryl Germain  
 Ronaldo Gnass  
 Chelsea Heimbaugh  
 Paul C. Herrmann  
 Darryl G. Heustis  
 Brian Hutchins  
 Gokul Kandala  
 Kelly S. Keefe  
 Justin C. Kerstetter  
 Ralph A. Korpman  
 Yan Liu  
 Roland E. Lonser  
 Yamil Lopez  
 Shino Magaki  
 Nolan Maloney  
 Mia Nepomuceno-Perez  
 Ravi Raghavan  
 Anwar Raza  
 Bonnie Rohweller  
 Heather L. Rojas  
 Adriana Rosato  
 Lawrence Sandberg  
 G. William Saukel  
 Frank Sheridan  
 Wesley T. Stevens  
 Kevin S. Thompson  
 Jun Wang  
 Bing Wang  
 Pamela J. Wat  
 Michael Weitzel  
 David Yau  
 Craig W. Zuppan

#### **Pathology secondary and adjunct faculty**

Lee Berk  
 Robin Clark

Ashley Eisensohn  
 Anupama Grandhi  
 Edward Rowsell  
 Konrad Talbot

#### **Anatomy primary faculty**

Faramarz Azizi  
 John Banks  
 Denise L. Bellinger  
 Molly Best  
 Salvador Soriano Castell  
 Bertha C. Escobar-Poni  
 Ronaldo Gnass  
 Mary K. Kearns-Jonker  
 Zhongrong Luo  
 Pedro B. Nava  
 Kerby C. Oberg  
 Darnell Peterson  
 Bethania Siviero  
 Manisha Sutariya  
 Irene Thung  
 Kenneth R. Wright

#### **Anatomy Secondary Faculty**

Olivia Francis-Boyle

#### **Emeritus**

Mildred Stilson  
 Pathology

## **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**

Francis Chan

#### **Critical Care Division**

Cynthia Tinsley, Head

#### **Division of Adolescent Medicine and Child Abuse**

Amy D. Young-Snodgrass, Head

#### **Division of Pediatric Allergy and Immunology**

Jimmy Eguchi, Head

**Division of Pediatric Cardiology**

Michael A. Kuhn, Head

**Division of Pediatric Endocrinology**

Eba Hathout, Head

**Division of Pediatric Gastroenterology**

Kalyan Paraschette, Head

**Division of Pediatric Hematology/Oncology**

Albert Kheradpour, Head

**Division of Pediatric Infectious Disease**

William Kennedy, Head

**Division of Pediatric Neonatology**

Elba E. Simon-Fayard, Head

**Division of Pediatric Nephrology**

Shobha Sahney, Head

**Division of Pediatric Neurology**

David Michelson, Head

**Division of Pediatric Pulmonary**

Jimmy Eguchi, Head

**Division of General Pediatrics**

Alexandra Clark, Head

**Primary faculty**

Gregory Aaen

Shamel Abd-Allah

Marla Abrolat

Hilal Abu-Zahra

Vikash Agrawal

Borhaan Ahmad

Brittany Alston

Maha Amr

Michael Andaya

Marquelle Anderson

Katherine Angeles

Barbara Ariue

Stephen Ashwall

Huy Au

Michael Avesar

Muhammad Baig

Gabrielle Balan

Anamika Banerji

Babu Bangaru

James Bartley

Suraj Batish

Marti Baum

Diane Broome

Bradley Cacho

Vince Patrick Cacho

Daniel Calaguas

Michael Cao

Bronwyn Carlson

Samantha Carroll

Cameo Carter

Samuel Catalon

Francis Chan

Albert Chan

Jonathan Chan

Harsha Chandnani

Kay Chea

Priscilla Chee

Timothy Chinnock

Richard Chinnock

Fu-Sheng Chou

Albert Chow

Alexandra Clark

Robin Clark

Cori Clumpner

Ekuia Cobbina

Mallory Cohen

Chelsea Collins

Shani Cunningham

Drew Cutler

Althea Daniel

Allyssa Dann

Rachel Davidge

Shirin DeGiorgio

Douglas Deming

Amanpreet Dulai

Melissa Egge	Laura Jacobson
Jimmy Eguchi	Akshat Jain
Janeth Ejike	Janessa James
Yvonne Fanous	Kelly Jeu
Shadi Gohar Farzin	Upinder Jodhka
Elba Fayard-Simon	Daniel Joe
Aprille Dawn Febre	Biswas Joshi
Nancy Fernando	Gregory Jutzy
Matthew Fong	Tanvi Kamdar
Erik Frandsen	Sebiha Kanchwala
Mary-Catherin Randall Freier	William Kennedy
Gamil Fteeh	Sofia Khera
Laura Funkhouser	Albert Kheradpour
Maria Garberoglio	Soo Kim
Rachel Gardiner	Wonha Kim
Donna Goff	Young-Min Kim
June-Anne Gold	Nicole Kraus
Mitchell Goldstein	Vidhya Krishnamurthy
Brent Gordon	Michael Kuhn
Tracy Gould	Daniel Lamb
Morgan Green	Miles Landis
Katherine Gregersen	Ranae Larsen
Ben Guedes	Adrian Lavery
Euntaik Ha	Perpetua Lawas-Alejo
William Hamra	Ahn Vu Le
Stephen Hamra	Leanna Lee
Benjamin Harding	Vallent Lee
Eba Hathout	Fatma Levent
Allison Hensley	Gail Levine
Christine Hermann	Kathleen Lima
Phuong Thao Hoang	Taiming Liu
Michelle Hong	Taryn Liu
Andrew Hopper	Jennifer Lo
Jaspal Hothi	Shaina Lodhi
Amanda Hyatt	Catherine Loe
Alexandra Iacob	Joshua Loeb

Michelle Loh	Sena Cantas Orsdemir
Merrick Lopez	Kimberly Otsuka
John Mace	Kalyan Parashette
Gilbert Martin	Shaun Park
Juan Martinez	Hee Chan Park
Lily Martorell-Bendezu	Shaun Park
Derek McCalla	Anita Patel
Chalmer McClure	Wendy De La Pena
Stacy McConkey	Ricardo Peverini
Jessica Medina	Patrick Phelan
Khyati Mehta	Raylene Phillips
T. Allen Merritt	Pilar Pichon
David Michelson	Robert Piecuch
Alexander Min	Jamie Pivonka-Jones
Farrukh Mirza	Nicole Pope
Hussain Mirza	Latika Puri
Houchang Modanlou	Sonea Qureshi
Ryan Mooradian	Nivedita Rajakumar
Anita Moorjani	Subhadra Ramanathan
Anthony Moretti	Angel Luciano Ramirez
Neda Mulla	Ravindra Rao
Guatam Nagendra	Veronica Regueiro
Stephen Nageotte	Lorraine Reversion
Lanelle Nakamura	Alice Rhee
Grace Nam	Sharon Riesen
Cinda Nauretz	Luis Rivera
Larry Ngo	Sarah Roddy
Joy Nichols	Raul Rodriguez
Pushpa Nowrangi	Sharis Rostamian
Sunitha Nune	Shobha Sahney
Oluwafisay Nwachukwu	Delphin Sallowm
Desiree Nycholat	Cheryl Sanchez-Kazi
Clark Ochikubo	Manojkumar Shah
Grace Oei	Jui Shah
Jeffrey Olson	Tamara Shankel
Lauren Orona	Rita Sheth

Sinora Joshi Shrestha  
Stanford Shu  
Melissa Siccama  
Ciondy Sihotang  
Yoginder Singh  
Jonathan Smits  
Maulin Soneji  
Andrew Song  
Shrinkhala Srivastava  
Samantha Stephenson  
Daved van Stralen  
Tiffany Tamse  
Catherine Tan  
Gordon Tan  
John Tan  
Richard Tang-Wai  
John Thanasukarn  
Sophie Thibault  
Wilson Thomas  
Linh Tieu  
Cynthia Tinsley  
Larry Tinsley  
Jade Tran  
Diana Trupp  
Janice Tsai  
Eric Tsay  
Mitsuhiko Tsukimoto  
Christin Tu  
Melissa Tyree  
Herbert Vasquez  
Heather Elizondo Vega  
Chad Vercio  
Diana Villarreal  
Sonia Voleti  
Farha Vora  
Andrew Wai

Hua Wang  
Xiao Ben Wang  
Alan Wei  
Regina Williams  
Sadie Williams  
Emily Wong  
Valarie Wong  
Linda Yang  
Andrew Yoo  
Amy Young-Snodgrass  
Ashley Zerr  
Quan Zhao  
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Patricia Acharya  
  
Joanne E. Baerg  
Lance E. Brown  
Constanza Burciaga Calderoni  
David A. Chamberlin  
Tricia Gaudiz  
Steven Green  
Faraz Khan  
Shannon Kirk  
Heather Kuntz  
Sonny Lee  
Carlo Manalo  
Ravi Mandapati  
Ariane Marie-Mitchell  
Donald C. Moores  
Arti Nair  
Andrei Radulescu  
Anees Y. Razzouk  
Jaspreet Singh  
Drew Tadiarca  
Tamara L. Thomas  
Christopher G. Wilson  
Timothy Young



**Emeritus**

B. Lyn Behrens

Chul Cha

## 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. They have as a central basis the idea 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. Psycho-social-spiritual aspects of rehabilitation complete the whole-person focus, thus providing an opportunity for faculty members and students to observe and experience patient care, while meeting the goals and objectives of the School of Medicine.

**Chair**

Justin T. Hata

**Vice chair**

Vacant

**Primary faculty**

Krystle Barrera

Murray Brandstater

Beryl Bull

Brian Chau

Davin Chu

Anne Cipta

Travis Fogel

Michael J. Gilewski

Justin Hata

Sarah Humbert

Giang-Tuyet Lam

Samuel Lee

Esther Lee

Micky Lui

Douglas Mack

Jeffrey Murray

Eugene Pak

Chakradhar Penta

Scott R. Strum

Phillip Ta

Christopher Tarver

Duc Tran

Victoria Tran

Shawn Uraine

Tina Wang

Michael Wettstein

Thaddeus Wilson

**Secondary Faculty**

David Creamer

Thomas Edell

Gordon Peterson

**Emeritus**

Murray Brandstater

## Plastic and Reconstructive Surgery

**Chair**

Subhas C Gupta

**Primary faculty**

Ghada Afifi

Dennis Anderson

Troy Andreasen

Della Bennett

Walter Chang

Gyu Chin

James Chui

Andrew Cohen

Norberto Collins

Brian Eichenberg

Rachel Ford

Allen Gabriel

Daron Geldwert

Subhas C. Gupta

Madeleine Gust

Michael Hakimi

Robert Hardesty

Asra Hashmi

Cherrie Heinrich

Michael E. Hill

Andrew Huang

Andrew Huang

Hahns Y. Kim

Ravi Kiran

Darren Leong

Mark C. Martin

G. Patrick Maxwell

Duncan Miles

Daniel Mills

Anil Punjabi

Melissa Radecki

Andrea Ray

Charlotte Resch

Frank Rogers

Gordon Sasaki

Brinda Thimmappa

Stephen West

## 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 other Loma Linda University programs in health promotion and epidemiology research projects—the most prominent being the Adventist Health Study. Preventive medicine faculty members direct clinical services at the Center for Health Promotion, the Occupational Medicine Center, the Social Action Community (SAC) Health System clinics as well as five separate Inland Empire university health services. A diverse faculty focuses 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 other regional and community entities.

### Chair

April Wilson

### Primary faculty

Rachel Annam

Jonathan Avalos

Peter Bastian

Kristine Burke

Leslie Cadet

Jennifer Chevinsky

Bonnie I. Chi-Lum

Ralph Clark

Camille Clarke

Sylvia Cramer

T. Allan Darnell

Adley Dason

Marc Debay

Hans Diehl

Wayne Dysinger

Philip Edelman

Linda Ferry

Rosemarie Florian

Dominique Fradin-Read

Eric Frykman

Andrew Guo

George Guthrie

Kenneth W. Hart

Ronald Hattis

Michael Hogue

Ionella Hubbard

Leah Humann

Maud Joachim-Celestin

Sara Johnson

Haitham Juma

Cameron Kaiser

Pejman Katiraei

John Kelly

Datis Kharrazian

Jenny Lee

Crystal Mata

Ariane Marie-Mitchell

Joel Mundall

Claire Nelson

Eric Ngo

Michael J. Orlich

Alma M. Palisoc

Bernyce Peplowski

Warren R. Peters

Douglas Plata

Ernest Prochazka

Amy Reese

Cesar Reis

Akbar Sharip

Karen Studer

Aristo Vojdani

Sylvie Wellhausen

April Wilson

**Secondary and adjunct faculty**

Mihran H. Ask

James Crouse

N. Margarete Ezinwa

Patricia Flynn

Gary Fraser

Herbert Giebel

Richard H. Hart

Sharon Jamie

Lori Karan

Wonha Kim

Jason Lohr

Fayth Miles

Susan B. Montgomery

Olivia Moses

Tricia Y. Penniecook

Brenda Rea

Kevin Shannon

Serena Tonstad

Loretta Joy Wilber

Wesley S. Youngberg

**Emeritus**

P. William Dysinger

# 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. It also deals with a holistic concept of behavior and its spiritual components.

The third-year psychiatry clerkship is integrated with neurology and is delivered over eight weeks to include general psychiatry and addiction medicine. 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 members 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**

Newton Agrawal

Willy Anand

Donald Anderson

Ara Anspikian

Mark Ard

Tagbo Arene

Basil Bernstein

Venkatesh Bhat

David Block

Stephanie Bolton

William Britt

Kelsey Bullock

Chadwick Burgdorff

Claudia Carmona

Clarence Carnahan

Lucia Cheng

George Christison

Kirk Chung

Antonia Ciofica

Hanumantharao Damerla  
Lorie DeCarvalho  
Andrew DiSavino  
Melinda Douangratdy  
Otto Dueno  
Ramila Duwal  
Carlos Fayard  
Khairallah Fayazi  
Mendel Feldsher  
Sofia Firoz  
Calvin Flowers  
Christopher Foglesong  
Ron Foo  
Teresa Frausto  
Nerissa Galang-Feather  
Steven Galarza  
Monika Gierz  
Leia Gill  
Sandeep Gill  
Aaron Gilmore  
Juan Gonzalez  
Bryan Goudelock  
Cheryl Green  
Kevin Guber  
Carla Hammond  
Hoda Hannallah  
Stephen Harnish  
Zachary Herzfeldt  
Douglas Holl  
Timothy Hougen  
Jerry Hoyle  
Jim Hwang  
Risa Ishino  
Brian Jackson  
Kristina Jahng  
Cameron Johnson

Erik Johnson  
Allie Kaigle  
Jennifer Kawase  
Kevin Kinback  
Lauren Kissner  
Maher Kozman  
Serafin Lalas  
Henry Lamberton  
Timothy Lee  
Amie Lemos-Miller  
Valerie Leong  
Peter Leong  
John Lii  
Derek Ly  
Jessie Mabaquiao  
Merle Madera  
Jeffrey Mar  
J. Stephen Maurer  
William McGhee  
Marissa Mejia  
Athanasios Mihos  
Jennifer Minami  
Sadiq Mirza  
Jeffrey Moffat  
Desiree Montes  
Wadsworth Murad  
William Murdoch  
Jared Nelson  
Albert Nguyen  
Thuy-Huynh Nguyen  
Keith Noonan  
David Orea  
Carolina Osorio  
David Osuna  
Rishi Parikh  
Daksha Patel

Melissa Pereau  
 Erik Petersen  
 Lisa Phillips  
 Gabriela Prieto  
 George Proctor  
 David Puder  
 Cesar-Michael Rafano  
 Moshin Rajani  
 Shannon Remick  
 John Riesenman  
 Pharez Rolle  
 William Roth  
 Neeta Saheba  
 Jorge Rodriguez Sanchez  
 Christopher Schreur  
 Jamie Snyder  
 Randy Stinnett  
 Katia Stoletniy  
 Cory Suard  
 John Tarr  
 Jason Thomas  
 Monica Tone  
 Darcy Trenkle  
 Arifa Uddin  
 Khushro Unwalla  
 Melissa Urquhart  
 Alison Vargas  
 E. Ray Verde  
 Roger Wenger  
 Dawn White  
 Bryan Wick  
 Donnell Wigfall  
 Brent Willard  
 Tai Yoo  
 Jian Zhang

### Secondary faculty

Bosun Chung  
 Ralph Clark  
 Richelin Dye  
 Adonis Sfera  
 Mark Welch

### Emeritus

George Harding  
 Mark Haviland

## 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 which was pioneered by the department. This care rests upon the foundation of basic, translational, and clinical research which, when combined with patient education, ensures 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

### Primary faculty

Antonella Bertucci  
 Eleanor Blakely  
 David A. Bush  
 Dongrak Choi  
 Abiel Ghebremedhin  
 B. Rodney Jabola  
 Joseph I. Kang  
 Lilia N. Loredo  
 Grant McAuley  
 Ivan C. Namihas, Jr.  
 Daniel Miller  
 Prashanth Nookala  
 Baldev Patyal  
 William Preston  
 Jerry D. Slater  
 Jason Slater  
 Marcelo Vazquez

Ning Wang

Andrew Wroe

Gary Y. Yang

### **Secondary and adjunct faculty**

Xiao Mao

Gregory Nelson

Michael Pecaut

Richard Sun

Roman Vlkolinsky

Nathan Wall

## **Radiology**

The purpose of the Department of Radiology is 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, physicists, medical students, postdoctoral fellows, radiology residents, and fellows.
3. Research support through laboratory and clinical facilities.
4. Support for the local, national, and international interests and programs of Loma Linda University.

### **Interim chair**

J. Paul Jacobson

### **Division of General Diagnostic Radiology**

Won-Chul Bae, Chief

Women's Imaging Section

Allie Blackburn, Chief

Musculoskeletal Radiology Section

Kendra Fisher, Co-Chief

Chest and Cardiac Radiology Section

Thomas Kelly, Chief

Abdominal Radiology Section

Shannon R. Kirk, Chief

Chest and Cardiac Radiology Section

Glenn Rouse, Chief

Diagnostic Ultrasound Section

Michael A. Stanton, Director

### **Division of Interventional Radiology**

Jason Smith, Head

### **Division of Magnetic Resonance Imaging**

David B. Hinshaw, Head

### **Division of Neuroradiology**

Adina F. Achiriloaie, Acting director

J. Paul Jacobson, Chief

Interventional Neuroradiology Section

Paggie P.C. Kim, Chief

Pediatric Neuroradiology Section

N. Dan Wycliffe, Chief

Head & Neck Radiology Section

### **Division of Nuclear Radiology**

Gerald A. Kirk, Head

### **Division of Pediatric Radiology**

Yen-Ying Wu, Director

### **Director of Medical Student Education**

Sheri Harder

### **Primary faculty**

Patricia Acharya

Adina Achiriloaie

Amanda Aguilera

Frankis Almaguel

Won-Chul Bae

Juan Baez

Samuel Barnes

Brenda Bartnik-Olson

Christopher Bent

Phiroze Billimoria

Allie K. Blackburn

Jennifer Burns-Benggon

Jerome Burstein

Arthur Chang

Ronnie Chen

Alexander J. Chien

Kenneth Chon

Shilpy Chowdhury

Kyle Cooper

Cherie A. Cora

Sonia G. Dhaliwal

Jedediah Dixon

Kaci Dudley

Richard Dunbar

John Feller

Kendra L. Fisher



Scott Fujimoto

Geoffrey Gardiner

David W. Gentry

Matthew Grube

E. Mark Haacke

Joannie Murad Haid

Sheri L. Harder

Anton Hasso

Alex Hi

Steven Holness

Barbara Holshouser

Steve Hom

Amber Hsiao

Daniel Jin

David B. Hinshaw, Jr.

J. Paul Jacobson

Mohammed Kassir

Thomas J. Kelly

Daniel Kido

Monika Kief-Garcia

Paggie Kim

Susan Kim

Hannah Kim

Erica Kinne

Gerald A. Kirk

Shannon R. Kirk

Gene Kitamura

Eric Liu

David Liu

Lisa Mahoney

Irwin Maier

Andrew Malit

Carlo Manalo

Michael Manzano

Jeanine McNeill

Milon J. H. Miller

Jon Miller

Mark Nashed

Christopher Nguyen

Rajeev Nowrangi

Eric Peters

Peter H. Pham

Son Phan

Moussa Raiszadeh

Samuel Randolph

Samuel Randolph

Sherman Rhee

Katherine Rhee

Glenn A. Rouse

Hans P. Saaty

Amita Sapra

Fataneh Sarlati

James Shi

Fred Shu

Jaspreet Singh

Jason C. Smith

Douglas Smith

Michael Staton

Zunbar Syed

Nelly Tan

Thu Tang

Kyrollos Tawfik

Darshit Thakrar

Roger Tomihama

Karen A. Tong

Richard J. Tully

Yen-Ying Wu

N. Dan Wycliffe

Alex Yi

Xueren Zhao

**Secondary faculty**

Udochukwu Oyoyo

Huma Samar

### **Adjunct faculty**

Samuel Achilefu

E. Mark Haacke

Son Phan

James Slater

Smyrna Tuburan

### **Emeritus faculty**

Phiroze Billimoria

Jerome Burstein

Richard Dunbar

Geoffrey Gardiner

Barbara Holshouser

Douglas Smith

## **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**

Sharon S Lum

### **Vice chair**

Jorge Rivera

Naveenraj Solomon

### **Division of Acute Care Surgery**

Kaushik Mukherjee, Head

### **Division of Colorectal Surgery**

Mark Reeves, Head

### **Division of General Surgery**

Sigrid Burruss, Director

Marcos Michelotti, Head

### **Division of Pediatric Surgery**

Donald C. Moores, Head

### **Division of Surgical Oncology**

Carlos Garberoglio

Afshin Molkara, Vice chair

### **Division of Transplant Surgery**

Sharon Lum, Vice chair

Michael de Vera, Head

### **Trauma Division**

Fabrizio Luca, Head

### **Division of Vascular Surgery**

Ahmed Abu-Zamzam

### **Primary faculty**

Ahmed Abou-Zamzam

Jose Acosta

John Agapian

Allison Aka

Allison Aka

Sama Akanyun

Matthew Albert

Paul Albini

Timothy Allison-Aipa

Yousef Amaar

Nzanzu Anatole

Jason Axt

Joanne Baerg

Carlos Balarezo

Abigail Benitez

Aleksander Bernshteyn

Christian Bianchi

Scott Bloom

Charles Bratton

Megan Brenner

James Brown

Sigrid Burruss

Richard D. Catalano

Kristen Chaves

Andrew Chew

Jeffrey Chiu

Lori Chow

Megan Cochran-Yu

Raul Coimbra

Waldo Concepcion

Douglas Cook

William Copeland	Arputharaj Kore
Alexandros Coutsoumpos	Wanda Lam
Cheryl Brown Cowles	Kenneth Lawson
Justin Daggett	Alicia Lay
Marcus Darrabie	Beatriz Leong
Joseph Davis	Arega Leta
Stephanie Downing	Wei-Te Li
Jacques Ebhele	Fabrizio Luca
Sara Edwards	H. Daniel Ludi
Deborah Eisenhut	Sharon Lum
Clifford Eke	Xian Luo-Owen
William Eubanks	Kristyn Mannoia
Shady Foad	Heath Many
Sebastian de la Fuente	Ata Mazaheri
Daniel Galante	Rodney McKeever
Michael Ganey	Pratik Mehta
Carlos Garberoglio	Marcos Michelotti
Norbert Garcia-Henriquez	Lester Mohr
Nephtali Gomez	David Caba Molina
Britney Grayson	Afshin Molkara
David Halter	John Monson
Lawrence Harmes	Donald Moores
Ryan Hayton	Llesenia Mora
Lawrence Heiskell	Gamal Mostafa
Jeffrey Hsu	Kaushik Mukherjee
Sunggeun Samuel Im	Allen Murga
Victor Joe	Elizabeth Mwachiro
Samir Johna	Michael Mwachiro
Aarthy Kannappan	Jukes Namm
Kaggya Moses Kasumba	George Ngock
Kevork Kazanjian	Minh-Tri Nguyen
Simon Keushkerian	Andre Nguyen
Faraz Khan	Andrew Nguyen
Faisal Khan	Thomas O'Callaghan
Sharon Kiang	Zachary O'Connor
Thersia Knapik	Jennifer O'Connor

Michael O'Leary  
Christopher Olukoga  
Philip Ooko  
Bruce Orkin  
Sheela Patel  
Robert Pereyra-Suarez  
Minh-Tri Pham  
Tram Phan  
Sommer Phillips  
Alexis Plasencia  
Jeffrey Quigley  
Andrei Radulescu  
Mark Reeves  
Reyna Gonzalez  
Mayonne Renner  
Jorge Rivera  
Antonio Robles  
Shana Rogers  
Martin Rosenthal  
Nathan Ross  
Gisella Sandy  
Yakoubou Sanoussi  
Keith Scharf  
Keith Scharf  
Catherine Schell  
Katherine Shafer  
Brent Sherwin  
James Simpson  
Mark Snell  
Naveenraj Solomon  
Daniel Srikureja  
Noah Swann  
Lourdes Swentek  
Maryam Bitabrizi  
Arnold Tabuenca  
Derya Tagge

Matthew Tan  
Majid Tayyarah  
Theodore Teruya  
Keir Thelander  
William Thompson  
Stephen Thorp  
David Vannix  
Jens Vaylann  
Enrique Vega  
Michael E. de Vera  
Edward P. Tagge  
Noel Victor  
Halley Vora  
Philip Wai  
On Wang  
Georg Wiese  
Paul Wisniewski  
Alan Wladis  
Jakub Woloszyn  
David Wong  
John Woods  
Esther Wu  
J. Frank Yamanishi  
Robert Yuhan  
Kristine Zmaj  
**Secondary faculty**  
Ihab Dorotta  
Alan Herford  
Walter Johnson  
Padma Uppala  
Nathan Wall  
**Emeritus faculty**  
Lloyd Dayes  
Jerrold Longbeam  
Robert Rowe  
Louis Smith

Edwin E. Vyhmeister

## Urology

### Chair

Herbert C. Ruckle

### Pediatric Urology

David A. Chamberlin

Minh-Hang Chau

### Primary faculty

Dalton Baldwin

Gary Barker

Joshua Belle

David Benjamin

Joshua Chamberlin

Catherine Chen

Victor Ching

Mark Dickinson

Roger Hadley

Mohamma Hajiha

Brian Hu

Cristina Ibarra

Forrest Jellison

Samantha Johnson

Belle, Joshua

Ashok Kar

Edmund Ko

Tekisha Linder

Paul Lui

Kristene Myklak

Viloki Patel

Herbert Ruckle

Michael Sanford

Andrea Staack

Steven Stewart

Robert Torrey

Christopher Tsai

Karen Uyemura

Humberto Villarreal

Janchan Yune

Jami Zelaya

### Adjunct

David Hadley

# SCHOOL OF NURSING

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## Dean's welcome



Welcome to the School of Nursing. The nursing education offered will prepare you for a life of Christian service in the nursing profession. This section of the University CATALOG will introduce you to the programs of the School as well as give you information on academic progression and services available to help you reach your goal.

For more than 115 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 purpose is to provide an environment where you can gain the knowledge, skills, and attitude 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, with God's help, the University's mission "To make man whole."

Elizabeth Bossert, 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 became Loma Linda University in 1961. 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.

### Accreditation

The School of Nursing received initial accreditation by the National League for Nursing (NLN) (61 Broadway, New York, NY 10006) in 1951.

In 2000, initial accreditation was received from the Commission on Collegiate Nursing Education (CCNE). The Bachelor of Science (B.S.) in nursing, Master of Science (M.S.) in nursing, and Doctor of Nursing Practice (D.N.P.) at Loma Linda University School of Nursing are accredited by the CCNE (655 K Street, NW, Suite 750, Washington DC 20001, 202/887-6791). The B.S., M.S. and D.N.P. degree curricula are accredited by the CCNE through 2027. The nurse anesthesia area received initial accreditation from the Council on Accreditation of Nurse Anesthesia Education Programs (COA) in 2011 (222 South Prospect Avenue, Park Ridge, IL 60068-4001) and is currently accredited through 2027. The California Board of Registered Nursing (BRN) (P.O. Box 944210, Sacramento, CA 94244-2100) granted continuing approval in 2019. 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, and Western Institute of Nursing.

## Vision

Transforming lives through nursing education, professional practice, and research.

## Mission

The education of nurses dedicated to professional excellence and compassion in clinical practice, education, and research. Loma Linda University-educated nurses will further the healing and teaching ministry of Jesus Christ through commitment to whole-person care and Christian values.

## Programs of study

The School of Nursing prepares professional nurses to practice with a Christian perspective through the following programs:

1. The baccalaureate degree curriculum—designed to prepare competent, beginning-level professional nurses who are committed to excellence in practice.
2. The master's degree in nursing program—designed to prepare nurses for leadership as nurse educators or nurse administrators.
3. The Doctor of Nursing Practice degree—designed to prepare nurses for leadership as advanced practice registered nurses, clinical nurse

specialists and nurse practitioners, nurse anesthetists, and other advanced nursing roles in the clinical setting.

4. The Doctor of Philosophy degree program—designed to prepare nurse scholars for leadership in education, administration, and research.

## Philosophy

Loma Linda University School of Nursing is founded upon a legacy of global Christian service. We seek to touch lives in the context of a world in need.

Loma Linda University nursing education centers on whole-person care. Our spiritual core and vibrant faith experience are expressed in authentic connections and genuine caring for humanity in all its diversity. Through research and scholarship-informed practice, we aim to promote healing, empowerment, and transformation across the life span in individual lives, families, and communities.

We strive to create an environment in which all learners reach their highest potential, achieve academic excellence, and experience personal and spiritual growth.

We see the development of intellect and character as preparation for lifelong learning and ministry through the nursing profession.

### Primary full-time faculty

Megan Anderson

Angelika Ashburn

Michelle Ballou

Chelsea Bartlett

Corrie Berk

Ashley Black

Nancy Brashear

Joanna Brogdon

Jenna-Marie Crowe

Lydia Curteman

Ellen D'Errico

Lena Dailey

Safiya Daley

Salem Dehom

Tony Dharmaraj

Janet Donnelly

Sabine Dunbar

Laura Gil

Amy Gow

Joseph Hacinas

Luchia Hansen

Lisa Hanson

Erin Heim

Lisa Highton

Gloria Huerta

Valerie Hutaaruk

Vanessa Jones-Oyefeso

Lana McLouth Kanacki

Mattison Lake Kattenhorn

Sara Larsen

Claire Loden

Iris Mamier

Kirsten Manalo

Nia Martin

Kelly McHan

Keri Medina

Enrique (Eric) Molina

Darren Moon

Jan Marie Nick

Terri Paden

Gemma Pangan

Mansi Patel

Judy Peters

Anne Berit Petersen

Mindy Potter

Robin Pueschel

Laura Raty

Rachel Reidinger

Karen Ripley

Lisa Roberts

Nancy Sarpy

MaryJo Schaarschmidt

Selam Stephanos

Beth Johnston Taylor

Rachel Tohm

Nicholas Topoleski

Courtney Tran

Fayette Nguyen Truax

Cecilia Ulltjaern

Kathy Valdeverona

Kristina Walters

Nancy Wolfe

Whitney Woodard

Tadele Worku

Dolores Wright

Joanna Yang

Amy Young

Zelne Zamora

### **Secondary faculty**

Danilyn Angeles

Carl Collier

Ihab Dorotta

Wessam Labib

John Lenart

Robert Martin

John Zhang

### **Emeritus faculty**

Shirley Bristol

Susan Lloyd

Margaret (Peggy) Burns

Vaneta Condon

Patricia Foster

Katty Joy French

Dynnette E. Hart

Emerita Associate Dean

Marilyn H. Herrmann

Emerita Dean

Patricia Jones

Distinguished Emerita Professor

Christine Neish

Patricia Pothier

Edelweiss R. Ramal

Lois H. Van Cleve

Ruth S. Weber

Betty Winslow

**Voluntary faculty**

Anita Adorador

Betty Ferrell

Janet Kroetz

Sabah Langston

Jennifer Mundall

Sofia Puerto

Michael Scofield

**Hospital-based faculty**

Karla A. Aryan

Norie Bencito-Acaac

Shayne Bigelow-Price

Jennifer Brown

Kurt Cao

Sarah S. Capalla

Ja-Yee Chu

Invest Joy Cocjin

Petersen, Denise

Shana S. Fujimoto

Kimberly Hillyer

Marie Hodgkins

Susan Krider

Maria Letts

Susan R. Markovich

Mary Melwak

Jean Newbold

Jennifer Newcombe

Sherry I. Nolfé

Jennifer Olson

Allison Ong

Truphosa O. Otianga

Patricia Radovich

Toby D. Richards

Helen Staples-Evans

Thomas Sweeney

Janelle Warren

Joseph Wilkinson

Gwendolyn Wysocki

## General regulations

### Student policies

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 each school's programs and outlines subject and unit requirements for admission to individual professional options. It is important to review the requirements of specific options within the context of general requirements applicable to all programs.

School of Nursing students are expected to adhere to the policies of the University and School of Nursing as presented in the Loma Linda University *Student Handbook*.

### Application and admissions

The purpose of the University's programs admissions committees is to ensure that applicants are qualified for the proposed curricula and are capable of profiting from the educational experience offered by this University. School admissions committees 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 may be given to those coming from within the Seventh-day Adventist Church and educational system.

Admission application information is located at [nursing.llu.edu](http://nursing.llu.edu) (<http://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 valid cardiopulmonary resuscitation (CPR) certificates approved by the American Heart Association in order to take clinical nursing courses. Students are responsible for the annual renewal of their immunizations, TB clearances, and CPR certifications. New undergraduate students are required to show evidence of completion of a first aid course.

#### Essential skills

Loma Linda University School of Nursing candidates for the B.S., M.S., D.N.P. or Ph.D. degree must have abilities, skills and professional attitudes that ensure the School educates students of the highest qualifications for the practice of nursing. These technical standards are requirements for admission to, promotion within, and graduation from the Loma Linda University School of Nursing. Technological compensation can be made for some disabilities in certain areas but a candidate should be able to perform in an independent manner without the use of a surrogate. Abilities, skills and professional attitudes in the following areas are required:

**Psychomotor (physical) skills**

- 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, including ability to distinguish colors, touch, taste, smell, and hearing.
- Utilize patient care equipment and perform technical patient care activities.

**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**

School of Nursing students requesting accommodations for a disability (p. 13), should consult the Office of the Associate Dean who administers the undergraduate or graduate programs.

## 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 online *Student Handbook*.

**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 and 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 School of Nursing student organization. This association includes all students of nursing and is administered by elected students, two faculty sponsors, and one sponsor from Student and Alumni Relations (StAR). The objectives of this organization are to serve as a channel for communication between students and the 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.

## Financial information

**School of Nursing Finances**

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 term. 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 2022-2023**

The charges that follow are subject to change without notice.

**Tuition****Tuition charge—undergraduate nonclinical, special, certificate, and part-time students**

\$705	B.S. per unit
\$365	RN to B.S. per unit
\$575	Clinical course fees per clinical course
\$945	Enrollment fee per quarter

**Tuition charge—graduate**

\$870	Graduate Programs
\$435	Clinical course fees per clinical course (excludes CRNA courses)
\$620	CRNA clinic course fees per clinical course

\$155	CRNA Program fee per quarter
\$945	Enrollment fee per quarter

### Other academic charges

(All charges in this section are nonrefundable.)

\$80	Teas testing fee (undergraduate only)
\$70	Application fee (except CRNA)
\$120	CRNA Application fee
\$200	Deposit to hold place in class (B.S., excludes RN to BS)
\$250	Deposit to hold place in class (M.S.)
\$250	Deposit to hold place in class (BS - D.N.P. / Ph.D.)
\$2,500	Deposit to hold place in class (CRNA)
\$120	CRNA Application Fee

### Credit by Examination (one half cost of tuition by unit)

\$355	Undergraduate per unit credit (challenge, equivalency)
\$435	Graduate per unit credit (challenge, equivalency)
\$50	Application to change concentration or degree program

### Licensing examinations

Registration and certification examinations and license fees are set by the state.

### Other charges

\$200	Clinical Laboratory make-up fee
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## 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. Selected awards are presented below. Other clinical awards may be given based on qualifications and funding

### 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.

### 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.

## 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.

# 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 stay current with trends in health care.

### Bachelor of Science (B.S.) degree

The purpose of the School of Nursing's baccalaureate degree is to prepare competent clinicians who are committed to excellence in practice and to Christian principles. The faculty believes that baccalaureate education in nursing is the basis for professional practice. The curriculum leading to the 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 and acute care—with clients from various ages, cultural groups, and socioeconomic strata.

### Undergraduate curriculum sequence

The undergraduate curriculum begins with four quarters of pre-clinical work—which forms the general education and science base for nursing. These quarters may be completed at any regionally accredited college or university. Courses taken at a nationally accredited college or university may also be considered. 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. Clinical experience develops a student's technical and theoretical capabilities in a progressive manner and within the context of the nursing process. Most baccalaureate nursing major courses are in the upper division, where clinical experience is gained in a broad variety of settings. Integral components of upper-division courses include leadership concepts and skills, research, public health, 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

Learning outcomes of the baccalaureate nursing program are designed to prepare competent nursing professionals. By the end of the program, graduates should be able to:

1. Apply the nursing process to individuals, families, groups, communities, and populations across the life span from diverse backgrounds in a variety of settings to ensure that it is wholeness-focused and compassionate as well as age and culturally appropriate.
  2. Collaborate with members of the interprofessional health-care team to manage and coordinate the provision of safe quality care for individuals, families, and groups.
  3. Integrate scientific information and best current evidence with clinical expertise and patient preferences when promoting health and making clinical judgments in the management of patient-centered care.
  4. Use quality improvement measures to evaluate the effect of change on the delivery of patient-centered care and patient outcomes.
  5. Evaluate effectiveness of strategies used to reduce the risk of harm to individuals, self, and others in health-care, home, and community settings.
6. Use empirical and evidence-based information and patient care technology to communicate relevant patient information, manage care, and mitigate error in the provision of safe, quality, and patient-centered care.
  7. Model integrity and accountability in practices that uphold established regulatory, legal, and ethical principles while providing standard-based nursing care.
  8. Integrate leadership and management theories and principles into practice when managing a caseload of patients and making clinical judgments about their care.
  9. Use verbal, nonverbal, and written communication strategies that promote an effective exchange of information, development of therapeutic relationships, and shared decision-making with patients, families, groups, communities, and populations from diverse backgrounds.

### 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; website: <http://www.rn.ca.gov/>.

## Bachelor of Science (B.S.) degree options

For all B.S. degree options, students must complete all prerequisite courses prior to starting the nursing program. Occasional exceptions for certain prerequisites can be made. For more specifics, consult with the admissions department staff.

### 1. Standard B.S. degree curriculum.

Individuals who have met the required prerequisites may complete a baccalaureate degree in eight quarters of full-time coursework. Part-time study is not an option. Courses are designed in the face-to-face learning method and require the student to be on campus multiple days each week. Instructional learning includes a combination of theory and clinical application.

Individuals who have been licensed vocational nurses, have held military health-care occupations, or have transferred from other nursing programs may qualify for advanced placement.

### 2. RN-to-B.S. curriculum.

An RN with an associate's degree in nursing or equivalent may complete a baccalaureate degree in four quarters of full-time coursework. Part-time study is an option. Courses are taught in the online format, with weekly discussions and assignments designed to focus on the working environment of the RN. The returning RN must have completed the majority of the prerequisite courses prior to acceptance into the program and must hold a current RN license.

If the student is attending a nursing program that has a concurrent agreement with Loma Linda University, coursework in the RN-to-B.S. program may begin before completing the A.S. degree and before RN licensure.

## Nondegree option

### The 45-quarter unit RN licensure option

Licensed LVNs who have been admitted and are currently in the nursing program have the option of requesting the 45-quarter-unit option



for LVNs. Because the LVN choosing this option does not meet the requirements for a degree as outlined by the school, neither a degree nor a certificate will be issued—nor will a graduation exercise be included. In addition, the student will not be eligible to wear the school pin, cap, or other insignia. An RN license obtained through this option is valid in California and may not be transferable to other states.

#### Prerequisite per BRN

High school diploma.

Current LVN license in California (skills will need to be validated).

Completion of anatomy, physiology, and microbiology with a grade of C or higher.

G.P.A. of at least 2.0.

#### Academic plan

##### Required courses

##### Basic science prerequisites

See above for details 9

##### Required courses

NRSG 217	Psychiatric Mental Health Nursing	6
NRSG 233	Health Assessment	3
NRSG 302	Adult Health Nursing II	8
NRSG 303	Adult Health Nursing III	7
NRSG 315	Child Health Nursing	6
NRSG 419	Capstone Nursing Leadership	6

**Total Units** 45

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 upper division courses. At least 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. Grades for nursing courses represent a combination of theory and clinical laboratory grades. In order to pass a nursing course, a student must receive a grade equivalent to a C or above in the theory and must receive either a C or a satisfactory in the 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. A grade of C- or below places the student on provisional status and requires that the student repeat the course. The student will be allowed to repeat the course based on space availability in the clinical setting. Enrollment in the School of Nursing will be terminated if a student receives two grades of C- or below in nursing courses.

#### 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

### Withdrawal

A student may withdraw (W) from no more than two nursing courses during the nursing program, and may withdraw only one time from the same course.

### Repeating undergraduate courses

A grade of C (2.0) is the minimum passing grade for nursing courses. A student may repeat a course only one time. Any nursing course taken while a student at Loma Linda University School of Nursing in which the earned grade is C- or lower must be repeated. When a student repeats a course, both the original and repeat grades are entered on 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. The student will be allowed to repeat the course based on space availability in the theory and/or clinical setting.

### Academic probation

- Students who have received a C- or below in a nursing course or who have withdrawn (W) due to failing, are placed on academic probation.
- Students on probation are required to take NRSG 244 Strategies for Academic Success, under the supervision of the Academic Center of Excellence (ACE).
- Students on probation are required to communicate regularly with their ACE mentor.
- Students on probation may take no more than 13 units including NRSG 244 Strategies for Academic Success.
- When the failed course has been repeated successfully, the student is returned to regular status.
- Students who receive a C- or below in any of the courses listed below must continue to enroll in NRSG 244 Strategies for Academic Success each quarter until successful completion of NRSG 301 Adult Health Nursing I.
  - NRSG 224 Nursing Pathophysiology
  - NRSG 231 Foundations of Nursing
  - NRSG 232 Fundamentals of Nursing
  - NRSG 233 Health Assessment
  - NRSG 305 Nursing Pharmacology

### Academic success

- In order to support academic success, students who receive a grade less than a B- in any of the courses listed below must:
  - Enroll in NRSG 244 Strategies for Academic Success each quarter until they successfully pass NRSG 301 Adult Health Nursing I.

- Follow an individualized plan for continued involvement with the Academic Center for Excellence (ACE) in subsequent quarters. The individualized plan will be developed based on individual needs as determined by the ACE faculty mentor, course instructor(s), advisor, and student.
- Applicable courses: NRS 224 Nursing Pathophysiology, NRS 231 Foundations of Nursing, NRS 232 Fundamentals of Nursing, NRS 233 Health Assessment, NRS 305 Nursing Pharmacology

## Academic dismissal

- Enrollment in the School of Nursing will be terminated if a student receives two grades of C- or below in nursing courses (See Student Handbook (<http://www.llu.edu/student-handbook/>) for Grievance Procedure).

## Clinical experiences

Clinical experiences are under the direction of the course coordinator with supervised experience under a clinical instructor in the care of patients. The student must meet LLUSN professional dress standards for clinical assignments and adhere to any additional dress policies of a particular clinical agency or setting. Failure to meet standards will result in being sent home from clinical lab. Unexcused tardiness or absences from class or clinical laboratory is cause for failure. Three times of being tardy to class or laboratory is equal to one absence. Absences in excess of 10 percent of course appointments (class, seminar, or clinical) may be cause for failure. Students must make up for absences from clinical experiences due to extenuating circumstances (e.g., personal illness or death in the family). A fee of \$200 will be charged for make-up of clinical laboratory during non-clinical 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 apply basic theoretical concepts to clinical practice by assessing, planning, and implementing nursing procedures; and evaluating the care of individuals, families, and communities. 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* while performing routine nursing care.

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. Students are expected to perform skills safely. Students whose performance is deemed unsafe may fail the course or be dropped from the program.

Students are responsible for their individual transportation to off-campus clinical sites. Individual transportation does not mean arrangements to car-pool with someone. Off-campus clinical assignments cannot be promised on the basis of the student's transportation convenience. Clinical sites may not be local and may require significant driving time. Students may be required to complete a clinical experience on a Sunday or a holiday.

## Licensure

To be eligible to write the NCLEX-RN examination, the student must have completed all prerequisites and required BRN-approved nursing curriculum courses required for licensure and have been awarded a B.S. degree in nursing. Under the laws of California, a candidate for the examination is required to report all misdemeanors, driving citations over

\$1,000, 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 at 76%. 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.

Examination fee will be waived when used to determine initial placement for military persons, licensed vocational nurses, and individuals transferring from other nursing programs who meet requirements for advanced placement in the nursing program. Credit for previous coursework must not exceed program residency requirements.

### Advanced placement program

Credit toward graduation may be accepted by the school for an entering student who has passed one or more Advanced Placement 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.

### Licensed vocational nurse (LVN) option for advanced placement

Licensed vocational nurses may be eligible to apply for advanced placement in the nursing program at Loma Linda University. LVN/LPN license required; candidates must either be currently employed as an LVN/LPN or for non-practicing license holders must have completed LVN/LPN education within the last 3 years. Interested candidates are advised to discuss advanced placement options with the admissions department prior to applying for the nursing program.

### Military option for advanced placement

Individuals who have held military health-care occupations in the areas including, but not limited to Basic Medical Technician Corpsmen, Army Health Care Specialist, or Air Force Independent Duty Medical Technician may be eligible to apply for advanced placement in the nursing program at Loma Linda University School of Nursing if they are able to provide verifiable education and experience. Interested candidates are advised to meet with the Associate Dean for Undergraduate Program at least four weeks prior to application to review eligibility requirements.

## 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 185 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; and to communicate each quarter with their assigned advisor.

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 – B.S. (standard)

### Admissions

The Admissions Committee seeks individuals who reflect a high degree of personal integrity, dependability, self-discipline, intellectual vigor, and a caring and thoughtful manner. Individuals who have held military health-care occupations, licensed vocational nurses, and individuals transferring from other nursing programs may qualify for advanced placement.

### Application deadlines

Applicants seeking undergraduate admission must complete the application process by the following dates:

- Autumn Quarter
  - Application submission deadline - February 1
  - Application documents and requirements deadline - March 1
- Winter Quarter
  - Application submission deadline - July 1
  - Application documents and requirements deadline - August 1

- Spring Quarter
  - Application submission deadline - October 1
  - Application documents and requirements deadline - November 1

In addition to Loma Linda University (p. 23) admission requirements, the applicant must:

1. Have completed a high school diploma or its equivalent.
2. Have a current first-aid certificate.
3. Have a current basic life support certificate approved by the American Heart Association.
4. Have earned a cumulative G.P.A. of 3.0 on all college coursework. Exception may be made based on a specific individualized evaluation. Grades below a "C" are nontransferable.
5. Students considering transfer of nursing coursework must provide course descriptions or outlines for clinical nursing courses in order for the school to determine the amount of transfer credit to be granted.
6. Complete entrance tests required for all incoming students who are not registered nurses.
7. Complete an interview arranged by the director of admissions.
8. Complete prerequisites. Courses are listed as they relate to general education requirements.

### Prerequisites

#### Domain 1: Religion (10 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

#### Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)

- College algebra (4)
- Anatomy and physiology with laboratory, complete sequence (8 units/two terms)<sup>1</sup>
- Introduction to organic and biochemistry with laboratory (8 units)<sup>2,3</sup>
- Basic medical microbiology with laboratory (5 units)<sup>1</sup>

#### Domain 4: Social sciences (minimum 12 quarter units)

- General psychology (4 units)
- Lifespan development or developmental psychology (4)
- Introduction to sociology or anthropology (4)
- One course (or components integrated into several courses) dealing specifically with issues of human diversity is required.

#### Domain 5: Written and oral communication (minimum 9 quarter units)

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university. (8-9 units)
- Public speaking (4)

#### Domain 6: Health and wellness (minimum 2 quarter units)

- Nutrition (3)
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

## Electives

As necessary, to meet the minimum total requirement of 67 transferable quarter units. These units added to the 118 undergraduate units required in the program fulfill the 185 total units required for the bachelor's degree.

<sup>1</sup> Preferred within five years

<sup>2</sup> A complete sequence of both general biology and general chemistry may be accepted in lieu of the Intro to organic and biochemistry requirements.

<sup>3</sup> A combined organic and biochemistry course of less than 8 units may be accepted if determined the course has covered the necessary content adequately.

For graduation requirements, see LLU General Education Requirements (p. 26).

## Pre-entrance requirements (p. 24)

1. A completed background check.
2. Health clearance, including immunizations as outlined in the "Admissions Policies and Information."

## Program requirements

### Major

NRSG 217	Psychiatric Mental Health Nursing	6
NRSG 224	Nursing Pathophysiology	5
NRSG 230	Principles of Professionalism, Clinical Reasoning, and Self-Care	3
NRSG 231	Foundations of Nursing	3
NRSG 232	Fundamentals of Nursing	7
NRSG 233	Health Assessment	3
NRSG 301	Adult Health Nursing I	6
NRSG 302	Adult Health Nursing II	8
NRSG 303	Adult Health Nursing III	7
NRSG 305	Nursing Pharmacology	3
NRSG 314	Obstetrical and Neonatal Nursing	5
NRSG 315	Child Health Nursing	6
NRSG 316	Wellness and Health Promotion	3
NRSG 324	Nursing Informatics and Evidence-Based Practice	3
NRSG 375	Introduction to Applied Biostatistics for Nursing	3
NRSG 375L	Computer Applications in Biostatistics	1
NRSG 404	Introduction to Epidemiology for Nursing	2
NRSG 405	Home Care Nursing	3
NRSG 408	Critical Care Nursing	8
NRSG 416	Public Health Nursing	4
NRSG 416L	Public Health Nursing Clinical Laboratory <sup>1</sup>	4
NRSG 418	Capstone Nursing Practicum	6
NRSG 419	Capstone Nursing Leadership	6
NRSG 429	Nursing Research	3

### Cognates

Religion: upper-division <sup>1</sup> 10

Must include from each of the following content areas: RELE (ethical), RELR (relational), and RELT (theological)

Must select one course from the following:

RELT 406	Adventist Beliefs and Life
RELT 423	Loma Linda Perspectives

RELT 436	Adventist Heritage and Health
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RELT 437	Current Issues in Adventism
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<b>Total Units</b>	<b>118</b>
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<sup>1</sup> Fulfills service learning requirement.

Total unit requirement for graduation is 185 quarter units (transfer units plus above-listed courses).

## Normal time to complete the program

Four (4) years – 2.66 years (eight [8] academic quarters) at LLU – based on full-time enrollment.

## 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 as follow.

- Autumn Quarter—March 15
- Winter Quarter—August 1
- Spring Quarter—November 1

Applicants seeking concurrent enrollment admission for Summer Quarter must have the application process completed by February 1.

In addition to Loma Linda University (p. 23) admission requirements, the applicant must also meet the following requirements:

1. Currently licensed registered nurse (RN), unless attending a school that has a concurrent enrollment agreement with Loma Linda University.
2. No grade below a "C" submitted for transfer.
3. An Associate in Science degree in nursing or equivalent from an accredited school of nursing, unless attending a school that has a concurrent enrollment agreement with Loma Linda University.
4. An interview or an advising appointment with the RN-B.S. representative.
5. Prerequisite courses listed below. Up to 12 units may be completed while in the program. Not applicable to concurrent enrollment track. (Requirements listed below are in quarter units. Courses are listed as they relate to general education requirements.)

### Prerequisites

#### Domain 1: Religion (4 quarter units)

(completed during enrollment at LLU)

#### Domain 2: Arts and humanities (minimum 16 quarter units)

Units must be selected from at least three of the following content areas: civilization/history, art, literature, language, philosophy, religion, or general humanities electives. A minimum of 3 quarter units in an area are required to meet a "content area."

**Domain 3: Scientific inquiry and quantitative reasoning (minimum 12 quarter units)**

- Anatomy and physiology with laboratory, complete sequence (8 units)<sup>1</sup>
- Introduction to chemistry with laboratory (4 units)<sup>1</sup>
- Basic medical microbiology with laboratory (5 units)<sup>1</sup>

**Domain 4: Social sciences (minimum 12 quarter units)**

- General psychology (4 units)
- Introduction to sociology (4)
- Social science electives chosen from the following content areas: anthropology, economics, geography, political sciences, psychology, and sociology
- One course (or components integrated into several courses) dealing specifically with issues of human diversity is required.

**Domain 5: Written and oral communication (minimum 9 quarter units)**

- English composition, complete sequence that meets the baccalaureate degree requirements of a four-year college or university. (8-9 units)
- Public speaking (4)

**Domain 6: Health and wellness (minimum 2 quarter units)**

- Nutrition (waived based on passing NCLEX exam)
- Physical education. Must include at least two separate physical activity courses totaling a minimum of one quarter units.

**Electives**

As necessary, to meet the minimum total requirement of 135 transferable quarter units. These units added to the 50 undergraduate units required in the program fulfill the 185 total units required for the bachelor's degree.

If the 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 (p. 40) under Academic Policies. Credit for 300-level nursing courses will be granted upon satisfactory completion of NRS337 Strategies for Professional Transition and NRS407 Complex Nursing Concepts of Health and Disease.

For graduation requirements, see LLU General Education Requirements (p. 26).

## Program requirements

**Major**

NRS324	Nursing Informatics and Evidence-Based Practice	3
NRS337	Strategies for Professional Transition	4
NRS375	Introduction to Applied Biostatistics for Nursing	3
NRS375L	Computer Applications in Biostatistics <sup>1</sup>	1
NRS407	Complex Nursing Concepts of Health and Disease	6
NRS414	Management and Leadership for the Registered Nurse	5
NRS416	Public Health Nursing	4
NRS424	Professional RN Capstone	7
NRS425	Introduction to Epidemiology for RNs	3
NRS428	Health Promotion for the RN	4
NRS429	Nursing Research	3

NRS434	Public Health Nursing Laboratory for the Working RN <sup>2</sup>	3
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**Cognates**

Religion: must include the following content areas. 4

RELE 4\_\_ Ethics elective

Must have one course from the following:

RELT 406	Adventist Beliefs and Life (3)
RELT 423	Loma Linda Perspectives (2)
RELT 436	Adventist Heritage and Health (2)
RELT 437	Current Issues in Adventism (2)

**Total Units** 50

<sup>1</sup> Students may take this course if an approved stats theory course has been completed previously.

<sup>2</sup> Fulfills service learning requirement

Total unit requirement for graduation is 185 quarter units (transfer units plus above-listed courses).

## Normal time to complete the program

Four (4) years — 1.33 years (four [4] academic quarters) at LLU — based on full-time enrollment; part time permitted

## Graduate

The sections that follow describe the Master of Science (M.S.), Doctor of Nursing Practice (D.N.P.), and Doctor of Philosophy (Ph.D.) degrees offered by the School of Nursing, and list the courses for each. School of Nursing students are expected to operate under the general policies of the University and the school, as well as the specific policies of the degree in which they are enrolled. Graduate education provides the student with opportunities to develop advanced knowledge, skills, and attitudes relevant to a specific area of interest in nursing. Programs of study prepare the nurse for practice, leadership, and research as appropriate to their professional role.

## 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., 48 units for the master's degree; 55-119 units for Doctor of Nursing Practice, depending on the selected concentration area and 60-86 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 coursework was done at an accredited institution and meets the requirements of a course for the degree at LLU.
2. A maximum of nine 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 or doctoral 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 coursework at this University with less than a B grade.

- 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*.

## 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 3 A and 4 A 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 required nurse anesthesia courses*, an earned grade of less than B (3.0) may not be repeated.
2. Withdrawal and repeating course
  - a. A student may withdraw only one time from any given core, concentration, or clinical course. (See 4B and 5B 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 cumulative G.P.A. is less than 3.0
- 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 D.N.P. or Ph.D. programs, the courses must be retaken and a grade of B or higher earned before proceeding in the clinical sequence. This applies if the low grade occurred in a clinical area that allows a course to be repeated (Nursing Administration, Nursing Education and D.N.P.). To repeat the course, it will be necessary to wait until the course is offered again and has space.
  - i. While on probation, a student:
    1. May not take the clinical focus courses, unless this is the course that must be repeated
    2. 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.

## Clinical probation

Clinical work must be evaluated as satisfactory. The 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.

## 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.

*For advanced practice CNS or NP concentrations, due to the intensive nature of the clinical courses, we strongly recommend that the student keeps their workload to less than 20 hours per week. Employment for CRNA students is strongly discouraged. Students are not permitted to work within 10 hours of the start of a clinical shift. Employment by title or function prior to graduation is forbidden.*

### Comprehensive project

A written, comprehensive project is required of all M.S. degree students (NGRD 610). The student is expected to integrate, evaluate, synthesize and apply theories and research studied in the graduate program. Each clinical track will guide development of the project.

### 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 their 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 them to edit large sections of manuscript.

### Graduation requirements

Degree candidates shall have:

1. Completed all requirements for admission to the respective curriculum.
2. Completed all requirements of the curriculum, including required coursework, 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 commencements only. See Section II of the Academic Policies.

The University reserves the right to prohibit participation in commencement by a candidate who has not satisfactorily complied with all requirements.

### Additional requirements/Policies

For additional policies governing Loma Linda University students, see the academic policies and information (p. 33) section under the heading, *About this University*, in this CATALOG, as well as the *University Student Handbook* which can be accessed at [www.llu.edu/student-handbook/](http://www.llu.edu/student-handbook/) (<http://www.llu.edu/student-handbook/>). Students are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

## Nursing – M.S.

### Program learning outcomes

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 should be able to:

1. Synthesize and apply research findings as a foundation for evidence-based practice.
2. Apply informatics and health-care technologies to support data management and improve patient care.
3. Collaborate interprofessionally to improve patient and population health outcomes.
4. Utilize baccalaureate-level humanities, nursing, and science competencies as a basis for advanced nursing practice.
5. Use organizational and systems leadership, management, and teaching skills to promote high-quality and safe patient care.
6. Contribute to health policy and advocacy by working with clients, health professionals, and organizations to improve access, quality, and delivery of health care.
7. Apply quality improvement and safety methods, tools, performance measures, and standards within professional settings.
8. Engage in clinical prevention and health promotion to maintain and improve population health.
9. Utilize advanced knowledge acquired from nursing and cognate sciences as a basis for advanced nursing practice.

### Admissions

In addition to Loma Linda University (p. 23) admission requirements, the applicant to the Master of Science program in nursing must also complete the following requirements:

1. Baccalaureate degree in nursing or its equivalent from an accredited institution.
2. GPA of 3.0, both cumulative and in nursing courses.
3. CA RN license before the start of classes.
4. Three electronic recommendations from recent professors, current work supervisor and spiritual advisor.
5. Interview by faculty members in the School of Nursing.

### Application deadlines

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following.

Nurse Educator, Nursing Administration

- Autumn Quarter—April 1
- Winter Quarter—August 1
- Spring Quarter—November 1

Pre-entrance requirements (p. 24):

1. Health clearance, including immunizations
2. Background check

## Regulations

### Nondegree course status

Up to 12 units of required core coursework 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 coursework 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 the curriculum without prior notice to maintain currency with standards in health care.

Students in continuous attendance will meet graduation requirements of the CATALOG under which they enter the School of Nursing unless change is necessary to comply with new professional standards.

### General requirements

For information about requirements and practices to which all graduate students are subject, the student should consult the *general regulations* section for the School of Nursing in this CATALOG.

## M.S. concentrations

Demonstration of comprehensive learning is required, either through a project or requirements embedded in courses required for the Master of Science degree, depending on the selected area of concentration

- Nurse Educator: Adult-Gerontology (p. 349)
- Nurse Educator: Obstetrics and Pediatrics (p. 349)
- Nursing Administration (p. 350)

## Nurse Educator: Adult–Gerontology Concentration

The nurse educator adult–gerontology concentration prepares nurses for a role as educator in either the academic or clinical setting, with a focus on the care of the individual from early adulthood through geriatrics.

### Core

NGRD 651	Theoretical Foundations for Evidence-Based Practice	4
NGRD 653	Health Systems Policy Development and Advocacy	4
NGRD 657	Intermediate Statistics	4
NGRD 658	Nursing Research and Translational Science	4
RELE 524	Bioethics and Society <sup>1</sup>	3

### Concentration

AHCJ 506 or NNGE 502	Educational Evaluation and Clinical Assessment <sup>2</sup> Assessment of Learning Outcomes	3
NGCN 551	Adult - Gerontology: CNS I	4
NGCN 552	Adult - Gerontology: CNS II	4
NGNE 500	Teaching and Learning Theory	3
NGNE 501	Curriculum Development in Higher Education	3
NGNE 503	Educational Leadership <sup>4</sup>	2
NGRD 621	Pharmacology in Advanced Practice I	2
NGRD 622	Pharmacology in Advanced Practice II	3
NGRD 624	Advanced Health Assessment	4
NGRD 625	Advanced Clinical Pathophysiology	4
<b>Clinical</b>		
NGNE 504	Teaching Practicum	3
NGNE 505	Clinical Practicum: Nurse Educator	3
<b>Project</b>		
NGRD 610	Master's Comprehensive Project	2
<b>Thesis (optional)</b>		
NGRD 696	Master's Thesis (1-5 units) <sup>3</sup>	

**Total Units** **59**

<sup>1</sup> Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

<sup>2</sup> Substituted with NNGE 502 Assessment of Learning Outcomes in off-campus programs

<sup>3</sup> Units are in addition to minimum required for the degree.

<sup>4</sup> Fulfills service learning requirement

### Normal time to complete the program

Three (3) years (11 academic quarters)—based on less than full-time enrollment.

## Nurse Educator: Obstetrics–Pediatrics Concentration

The nurse educator obstetrics–pediatrics concentration prepares nurses for an educator role in either the academic or clinical setting, with a focus on the care of the child from birth through adolescence.

### Core

NGRD 651	Theoretical Foundations for Evidence-Based Practice	4
NGRD 653	Health Systems Policy Development and Advocacy	4
NGRD 657	Intermediate Statistics	4
NGRD 658	Nursing Research and Translational Science	4
RELE 524	Bioethics and Society <sup>1</sup>	3

### Concentration

AHCJ 506 or NNGE 502	Educational Evaluation and Clinical Assessment <sup>2</sup> Assessment of Learning Outcomes	3
NGCN 561	Pediatrics: Clinical Nurse Specialist I	4
NGCN 562	Pediatrics: Clinical Nurse Specialist II	4
NGNE 500	Teaching and Learning Theory	3
NGNE 501	Curriculum Development in Higher Education	3
NGNE 503	Educational Leadership <sup>4</sup>	2

NGRD 621	Pharmacology in Advanced Practice I	2
NGRD 622	Pharmacology in Advanced Practice II	3
NGRD 624	Advanced Health Assessment	4
NGRD 625	Advanced Clinical Pathophysiology	4
<b>Clinical</b>		
NGNE 504	Teaching Practicum	3
NGNE 505	Clinical Practicum: Nurse Educator	3
<b>Project</b>		
NGRD 610	Master's Comprehensive Project	2
<b>Thesis (optional)</b>		
NGRD 696	Master's Thesis (1-5 units) <sup>3</sup>	
<b>Total Units</b>		<b>59</b>

<sup>1</sup> Acceptable alternate religion courses: RELE 534 Ethical Issues in Public Health, RELE 548 Christian Social Ethics, RELE 568 Bioethics and the Law

<sup>2</sup> Substituted with NGNE 502 Assessment of Learning Outcomes for off-campus programs

<sup>3</sup> Units are in addition to minimum required for the degree.

<sup>4</sup> Fulfills service learning requirement

### Normal time to complete the program

Three (3) years (11 academic quarters)—based on less than full-time enrollment.

## Nursing Administration Concentration

The nursing administration concentration 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

NGRD 650	Advanced Role Development and Collaboration	4
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4
NGRD 652	Health-Care Systems Leadership	4
NGRD 653	Health Systems Policy Development and Advocacy	4
NGRD 655	Health Systems Finance	4
NGRD 657	Intermediate Statistics	4
NGRD 658	Nursing Research and Translational Science	4
RELR 540	Wholeness and Health <sup>1</sup>	3

### Concentration

HADM 528	Organizational Behavior in Health Care	3
HADM 534	Health-Care Law	3
HADM 605	Health-Care Quality Management	3

Select three courses from the following: 9

HADM 514	Health-Care Economics	
HADM 529	Applied Leadership Concepts in Health-Care Organizations	
HADM 555	Health-Care Delivery Systems	
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	
<b>Clinical</b>		
NGNL 604	Nursing Administration Practicum	8
<b>Project</b>		
NGRD 610	Master's Comprehensive Project	2
<b>Thesis (optional)</b>		
NGRD 696	Master's Thesis (1-5 units) <sup>2</sup>	
<b>Total Units</b>		<b>59</b>

<sup>1</sup> Fulfills service learning requirement.

<sup>2</sup> Units are in addition to minimum required for the degree.

### Normal time to complete the program

Three (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 offers B.S. or post-master's degree curriculum. This curriculum allows B.S. or M.S.-prepared registered nurses to earn doctorates, which will prepare them for assuming leadership roles in advanced practice for patient care and health-care systems. It addresses and meets outcome expectations that advanced practice specialty areas be staffed by nurses with doctoral degrees, as articulated by the American Association of Colleges of Nursing.

### Learning outcomes for Doctor of Nursing Practice

Learning outcomes for the D.N.P. degree program are designed to prepare nurse leaders with a Christian perspective and enable them to contribute to professional nursing through clinical practice, teaching, and administration. Upon completion of the D.N.P. degree, the graduate should be able to:

1. Provide leadership in the use of information systems/technology and patient care technology for the improvement and transformation of health care.
2. Utilize current scientific underpinnings for practice.
3. Promote the use of practice scholarship and analytical methods for evidence-based practice.
4. Participate in interdisciplinary collaboration for improving patient and population health outcomes.
5. Advocate for health care through policy analysis and development.
6. Apply organizational and systems leadership theory for quality improvement and systems thinking.
7. Demonstrate leadership in the promotion of advanced nursing practice and the nursing profession.
8. Incorporate into their practice the principles of disease prevention and population health for improving the nation's health.
9. Develop and sustain therapeutic relationships with patients, families, and other professionals, considering all aspects of care—including physical, mental, and spiritual—to facilitate optimal care and patient outcomes using evidence based-practice.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, the applicant to the Doctor of Nursing Practice program must also complete the following:

### Bachelors to Doctor of Nursing Practice program admissions criteria

1. Baccalaureate degree or equivalent in nursing from an accredited institution
2. GPA of 3.0, both cumulative and in nursing courses
3. Current unencumbered United States RN license before application and CA RN license before the start of classes.
4. Current BLS certification
5. Three electronic recommendations from recent professors, current work supervisor, and spiritual advisor.
6. Interview by faculty members in the School of Nursing
7. Additional criteria for nurse anesthesia applicants:
  - a. Science GPA of 3.0 or higher
  - b. Unrestricted Registered Nurse license in the United States; unrestricted Registered Nurse license in California before matriculation and must be maintained until program completion
  - c. Three electronic recommendations from the following: one each from a spiritual advisor or pastor, an immediate supervisor in the critical care area in which the applicant is currently working, and a critical care/ICU coworker
  - d. Current certification in BLS, ACLS, and PALS is required before clinical courses begin and must be maintained until program completion; CCRN preferred
  - e. Eight hours of clinical observation with a CRNA highly recommended before admission interview
  - f. Minimum one year, full-time critical care RN experience (in the US) at time of matriculation (excluding orientation); adult critical care experience preferred. Experience is evaluated on an individual basis.
  - g. Completion of an online questionnaire following submission of application—must be completed by the applicant before the admission deadline
  - h. Not all applicants who meet the admissions criteria are guaranteed an interview. Competitive applicants are selected for an interview by Nurse Anesthesia Admissions Committee.
8. Additional criteria for acute care practitioner applicants:
  - a. Baccalaureate or masters degree in nursing from an accredited program
  - b. Cumulative GPA of 3.0 or higher
  - c. Science GPA of 3.0 or higher
  - d. Unrestricted Registered Nurse (RN) license in the United States with an unrestricted Registered Nurse license in California BEFORE matriculation and the California RN license must be maintained until program completion.
  - e. Minimum of one year of full-time RN experience in an acute care setting in an adult critical care area where the RN must have developed critical decision making and psychomotor skills; competency in patient assessment; proficiency in monitor and calculating infusion rates for critical care medicines and monitoring those infusions; and the ability to use and interpret advanced monitor techniques including, but not limited to mechanical ventilation and invasive monitoring for cardiovascular, respiratory and neurological status. A critical care

area is defined as one, where on a routine basis, the RN manages one or more of the following: invasive, hemodynamic monitors such as pulmonary artery catheter, central venous pressure monitoring (CVP) and arterial lines; cardiac assist devices; mechanical ventilation; and vasoactive infusions. Examples of Adult Critical Care Units may include, but are not limited to Surgical Intensive Care Unit; Trauma and Neurological Intensive Care Unit; Medical Intensive Care Unit; Coronary Intensive Care Unit; Cardiothoracic Intensive Care Unit; or a Comprehensive Licensed Emergency Department affiliated with an acute care hospital that has specialty designation such as a Level I or II Trauma Center, a Stroke Center of a Cardiac Care Center. Post-Anesthesia Care Units are NOT considered critical care units for admission.

- f. Current certifications – American Heart Association Basic Life Support (CPR) and Advanced Cardiac Life Support (ACLS) certification are required before admission and must be maintained until program completion. Pediatric Advanced Life Support (PALS) certification is optional.
- g. Three strong letters of recommendation using the LLU form provided from a spiritual advisor or pastor, immediate supervisor in the critical care area in which the applicant is currently working, critical care/ICU co-worker
9. If interview is granted by the Acute Care NP Program Admissions Committee:
  - a. Completion of Emotional Intelligence Screening and continued participation in the Emotional Intelligence Program and course work through completion of the program

### Post-Masters to Doctor of Nursing Practice program admissions criteria

1. Completion of a master's degree in nursing with a clinical major from a program or completion of a bachelor's degree in nursing and a masters in a closely related field. The nursing degrees must be accredited by Commission on Collegiate Nursing Education (CCNE), National League of Nursing Accrediting Commission (NLNAC) or the Accreditation Commission for Education in Nursing (ACEN).
2. Undergraduate and Graduate GPA of 3.0, both cumulative and in nursing courses.
3. Current U.S. RN license and BLS certification.
4. Three electronic recommendations from recent professors, current work supervisor, and spiritual advisor.
5. Interview by faculty members in the School of Nursing.

### Application deadlines

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following.

- Nurse Anesthesia
  - Autumn Quarter - Application Period: June 1 - August 1
  - Autumn Quarter Documents Deadline: All official documents must be submitted by September 1
- Clinical Nurse Specialist and Nurse Practitioner
  - Autumn Quarter—April 1
  - Winter Quarter—August 1
  - Spring Quarter—November 1

Pre-entrance requirements (p. 24):

1. Health clearance, including immunizations
2. Background check

## Regulations

### Nondegree course status

Up to 12 units of required core coursework 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 coursework 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 the curriculum without prior notice to maintain currency with standards in health care.

Students in continuous attendance will meet graduation requirements of the CATALOG under which they enter the School of Nursing unless change is necessary to comply with new professional standards.

### General requirements

For information about requirements and practices to which all graduate students are subject, the student should consult these sections of the CATALOG: *About the University* and General Regulations, School of Nursing (p. 335).

## Program requirements

### Bachelor of Science to Doctor of Nursing Practice:

Clinical Nurse Specialist concentration areas:

- Clinical Nurse Specialist: Adult-Gerontology (p. 353)
- Clinical Nurse Specialist: Pediatrics (p. 355)

Nurse Anesthesia (p. 363)

Nurse Leadership (p. 365)

Nurse Practitioner concentration areas:

- Acute Care Adult-Gerontology Nurse Practitioner (p. 357)
- Acute Care Pediatric Nurse Practitioner (p. 359)
- Family Nurse Practitioner (p. 361)
- Primary Care Adult-Gerontology Nurse Practitioner (p. 367)
- Primary Care Pediatric Nurse Practitioner (p. 369)
- Psychiatric Mental Health Nurse Practitioner (p. 371)

Post-Masters to Doctor of Nursing Practice (p. 372)

## Clinical Nurse Specialist: Adult-Gerontology Concentration

The clinical nurse specialist: adult-gerontology concentration prepares students for leadership roles as clinical nurse specialists within the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to adult and geriatric clients and families. The curriculum offers an opportunity to choose an emphasis in a selected vulnerable population with health-care needs. The curriculum includes 540 hours of clinical practicum in the advanced practice role and 510 practicum hours for the D.N.P. role. The graduate is prepared for certification by the American Nurses Certification Corporation as a clinical nurse specialist in adult-gerontology nursing.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>2</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGRD 621	Pharmacology in Advanced Practice I	2.0	20	—	—	2.0
NGRD 622	Pharmacology in Advanced Practice II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	—	—	13.0
<b>Clinical</b>						
NGCN 551	Adult - Gerontology: CNS I	4.0	40	—	—	4.0
NGCN 552	Adult - Gerontology: CNS II	4.0	40	—	—	4.0
NGCN 553	Adult - Gerontology: CNS III	2.0	20	2.0	60	4.0
NGCN 554A	Adult-Gerontology: CNS Clinical Practicum	—	—	5.0	150	5.0
NGCN 554B	Adult - Gerontology: CNS Clinical Practicum	—	—	5.0	150	5.0
NGCN 554C	Adult - Gerontology: CNS Clinical Practicum C	—	—	6.0	180	6.0
Totals		10.0	100	18.0	540	28.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		73.8	740	35.2	1080	109.0

<sup>1</sup> Multiple registrations required to fulfill total unit requirement

<sup>2</sup> Fulfills service learning requirement



## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four (4) years (15 academic quarters)—based on less than full-time enrollment.

# Clinical Nurse Specialist: Pediatrics Concentration

Closed to admissions for the 2022-2023 academic year.

The clinical nurse specialist: pediatrics concentration prepares students for leadership roles as clinical nurse specialists within the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to nursing care of children and families. The curriculum offers an opportunity to choose an emphasis in a selected vulnerable population experiencing health-care needs. The curriculum includes 540 hours of clinical practice in the advanced practice role and 510 practicum hours for the DNP role. The graduate is prepared for certification by the American Nurses Certification Corporation (ANCC) as a clinical nurse specialist in acute-care pediatrics.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>2</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGRD 621	Pharmacology in Advanced Practice I	2.0	20	—	—	2.0
NGRD 622	Pharmacology in Advanced Practice II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	—	—	13.0
<b>Clinical</b>						
NGCN 561	Pediatrics: Clinical Nurse Specialist I	4.0	40	—	—	4.0
NGCN 562	Pediatrics: Clinical Nurse Specialist II	4.0	40	—	—	4.0
NGCN 563	Pediatrics: Clinical Nurse Specialist III	2.0	20	2.0	60	4.0
NGCN 564	Pediatrics: Clinical Nurse Specialist Clinical Practicum	—	—	2.0	60-240	2.0-8.0
Totals		10.0	100	4.0	120-300	14.0-20.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		73.8	740	21.2	660-840	95.0-101.0

<sup>1</sup> Multiple registrations required to fulfill total unit requirement

<sup>2</sup> Fulfills service learning requirement

## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four years (15 academic quarters)—based on less than full-time enrollment.

## Acute Care Adult-Gerontology Nurse Practitioner

The acute care adult-gerontology nurse practitioner concentration prepares the nurse for a leadership role in the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to the acute health-care needs of adults across the age spectrum, in consultation and collaboration with acute care physicians and other health-care providers. The curriculum includes 600 hours of clinical practice in the advanced practice role and 510 practicum hours for the DNP role. The curriculum prepares the student to be certified as an adult-gerontology nurse practitioner by the state of California, the American Nurses Certification Corporation, and the American Association of Nurse Practitioners.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGAG 500	Gerontological Health and Wellness	2.0	20	—	—	2.0
NGAC 501	Acute Care Advanced Pharmacology I	2.0	20	—	—	2.0
NGAC 502	Acute Care Advanced Pharmacology II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		15.0	150	—	—	15.0
<b>Clinical</b>						
NGAC 540	Acute Care Nurse Practitioner Skills Lab	—	—	1.0	30	1.0
NGAC 541	Adult Gerontology Acute Care Nurse Practitioner I	3.0	30	3.0	90	6.0
NGAC 542	Adult Gerontology Acute Care Nurse Practitioner II	3.0	30	3.0	90	6.0
NGAC 543	Adult Gerontology Acute Care Nurse Practitioner III	3.0	30	4.0	120	7.0
NGAC 544	Adult Gerontology Acute Care Nurse Practitioner IV	3.0	30	4.0	120	7.0
NGAC 545	Adult Gerontology Acute Care Nurse Practitioner V	1.0	10	7.0	210	8.0
Totals		13.0	130	22.0	660	35.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		78.8	790	39.2	1200	118.0

<sup>1</sup> Fulfills service learning requirement

## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four (4) years (15 academic quarters) based on less than full-time enrollment.

## Acute Care Pediatric Nurse Practitioner

The acute care pediatric nurse practitioner clinical option prepares the nurse for a leadership role in the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to the primary health-care needs of children from birth through adolescence, in consultation and collaboration with primary care physicians and other health-care providers. The curriculum includes 570 hours of clinical practice in the advanced practice role and 510 practicum hours for the DNP role. The curriculum prepares the student to be certified as a pediatric nurse practitioner by the state of California and by the Pediatric Nursing Certification Board.

Core	Theory		Clinical		Total Units	
	Units	Hours	Units	Hours		
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGAC 501	Acute Care Advanced Pharmacology I	2.0	20	—	—	2.0
NGAC 502	Acute Care Advanced Pharmacology II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	—	—	13.0
<b>Clinical</b>						
NGAC 540	Acute Care Nurse Practitioner Skills Lab	—	—	1.0	30	1.0
NGAC 541	Adult Gerontology Acute Care Nurse Practitioner I	3.0	30	3.0	90	6.0
NGAC 542	Adult Gerontology Acute Care Nurse Practitioner II	3.0	30	3.0	90	6.0
NGAC 543	Adult Gerontology Acute Care Nurse Practitioner III	3.0	30	4.0	120	7.0
NGAC 544	Adult Gerontology Acute Care Nurse Practitioner IV	3.0	30	4.0	120	7.0
NGAC 545	Adult Gerontology Acute Care Nurse Practitioner V	1.0	10	7.0	210	8.0
Totals		13.0	130	22.0	660	35.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		76.8	770	39.2	1200	116.0

<sup>1</sup> Fulfills service learning requirement



## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four (4) years (15 academic quarters), based on less than full-time enrollment.

## Family Nurse Practitioner Concentration

The family nurse practitioner concentration option prepares the nurse for a leadership role in the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to the primary health-care needs of family members from newborn through elders, in consultation and collaboration with family practice physicians and other health-care providers. The curriculum includes 660 hours of clinical practice in the advanced practice role and 510 practicum hours for the DNP role. The curriculum prepares the graduate to be certified as a family nurse practitioner by the state of California and the American Nurses Certification Corporation.

Core	Theory		Clinical		Total Units	
	Units	Hours	Units	Hours		
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGFP 519	Family Nurse Practitioner: Skills Lab	—	—	1.0	30	1.0
NGRD 621	Pharmacology in Advanced Practice I	2.0	20	—	—	2.0
NGRD 622	Pharmacology in Advanced Practice II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	1.0	30	14.0
<b>Clinical</b>						
NGFP 510	Family Nurse Practitioner: Pediatrics and Adolescent	3.0	30	2.0	60	5.0
NGFP 511	Family Nurse Practitioner I	3.0	30	2.0	60	5.0
NGFP 512	Family Nurse Practitioner II	2.0	30	4.0	180	6.0
NGFP 513	Family Nurse Practitioner III	4.0	40	4.0	120	8.0
NGFP 514	Family Nurse Practitioner IV	4.0	40	4.0	120	8.0
NGFP 515	Family Nurse Practitioner V: Practicum	1.0	10	7.0	210	8.0
Totals		17.0	180	23.0	750	40.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		80.8	820	41.2	1320	122.0

<sup>1</sup> Fulfills service learning requirement

## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four years (15 academic quarters)—based on less than full-time enrollment.

## Nurse Anesthesia

The nurse anesthesia concentration is designed to educate critical care registered nurses in the nurse anesthetist role across the life span. Upon completion, graduates are able to exercise advanced levels of clinical judgment, systems thinking, and expanded responsibility, as well as become accountable for planning, implementing, and evaluating evidence-based strategies. Graduates are awarded a Doctor of Nursing Practice degree and are eligible to sit for the National Certification Examination of the National Board on Certification and Recertification of Nurse Anesthetists.

Code	Title	Clock Hours				Total Units
		Lec	Lab	Clinical	Total	
<b>Core</b>						
NGRD 651	Theoretical Foundations for Evidence-Based Practice	40			40	4.0
NGRD 652	Health-Care Systems Leadership	40			40	4.0
NGRD 653	Health Systems Policy Development and Advocacy	40			40	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	40			40	4.0
NGRD 655	Health Systems Finance	40			40	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	40			40	4.0
NGRD 657	Intermediate Statistics	40			40	4.0
NGRD 658	Nursing Research and Translational Science	40			40	4.0
NGRD 659	Professional Writing for Nurse Leaders	40			40	4.0
RELE 564	Ethics and Health Disparities	30			30	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	30			30	3.0
RELT 557	Theology of Human Suffering	30			30	3.0
<b>Concentration</b>						
NGNA 571	Advanced Role for the Nurse Anesthetist I	20			20	2.0
NGNA 572	Advanced Role for the Nurse Anesthetist II	20			20	2.0
NGNA 573	Scientific Foundations of Nurse Anesthesia Practice	40			40	4.0
NGNA 574	Anesthesia Equipment and Technology	20			20	2.0
NGNA 575	Advanced Clinical Anatomy for the Nurse Anesthetist I	10	30		40	2.0
NGNA 576	Advanced Clinical Anatomy for the Nurse Anesthetist II	10	30		40	2.0
NGNA 577	Advanced Physiology for the Nurse Anesthetist	40			40	4.0
NGNA 578	Advanced Physiology and Pathophysiology for the Nurse Anesthetist I	40			40	4.0
NGNA 579	Advanced Physiology and Pathophysiology for the Nurse Anesthetist II	40			40	4.0
NGNA 580	Advanced Health Assessment for Nurse Anesthetists	30	30		60	4.0
NGNA 581	Advanced Pharmacology for the Nurse Anesthetist I	60			60	6.0
NGNA 582	Advanced Pharmacology for the Nurse Anesthetist II	20			20	2.0
NGNA 583	Advanced Pharmacology for the Nurse Anesthetist III	20			20	2.0
NGNA 584	Principles of Nurse Anesthesia Practice I	30	30		60	4.0
NGNA 585	Principles of Nurse Anesthesia Practice II	30	30		60	4.0
NGNA 586	Principles of Nurse Anesthesia Practice III	40			40	4.0
NGNA 587	Principles of Nurse Anesthesia Practice IV	40			40	4.0
<b>Clinical</b>						
NGNA 591	Clinical Practicum I			200	200	2.0
NGNA 592	Clinical Practicum II			200	200	2.0
NGNA 593	Clinical Practicum III			200	200	2.0
NGNA 594	Clinical Practicum IV			200	200	2.0
NGNA 595	Clinical Practicum V			400	400	4.0
NGNA 596	Clinical Practicum VI			400	400	4.0
NGNA 597	Clinical Practicum VII			400	400	4.0
NGNA 598	Clinical Practicum VIII			400	400	4.0
NGNA 599	Clinical Practicum IX			400	400	4.0
<b>DNP Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	20	40		60	3.0
NGRD 669A	DNP Practice Inquiry Project			120	120	4.0
NGRD 669B	DNP Practice Inquiry Project			120	120	4.0
NGRD 669C	DNP Practice Inquiry Project			80	80	2.0
NGRD 669D	DNP Practice Inquiry Project			60	60	2.0

NGRD 669E	DNP Practice Inquiry Project				60	60	2.0
NGRD 669F	DNP Practice Inquiry Project				60	60	2.0
<b>Total Units</b>		<b>980</b>	<b>190</b>	<b>3300</b>	<b>4470</b>		<b>148</b>

<sup>1</sup> Fulfills service learning requirement

### Normal time to complete the program

Thirty-nine (39) months (14 academic quarters)—based on full-time enrollment.

## Nurse Leadership Concentration

The Nurse Leadership Concentration prepares students for important roles that ensure quality performance in high-level patient care, as well as support nursing practice, student education, and fostering a culture of research. The nurse leader sets the vision for nursing practice in the delivery of safe, timely, efficient, equitable, and patient-centered care. Working within a collaborative and interprofessional environment, the executive practice nurse is influential in improving the patient experience of care (including quality and satisfaction), improving the health of populations, and reducing the per capita cost of health care.

The curriculum draws from the practice of nursing, management, and related fields, and includes administrative, research, and clinical components. The Nurse Leader Concentration program provides for learning in an environment that fosters autonomy, flexibility, and creative scholarship.

An intensive practicum provides the opportunity to develop and test skills in real-life settings, with an emphasis in critical thinking.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
HADM 508	Accounting Fundamentals in Health-Care Management	4.0	40	—	—	4.0
HADM 528	Organizational Behavior in Health Care	3.0	30	—	—	3.0
HADM 534	Health-Care Law	3.0	30	—	—	3.0
HADM 559	Health-Care Marketing	3.0	30	—	—	3.0
HADM 574	Managing Human Resources in Health-Care Organizations	3.0	30	—	—	3.0
HADM 575	Management Information Systems in Health Care	3.0	30	—	—	3.0
HADM 604	Health Systems Strategic Planning	3.0	30	—	—	3.0
HADM 605	Health-Care Quality Management	3.0	30	—	—	3.0
HGIS 522	Principles of Geographic Information Systems and Science	2.0	20	—	—	2.0
HGIS 524	GIS Software Applications and Methods	3.0	30	—	—	3.0
Totals		30.0	300	—	—	30.0
<b>Clinical</b>						
NGNL 611	Nurse Leadership Practicum I	—	—	2.0	60	2.0
NGNL 612	Nurse Leadership Practicum II	—	—	2.0	60	2.0
NGNL 613	Nurse Leadership Practicum III	—	—	2.0	60	2.0
NGNL 614	Nurse Leadership Practicum IV	—	—	2.0	60	2.0
NGNL 615	Nurse Leadership Practicum V	—	—	2.0	60	2.0
NGNL 616A	Nurse Leadership Practicum VI <sup>2</sup>	—	—	2.0	60	2.0
NGNL 616B	Nurse Leadership Practicum VI <sup>2</sup>	—	—	3.0	90	3.0
NGNL 616C	Nurse Leadership Practicum VI <sup>2</sup>	—	—	3.0	90	3.0
Totals		—	—	18.0	540	18.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0



NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		80.8	810	35.2	1080	116.0

<sup>1</sup> Fulfills service learning requirement.

<sup>2</sup> Course is not required for students who pass the American Nurse Credentialing Center (ANCC) exam or the American Organization for Nursing Leadership (AONL) exam.

## Portfolio

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 Doctoral Leadership Practice hours will be included in the portfolio.

## Normal time to complete the program

Four (4) years (15 academic quarters)—based on less than full-time enrollment.

## Primary Care Adult-Gerontology Nurse Practitioner Concentration

The primary care adult-gerontology nurse practitioner concentration prepares the nurse for a leadership role in the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to the primary health-care needs of adults across the age spectrum, in consultation and collaboration with primary care physicians and other health-care providers. The curriculum includes 600 hours of clinical practice in the advanced practice role and 510 practicum hours for the D.N.P. role. The curriculum prepares the student to be certified as an adult-gerontology nurse practitioner by the state of California, the American Nurses Certification Corporation, and the American Association of Nurse Practitioners.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGAG 509	Primary Care Adult-Gerontology Nurse Practitioner: Skills Laboratory	—	—	1.0	30	1.0
NGRD 621	Pharmacology in Advanced Practice I	2.0	20	—	—	2.0
NGRD 622	Pharmacology in Advanced Practice II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	1.0	30	14.0
<b>Clinical</b>						
NGAG 500	Gerontological Health and Wellness	2.0	20	—	—	2.0
NGAG 501	Primary Care Adult-Gerontology Nurse Practitioner I	3.1	33	1.9	60	5.0
NGAG 502	Primary Care Adult-Gerontology Nurse Practitioner II	3.0	30	3.0	90	6.0
NGAG 503	Primary Care Adult-Gerontology Nurse Practitioner III	6.0	120	2.0	120	8.0
NGAG 504	Primary Care Adult-Gerontology Nurse Practitioner IV	6.0	120	2.0	120	8.0
NGAG 505	Primary Care Adult-Gerontology Nurse Practitioner V: Practicum	1.0	10	7.0	210	8.0
Totals		21.1	333	15.9	600	37.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		84.9	973	34.1	1170	119.0

<sup>1</sup> Fulfills service learning requirement

## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four years (15 academic quarters)—based on less than full-time enrollment.

## Primary-Care Pediatric Nurse Practitioner Concentration

The primary-care pediatric nurse practitioner concentration clinical option prepares the nurse for a leadership role in the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as related to the primary health-care needs of children from birth through adolescence, in consultation and collaboration with primary care physicians and other health-care providers. The curriculum includes 570 hours of clinical practice in the advanced practice role and 510 practicum hours for the D.N.P. role. The curriculum prepares the student to be certified as a pediatric nurse practitioner by the state of California and by the Pediatric Nursing Certification Board.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGAC 501	Acute Care Advanced Pharmacology I	2.0	20	—	—	2.0
NGAC 502	Acute Care Advanced Pharmacology II	3.0	30	—	—	3.0
NGPE 539	Primary Care Pediatric Nurse Practitioner: Skills Laboratory	—	—	1.0	30	1.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	1.0	30	14.0
<b>Clinical</b>						
NGPE 531	Primary Care Pediatric Nurse Practitioner I	4.0	40	—	—	4.0
NGPE 532	Primary Care Pediatric Nurse Practitioner II	3.0	30	3.0	90	6.0
NGAC 533	Pediatric Acute Care Nurse Practitioner III	3.0	30	3.0	90	6.0
NGAC 535	Pediatric Acute Care Nurse Practitioner V	3.0	30	3.0	90	6.0
NGAC 536	Pediatric Acute Care Nurse Practitioner VI	—	—	7.0	210	7.0
NGAC 540	Acute Care Nurse Practitioner Skills Lab	—	—	1.0	30	1.0
Totals		13.0	130	17.0	510	30.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		76.8	770	35.2	1080	112.0

<sup>1</sup> Fulfills service learning requirement

## **Portfolio**

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## **Normal time to complete the program**

Four years (15 academic quarters)—based on less than full-time enrollment.

## Psychiatric Mental Health Nurse Practitioner Concentration

The psychiatric mental health nurse practitioner (PMHNP) concentration clinical option prepares the nurse for a leadership role in the health-care system. Clinical and theoretical content focuses on systems thinking, evidence-based practice, and translational research as they relate to the promotion of mental health, prevention, and treatment of psychiatric disorders, in consultation and collaboration with psychiatrists and other mental health-care providers. The curriculum includes 570 hours of clinical practice in the advanced practice role and 510 practicum hours for the D.N.P. role. The curriculum prepares the student to be certified as a psychiatric nurse practitioner by the state of California and the American Nurses Certification Corporation.

Core		Theory		Clinical		Total Units
		Units	Hours	Units	Hours	
NGRD 650	Advanced Role Development and Collaboration	4.0	40	—	—	4.0
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4.0	40	—	—	4.0
NGRD 652	Health-Care Systems Leadership	4.0	40	—	—	4.0
NGRD 653	Health Systems Policy Development and Advocacy	4.0	40	—	—	4.0
NGRD 654	Social Determinants of Health <sup>1</sup>	4.0	40	—	—	4.0
NGRD 655	Health Systems Finance	4.0	40	—	—	4.0
NGRD 656	Outcomes Assessment for Strategic Planning	4.0	40	—	—	4.0
NGRD 657	Intermediate Statistics	4.0	40	—	—	4.0
NGRD 658	Nursing Research and Translational Science	4.0	40	—	—	4.0
NGRD 659	Professional Writing for Nurse Leaders	4.0	40	—	—	4.0
RELE 564	Ethics and Health Disparities	3.0	30	—	—	3.0
RELR 525	Health Care and the Dynamics of Christian Leadership	3.0	30	—	—	3.0
RELT 557	Theology of Human Suffering	3.0	30	—	—	3.0
Totals		49.0	490	—	—	49.0
<b>Concentration</b>						
NGPM 549	Psychiatric Mental Health Nurse Practitioner VII: Skills Laboratory	—	—	1.0	30	1.0
NGRD 621	Pharmacology in Advanced Practice I	2.0	20	—	—	2.0
NGRD 622	Pharmacology in Advanced Practice II	3.0	30	—	—	3.0
NGRD 624	Advanced Health Assessment	4.0	40	—	—	4.0
NGRD 625	Advanced Clinical Pathophysiology	4.0	40	—	—	4.0
Totals		13.0	130	1.0	30	14.0
<b>Clinical</b>						
NGPM 541	Psychiatric Mental Health Nurse Practitioner I	3.0	30	1.0	30	4.0
NGPM 542	Psychiatric Mental Health Nurse Practitioner II	3.0	30	3.0	90	6.0
NGPM 543	Psychiatric Mental Health Nurse Practitioner III	3.0	30	3.0	90	6.0
NGPM 544	Psychiatric Mental Health Nurse Practitioner IV	3.0	30	3.0	90	6.0
NGPM 545	Psychiatric Mental Health Nurse Practitioner V	3.0	30	3.0	90	6.0
NGPM 546	Psychiatric Mental Health Nurse Practitioner VI: Practicum	1.0	10	6.0	180	7.0
Totals		16.0	160	19.0	570	35.0
<b>D.N.P. Project</b>						
NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	1.8	20	1.2	40	3.0
NGRD 669A	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669B	DNP Practice Inquiry Project	—	—	4.0	120	4.0
NGRD 669C	DNP Practice Inquiry Project	—	—	2.0	80	2.0
NGRD 669D	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669E	DNP Practice Inquiry Project	—	—	2.0	60	2.0
NGRD 669F	DNP Practice Inquiry Project	—	—	2.0	60	2.0
Totals		1.8	20	17.2	540	19.0
Overall Totals		79.8	800	37.2	1140	117.0



<sup>1</sup> Fulfills service learning requirement

## Portfolio

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## Normal time to complete the program

Four years (15 academic quarters)—based on less than full-time enrollment.

# M.S. to D.N.P.

The Master of Science degree to Doctor of Nursing Practice degree option prepares the advanced practice registered nurse, the nursing administrator, or the nurse educator for a leadership role in the health-care system. Theoretical content focuses on the development of leadership knowledge, skills, and attitudes. Systems thinking, evidence-based practice, and translational research are emphasized.

Advanced standing may be given for courses usually required for a master's degree in advanced practice, administration, or education. Please see program requirements for more details. All students are required to complete the D.N.P. degree project.

## Program requirements

### Core

NGRD 650	Advanced Role Development and Collaboration <sup>1</sup>	4
NGRD 651	Theoretical Foundations for Evidence-Based Practice <sup>1</sup>	4
NGRD 652	Health-Care Systems Leadership <sup>1</sup>	4
NGRD 653	Health Systems Policy Development and Advocacy <sup>1</sup>	4
NGRD 654	Social Determinants of Health <sup>3</sup>	4
NGRD 655	Health Systems Finance	4
NGRD 656	Outcomes Assessment for Strategic Planning	4
NGRD 657	Intermediate Statistics <sup>1</sup>	4
NGRD 658	Nursing Research and Translational Science <sup>1</sup>	4
NGRD 659	Professional Writing for Nurse Leaders	4
RELE 564	Ethics and Health Disparities <sup>2</sup>	3
RELR 525	Health Care and the Dynamics of Christian Leadership	3
RELT 557	Theology of Human Suffering	3

### D.N.P. Project

NGRD 667	Introduction to the Doctor of Nursing Practice Inquiry Proposal Project	3
NGRD 669A	DNP Practice Inquiry Project	4
NGRD 669B	DNP Practice Inquiry Project	4
NGRD 669C	DNP Practice Inquiry Project	2
NGRD 669D	DNP Practice Inquiry Project	2
NGRD 669E	DNP Practice Inquiry Project	2
NGRD 669F	DNP Practice Inquiry Project	2

**Total Units** **68**

study is developed based on this evaluation and length of time since these courses were taken. Prior coursework that partially meets the course outcomes will be augmented by registering for 1 to 6 units of NGRD 660 Integrative Leadership Case Study.

<sup>2</sup> Advanced standing will be given if this specific course was taken as part of the M.S. degree program.

<sup>3</sup> Fulfills service learning requirement

## Portfolio

Prior to graduation, students are required to submit an online professional portfolio. Documentation of 510 doctoral leadership practice hours will be included in the portfolio.

## Normal time to complete the program

Three (3) years (11 academic quarters) – based on less than full-time enrollment

<sup>1</sup> Advanced standing may be given for content covered in a prior M.S. degree. Prior learning is evaluated and an individualized program of

## Nursing – Ph.D.

The aim of the Doctor of Philosophy (Ph.D.) degree program in nursing is to prepare nurse scholars for leadership in education, health-care administration, and research. The Ph.D. degree in nursing is a research-oriented degree with emphasis on the development of nursing science in the areas of vulnerable populations, health/wellness/wholeness, and health systems research. The nurse-scientist who completes this program should be committed to the generation of knowledge critical to development of nursing science and practice. Graduates join other nursing leaders in furthering the development of nursing science and improving health-care delivery throughout the world. The program completion range is three to seven years (projected mean is five years) depending on whether students are full or part time.

### Program learning outcomes

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 graduate should be able to:

1. Embrace a holistic perspective on life and demonstrate this by integrating the bio-psycho-social-spiritual dimensions in teaching, scholarship, and service.
2. Extend Christ-centered values to nursing scholarship and education.
3. Serve as a nurse scholar through the generation and dissemination of knowledge relevant to nursing science, health policy, and the nursing profession.
4. Clearly explain complex phenomena in spoken and written English to both professional and lay audiences.
5. Demonstrate advanced competency and leadership in the use of technology for the purpose of generating new knowledge in nursing.
6. Engage in collaborative discourse, scholarship, and leadership contributing to health care and society.
7. Expand the knowledge and science in the provision of nursing-related care to diverse groups.

## The curriculum

The Ph.D. degree program is classified as an online, distance education-accessible program, incorporating virtual synchronous, asynchronous, and, on occasion when feasible, in-person methodologies of instruction. The curriculum has six domains: core courses (B.S. to Ph.D.), Ph.D. role courses, concentration/elective courses (to support the dissertation), methods courses (research methods and statistics), religion, and dissertation units. The department has identified approximately 20 courses within the School of Nursing that could be selected to satisfy requirements within the domains as well as a variety of courses in other Loma Linda University schools and the NEXus\* consortium that may support the student's dissertation interest.

The doctoral degree provides an in-depth understanding of knowledge development within the discipline of nursing through philosophical, theoretical, and scientific methods of inquiry. Students are encouraged to select an individually focused area of advanced inquiry that will support their chosen area of expertise in nursing, and falls within the broad scope of vulnerable populations, health/wellness/wholeness, or health-systems research. The individual area of concentration should fit established research programs of the School of Nursing faculty or other University faculty members as advised.

\* 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. Develop an area of concentration and receive approval of the proposed academic plan by the end of the first year of full-time study.
2. Complete all core, concentration, and methods courses.
3. Pass an oral comprehensive examination.
4. Successfully defend research a proposal.
5. Advance to candidacy.
6. Successfully defend a dissertation.

Refer to guidelines from the Faculty of Graduate Studies\* and the Ph.D. degree student handbook for dissertation format requirements.

The normal time to complete the program is three to seven years—(five years projected mean) based on less than full-time enrollment.

\*The Ph.D. Program Oversight: Faculty of Graduate Studies

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, the applicant to the Doctor of Philosophy degree program in nursing must also complete the following requirements:

1. Minimum of a baccalaureate degree in nursing from an accredited program. Applicants with a prior master's degree in nursing are eligible to receive up to 32 units of advanced standing.\*
2. GPA of 3.0, both cumulative and in nursing courses
3. Current RN license before application\*
4. Three electronic recommendations from recent professors, current work supervisor, and spiritual advisor
5. Interview by faculty members in the School of Nursing
6. Health Science Reasoning Test

### Application deadlines

Applicants seeking graduate admission must have the application process completed by the dates indicated in the following:

- Autumn Quarter—April 1
- Winter Quarter—August 1
- Spring Quarter—November 1

## Program requirements

### B.S. to Ph.D.

Core		
NGRD 626	Advanced Methods for Synthesis Science	4
NGRD 651	Theoretical Foundations for Evidence-Based Practice	4
NGRD 652	Health-Care Systems Leadership	4
NGRD 653	Health Systems Policy Development and Advocacy	4
NGRD 657	Intermediate Statistics	4
NGRD 658	Nursing Research and Translational Science	4
PhD Role		
NGRD 679	Writing for Professional Publication	4
NGRD 680	Strategies for Advanced Theory Development in Nursing	4
NGRD 681	Philosophical Foundations of Nursing Science	4
NGRD 688	Nursing Science Seminar (1) <sup>4</sup>	2
Concentration/Electives		
Focused courses foundational to dissertation and/or the PhD role.		20
Cognates		
RELR 5__	Graduate-level Relational	3
RELE 5__	Graduate-level Ethics	3
RELT 5__	Graduate-level Theological	3
Research and Statistics		
NGRD 664	Advanced Statistics	4
NGRD 683	Mentored Research (2) <sup>2</sup>	4
NGRD 684	Quantitative Research Methods	4
NGRD 685	Qualitative Research Methods	4
NGRD 686	Applied Psychometrics for Health Care (Advanced Methods Course) <sup>3</sup>	4
or NGRD 695	Advanced Qualitative Research	
NGRD 697	Dissertation Research (1-8) <sup>4</sup>	20
<b>Total Units</b>		<b>107</b>

### M.S. to Ph.D.

Core		
NGRD 657	Intermediate Statistics <sup>1</sup>	4
NGRD 658	Nursing Research and Translational Science	4
PhD Role		
NGRD 679	Writing for Professional Publication	4
NGRD 680	Strategies for Advanced Theory Development in Nursing	4
NGRD 681	Philosophical Foundations of Nursing Science	4
NGRD 688	Nursing Science Seminar (1) <sup>4</sup>	2
Concentration/Electives		
Focused courses foundational to dissertation and/or the PhD role.		12
Cognates		
RELR 5__	Graduate-level Relational	3
RELE 5__	Graduate-level Ethics	3
RELT 5__	Graduate-level Theological	3
Research and Statistics		
NGRD 664	Advanced Statistics	4
NGRD 683	Mentored Research (2) <sup>2</sup>	4
NGRD 684	Quantitative Research Methods	4

NGRD 685	Qualitative Research Methods	4
NGRD 686	Applied Psychometrics for Health Care (Advanced Methods Course) <sup>3</sup>	4
or NGRD 695	Advanced Qualitative Research	
NGRD 697	Dissertation Research (1-8) <sup>4</sup>	20
<b>Total Units</b>		<b>83</b>

<sup>1</sup> Advanced standing given if the course has been taken within the last five years or a master's-level theory course in statistics.

<sup>2</sup> Research Practicum.

<sup>3</sup> NGRD 686 Applied Psychometrics for Health Care if study design is quantitative; NGRD 695 Advanced Qualitative Research if study design is qualitative.

<sup>4</sup> Requires multiple registrations.

### Service learning requirement

Nursing Ph.D. students may fulfill the service learning requirement by completing either RELR 540 Wholeness and Health or NGRD 654 Social Determinants of Health.

### Normal time to complete the program

5.5 years – based on less than full-time enrollment

# SCHOOL OF PHARMACY

## Dean's welcome



Welcome to Loma Linda University School of Pharmacy. We are so glad you've chosen us to guide your journey to becoming a pharmacist. We truly believe **patients achieve optimal health and medication outcomes with pharmacists as essential and accountable providers within patient-centered, team-based health care.** (JCPP Vision, [www.jcpp.net](http://www.jcpp.net) (<http://www.jcpp.net>)). Loma Linda provides a unique environment to explore your calling in service to mankind and fulfilling this national vision for the role of the pharmacist in the integrated health-care team. The past couple of years have been filled with significant challenges of a pandemic; yet, out of each challenge is born new opportunity. Pharmacists have solidified their important role within our health system, particularly in the areas of disease prevention (vaccines, infectious disease prevention, cardiovascular health) and chronic disease management. We've expanded our post-doctoral residencies and fellowships with the second largest program in the state of California. We've also focused heavily on health equity and solving for the social determinants of health in our local community through active engagement coupled with diverse faculty and student recruitment. We are known globally for our approach to the integration of faith as an essential component of wholeness. In short, we believe that we will help you develop into a provider that demonstrates the very best in competent, compassionate, caring, and ethical pharmacy practice.

The profession of pharmacy is changing, and the casual observer may not see the opportunity in these changes. The Pharmacy Manpower Project conducts an analysis of pharmacy practice every five years. Two key findings frame where pharmacists are practicing and will practice in the future. First, the number of pharmacists in traditional community pharmacy practice is declining due to changes in technology and provision of medicines through mail order and direct product distribution. This remains an outstanding area of pharmacy practice for those who innovate and diversify their patient care offerings in addition to provision of medicines. Secondly, the number of pharmacists working alongside physicians in medical practices is rapidly growing, fueled by an emphasis on improving quality of patient outcomes. Of course, pharmacists are highly valued and practicing at the top of their training in hospitals, home health care, and a host of other practice locations. And many pharmacists are finding niche practices where their skills are highly valued, such as in health information technology, personalized and genomic medicine, and much more. While change is hard sometimes, a Loma Linda pharmacy education will provide you with all of the skills and knowledge you need to flourish whatever your path to take advantage of a career that has many promising rewards.

The Faculty and Staff are here to help you grow intellectually, relationally, physically, and spiritually as you prepare for a life of service in your chosen profession. We wish you continued success as you strive to achieve your professional and personal goals.

Michael D. Hogue, Pharm.D., FAPhA, FNAP  
Dean, School of Pharmacy

## School foundations

### History

In 1994, a school of pharmacy was proposed to the Loma Linda University Board of Trustees; in 1995, the Board voted to continue to approve, in principle, the establishment of a school of pharmacy. The new School of Pharmacy's 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 as well as three research laboratories.

## Mission, vision, goals and values

### Our mission

The mission of Loma Linda University School of Pharmacy is to educate competent and compassionate pharmacists who are dedicated to whole-person care as integral members of a health-care team. We pursue excellence in teaching, service, research, and clinical care in honor of Jesus Christ.

### Our vision

To continue the teaching and healing ministry of Jesus Christ.

### Our goals

The goals of Loma Linda University School of Pharmacy are to:

- Develop graduates who possess the leadership and critical thinking skills to innovate and influence the dynamic field of health care.

- Develop a spirit of service in students by engaging in reciprocal and sustainable relationships with local and global communities.
- Develop students, faculty, and alumni who are accountable and responsible for patient drug therapy outcomes.
- Develop graduates who will demonstrate mastery of social and emotional intelligence.
- Develop a unique community of individuals who demonstrate excellence in providing whole-person care.
- Actively engage students and faculty in collaborative teaching, scholarship, service, and patient care.

## Our values

The School of Pharmacy's academic and co-curricular activities focus on Loma Linda University's seven core values (p. 18).

### Dean

Michael D. Hogue

### Primary faculty

Jacinda Abdul-Mutakabbir

Olayemi Adeoye

Khaled Bahjri

Kristopher Boyle

Willie L. Davis

Danielle L. Davis-Khoromana

Ike dela Pena

Alireza FakhriRavari

Olivia Francis-Boyle

Paul Gavaza

Jody M. Gonzalez

Alireza Hayatshahi

Michael D. Hogue

Lisa Hong

Tomona Iso

Christopher Jacobson

Soo Min Jang

Nancy E. Kawahara

Justin M. Kinney

Kathryn T. Knecht

Jessa M. Koch

Victoria Maskiewicz

Randall McDonough

Aimable Ngendahimana

Wei-Xing Shi

Caroline M. Sierra

Kyle M. Sousa

Noreen Chan Tompkins

Huyentran N. Tran

Farnoosh Zough

## Secondary and adjunct faculty

Antony Gobin

Norm Hamada

Christopher Hauschild

Michelle Spencer-Safier

## 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 accepts students with advanced standing into the Pharm.D. program under the following conditions:

1. Students must meet one of the two following conditions:
  - a. They must be currently enrolled in good standing at an ACPE-accredited school of pharmacy.
  - b. If not currently enrolled, they must be currently eligible to be re-enrolled at their previous ACPE-accredited school of pharmacy.
2. Students must have a grade point average of not less than 3.25 or equivalent in a Pharm.D. program.
3. Students must complete the prescribed admissions process and provide for evaluation of all requested documents (e.g., transcripts, syllabi, and/or course descriptions) related to their previous enrollment in pharmacy school. Applications will be reviewed on a case-by-case basis.

Students will only be admitted with advanced standing to either the PY1 or PY2 years of the LLUSP curriculum.

## Computer competency

Students must have computer proficiency prior to enrollment, such as use of an email system (including attachment of a document), familiarity with a learning management system (Canvas or Blackboard), as well as basic knowledge of word processing program(s), presentation program(s), and spreadsheet program(s). Students must also be capable of searching the internet and navigating their computers.

## 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 a 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. Students who have questions about the *Policy and Procedure Manual* should contact the associate dean of student affairs and admissions.

## Health check requirements

All new students are required to have the immunizations listed below 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 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.
- Tetanus/diphtheria/pertussis (Tdap): Must be current within ten years. (Note: a tetanus-only or Td vaccine does not meet the requirement; it must contain the pertussis component.)
- Hepatitis B: Series of three injections, recombinant form-Engerix-B or Recombivax-HB; or series of two injections, intradermal form Heplisav-B consistent with Centers for Disease Control and Prevention current recommendations.
- Tuberculosis skin test (PPD Mantoux): Must be current within six months. (If a student tests positive, a chest X-ray report done within the past year is required or a blood test QuantiFERON or T-Spot.)
- Varicella (chickenpox): Must show proof of a positive Varicella titer.

A completed immunization record form must be uploaded to the CORE computer program and submitted to the School of Pharmacy Office of Experiential Education, as well as to 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.

## 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, non-probationary 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 within 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. Integrity 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:

1. To respect oneself.
2. To respect the dignity, feelings, worth, and values of others.
3. To respect the rights and property of others, and to discourage vandalism and theft.
4. To prohibit discrimination while striving to learn from differences in people, ideas, and opinions.
5. To practice personal, professional, and academic integrity as well as discourage all forms of dishonesty, plagiarism, deceit, and disloyalty to the code of conduct.
6. To foster a personal professional work ethic within the Loma Linda University family.
7. To foster an open, fair, and caring environment.
8. To be fully responsible for upholding the Loma Linda University code.
9. Specific policies are outlined in greater detail in the University *Student Handbook*.

## BLS and first aid certification

All students must be currently certified in basic life support and first aid during their enrollment in the School of Pharmacy.

## Professional organizations

Involvement in professional organizations is an integral part of the educational and professional experience within the School of Pharmacy. The complete list of School of Pharmacy-recognized professional organizations can be found in the *Professional Organization Policies and Procedure Manual*. This manual is maintained by the Office of Student Affairs.

# Academic policies and procedures

## Curriculum outcome objectives

On August 21, 2014, the faculty approved and adopted the following outcomes based on CAPE 2013 educational outcomes.

### Domain 1—Foundational Knowledge

**Subdomain 1.1. Learner (Learner)**—Develop, integrate, and apply knowledge from the foundational sciences (i.e., pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

### Learning objectives

By the end of the program, the graduate should be able to:



1. Develop and demonstrate depth and breadth of knowledge in pharmaceutical, social/behavioral/administrative, and clinical sciences.
2. Articulate how knowledge in foundational sciences is integral to: a) clinical reasoning, b) evaluation of future advances in pharmacotherapy, c) supporting health and wellness initiatives, and d) delivery of contemporary pharmacy services.
3. Integrate knowledge from foundational sciences to explain how specific drugs or drug classes work, and evaluate their potential value in individuals and populations.
4. Apply knowledge in foundational sciences to solve therapeutic problems and advance patient-centered care.
5. Analyze scientific literature related to drugs and disease to enhance clinical decision-making.
6. Identify and analyze emerging theories, information, and technologies that may impact patient-centered and population-based care.

## Domain 2—Essentials for Practice and Care

**Subdomain 2.1. Patient-centered care (Caregiver)**—Provide patient-centered care as the medication expert (collect and interpret evidence; prioritize; formulate assessments and recommendations; implement, monitor and adjust plans; and document activities).

### Learning objectives

By the end of the program, the graduate should be able to:

1. Collect subjective and objective evidence related to patient, medications, allergies/adverse reactions, and disease by performing patient assessment (including physical assessment) from chart/electronic health records, pharmacist records, and patient/family interviews.
2. Interpret evidence and patient data.
3. Prioritize patient needs.
4. Formulate evidence-based care plans, assessments, and recommendations.
5. Implement patient-care plans.
6. Monitor the patient and adjust the care plan as needed.
7. Document patient care-related activities.

**Subdomain 2.2. Medication-use systems management (Manager)**—Manage patient health-care needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication-use systems.

### Learning objectives

By the end of the program, the graduate should be able to:

1. Compare and contrast the components of typical medication-use systems in different pharmacy practice settings.
2. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication-use system (i.e., procurement, storage, prescribing, transcription, dispensing, administration, monitoring, documentation, and outcomes).

3. Utilize technology to optimize the medication-use system.
4. Identify and utilize human, financial, and physical resources to optimize the medication-use system.
5. Manage health-care needs of patients during transitions of care.
6. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use.
7. Utilize continuous quality improvement techniques in the medication-use process.

**Subdomain 2.3. Health and wellness (Promoter)**—Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

### Learning objectives

By the end of the program, the graduate should be able to:

1. Describe the use of risk assessment, risk reduction, screening, education, and immunizations to provide systematic preventive care.
2. Provide prevention, intervention, and educational strategies for individuals and communities to improve health and wellness.
3. Participate with inter-professional health-care team members in the management of and health promotion for all patients.
4. Evaluate personal, social, behavioral, economic, and environmental conditions to improve health and wellness.

**Subdomain 2.4. Population-based care (Provider)**—Describe how population-based care influences patient-centered care, the development of practice guidelines, and evidence-based best practices.

### Learning objectives

By the end of the program, the graduate should be able to:

1. Assess the health-care status and needs of a targeted patient population.
2. Develop and provide an evidence-based approach that considers items—including cost, care, access, satisfaction needs, and cultural appropriateness of a targeted patient population.
3. Participate in population health management by evaluating, recommending, and/or adjusting interventions to maximize health.

## Domain 3—Approach to Practice and Care

**Subdomain 3.1. Problem solving (Problem Solver)**—Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

### Learning objectives

By the end of the program, the graduate should be able to:

1. Identify and define the primary problem.
2. Define basic and alternative goals.
3. Explore multiple solutions by organizing, prioritizing, and defending each possible solution.

4. Anticipate positive and negative outcomes by reviewing assumptions, inconsistencies, and unintended consequences.
5. Implement the most viable solution, including monitoring parameters, to measure intended and unintended consequences.
6. Reflect on the solution implemented and its effects to improve future performance.

**Subdomain 3.2. Educator (Educator)**—Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.

#### Learning objectives

By the end of the program, the graduate should be able to:

1. Conduct a learning needs assessment of constituents who would benefit from pharmacist-delivered education (e.g., patients/caregivers, technicians and interns, pharmacy students, fellow pharmacists, other health-care providers, and legislators).
2. Select the most effective techniques/strategies to achieve learning objectives.
3. Demonstrate the ability to coordinate educational efforts with other health-care providers, when appropriate, to ensure a consistent, comprehensive, and team-based encounter.
4. Ensure that instructional content contains the most current information relevant for the intended audience.
5. Adapt instruction and delivery to the intended audience.
6. Assess audience comprehension.

**Subdomain 3.3. Patient advocacy (Advocate)**—Assure that patients' best interests are represented.

#### Learning objectives

By the end of the program, the graduate should be able to:

1. Incorporate elements of Loma Linda University's wholeness philosophy to empower patients to take responsibility for and control of their health.
2. Assist patients in navigating the complex health-care system.
3. Ensure that patients obtain the resources and care required in an efficient and cost-effective manner (e.g., triage to social and/or other health-care services).

**Subdomain 3.4. Inter-professional collaboration (Collaborator)**—Actively participate and engage as a health-care team member by demonstrating mutual respect, understanding, and values to meet patient-care needs.

#### Learning objectives

By the end of the program, the graduate should be able to:

1. Establish a climate of shared values and mutual respect necessary to meet patient-care needs.
2. Define clear roles and responsibilities for team members to optimize outcomes for specific patient-care encounters.

3. Communicate in a manner that values team-based decision-making and shows respect for contributions from other areas of expertise.
4. Foster accountability and leverage expertise to form a highly functioning team (one that includes the patient, family, and community) and promote shared patient-centered problem-solving.

**Subdomain 3.5. Cultural sensitivity (Includer)**—Recognize social determinants of health to diminish disparities and inequities in access to quality care.

#### Learning objectives

By the end of the program, the graduate should be able to:

1. Recognize the collective identity and norms of different cultures without overgeneralizing (i.e., recognize and avoid biases and stereotyping).
2. Demonstrate an attitude that is respectful of different cultures.
3. Assess a patient's health literacy and modify communication strategies to meet the patient's needs.
4. Safely and appropriately incorporate patients' cultural beliefs and practices into health- and wellness-care plans.

**Subdomain 3.6. Communication (Communicator)**—Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization.

#### Learning objectives

By the end of the program, the graduate should be able to:

1. Interview patients using an organized structure, specific questioning techniques, and medical terminology adapted for the audience.
2. Actively listen and ask appropriate open- and closed-ended questions to gather information.
3. Use available technology and other media to assist with communication as appropriate.
4. Use effective interpersonal skills to establish rapport and build trusting relationships.
5. Communicate responsibly with assertiveness, persuasiveness, confidence, and clarity.
6. Demonstrate empathy when interacting with others.
7. Deliver and obtain feedback to assess learning and promote goal setting and goal attainment.
8. Develop professional documents pertinent to organizational needs.
9. Document patient-care activities clearly, concisely, and accurately using appropriate medical terminology.

#### ACPE complaint policy

Standard No. 15: Student Complaints Policy of the accreditation standards and guidelines for the professional program in pharmacy leading to the Doctor of Pharmacy degree states, "the college or school develops, implements, and makes available to students a complaints policy that includes procedures for how students may file complaints within the college or school and also directly to ACPE regarding their

college or school's adherence to ACPE standards. The college or school maintains a chronological record of such student complaints, including how each complaint was resolved."

The ACPE complaints policy with instructions on how to file a complaint can be found at <https://www.acpe-accredit.org/complaints/>. (<http://www.acpe-accredit.org/complaints/default.asp>)

## Experiential education

While enrolled in the Doctor of Pharmacy program, students are required to complete a supervised series of practice-based courses to prepare them for licensure as pharmacists. To qualify for licensure as a pharmacist, students must graduate from the School of Pharmacy with a Doctor of Pharmacy degree, achieve passing scores on the North American Pharmacist Licensure Examination (NAPLEX) and the law examination for the state where they plan to practice.

The experiential program consists of both introductory pharmacy practice experiences (IPPE) and advanced pharmacy practice experiences (APPE) phar designed to meet the required structured, supervised, professional experience for a Doctor of Pharmacy degree. Students and their supervising preceptors are guided by the Loma Linda University School of Pharmacy *Experiential Program Manuals* for both students and preceptors, which contain guidelines and policies for successful completion of the program.

The School of Pharmacy requires participation in introductory pharmacy practice experiences each year during P1 through P3 to enhance practice skills and prepare students to function as members of a health-care team. Advanced pharmacy practice experiences comprise the entire P4 curriculum, and are designed to help students integrate and refine skills learned in the first three years of pharmacy coursework (didactic and experiential) as well as prepare students to serve as trustworthy professionals who provide patient-centered care.

The purpose of the experiential education program is to apply knowledge from classroom and laboratory courses to patient care (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

During experiential courses, students are assigned to both inpatient and outpatient pharmacy practice settings under the direct supervision of a School of Pharmacy preceptor. Participation in the IPPE/APPE courses requires a valid California intern pharmacist license issued by the California Board of Pharmacy. Students completing IPPE/APPE requirements at sites outside of California must be licensed in the applicable state. When a student is participating in 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* remain in effect throughout the completion of this experience. If IPPE or APPE site regulations and policies differ from University policies, the site policies supersede. In addition to the aforementioned 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 tardiness will not be tolerated.
- Students must maintain their University email accounts as well as the experiential education course platforms (e.g., Canvas) indicated

by the Office of Experiential Education, and check them at least daily to keep apprised of important information or announcements.

- All experiential educational assignments are made through the Office of Experiential Education.
- Students are not to function as agents or employees of the site. They must identify themselves as a student pharmacists (interns) 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 as well as receipt of a failing grade in the course.

The student is responsible for all financial obligations associated with their pharmacy education. They are also responsible for fulfilling all site requirements prior to each rotation within the time frame requested. These responsibilities include transportation, food, lodging, and any other incidental costs related to practice 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 70 miles from campus.

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 on the campus, but receives instruction and guidance through a School of Pharmacy preceptor.

The Office of Experiential Education requires all students to adhere to the School of Pharmacy dress code, and to wear their Loma Linda University identification cards and short white laboratory coats at all times while at the experiential site. The laboratory coat must be white, clean, and freshly pressed. 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 implements special attire or dress code requirements (e.g., wearing scrubs in the operation room pharmacy or in a sterile compounding area), 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 the Department of Pharmacy Practice, along with the IPPE and APPE directors and their respective staff, coordinate the experiential training, courses, reflections, and communication with students, sites, preceptors, and the state board of pharmacy. Participation in the practice-based experiences requires:

- *Immunizations*: Students must safeguard themselves and be sure that all University-required immunizations are up to date. Students are responsible for keeping the records for their own immunizations accessible. For the protection of patients and the students themselves, it is highly recommended that students receive the influenza and COVID-19 vaccine in September during their P4 year. Some sites may require these immunizations.
- *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.

- **Medicare fraud and abuse training:** Students must complete training and obtain a certificate of training annually.
- **Tuberculosis screening:** Students must be screened and cleared for tuberculosis annually during their enrollment (complete a one- or two-step PPD test, depending on the practice site requirement). A chest X-ray may also be required when medically indicated. Students shall follow specific instructions provided by the Office of Experiential Education. A record of tuberculosis screening clearance must be on file with LLU Student Health Service.
- **Background check:** Loma Linda University School of Pharmacy and practice facilities require background checks 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. Annual review and update is required during the program.
- **Random drug screening:** Random drug screenings may be required for some practice settings. These screenings may be above and beyond school-mandated screening.
- **Intern license:** Students must hold valid, non-probationary California pharmacist intern licenses throughout the advanced pharmacy practice experiences.
- **CPR/First aid:** Students must hold valid CPR and first-aid certificates. Effective dates must be current through the completion of P4.
- **Student health card:** Students must carry the Loma Linda University student health insurance card with them at all times.

Requirements for participation in the IPPE/APPE program are subject to modification based on the requirements for licensure and the requirements for placement in the participating practice settings.

## Introductory pharmacy practice experience (IPPE)

The goals of the introductory pharmacy practice experiences are to sharpen 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 apply therapeutic knowledge through the first three years of the curriculum. Under the supervision 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 in the program. These experiences 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, adult acute care (medicine), and clinical community practice. Two experiences will be in elective fields. All APPEs must be completed under the supervision of a School of Pharmacy preceptor who is also a licensed pharmacist. In order to progress to the advanced pharmacy practice experiences, a student must achieve P4 standing as defined by the School of Pharmacy.

## Licensing

### Pharmacy intern license

All School of Pharmacy students must have a current non-probationary California intern pharmacist license. Students will be guided through the licensure application process during the first-year orientation. The intern licensure is required for all IPPEs and APPEs. Information

about the pharmacy intern license can be found online at [http://www.pharmacy.ca.gov/forms/intern\\_app\\_pkt.pdf](http://www.pharmacy.ca.gov/forms/intern_app_pkt.pdf).

It is the student's responsibility to keep his or her pharmacy intern license current and valid. The Board of Pharmacy must be notified of address, enrollment status, or name changes within 30 days of the change. A photocopy of the student's valid pharmacy intern license must be on file in the school's Office of Experiential Education.

## Pharmacy intern hours

In order to be licensed as a pharmacist in California, the California State Board of Pharmacy requires each applicant to have completed a minimum of 300 IPPE and 1,440 APPE hours of supervised pharmacy practice experience. As of January 1, 2016, an applicant for the pharmacist examination who has graduated on or after January 1, 2016, from an ACPE-accredited college of pharmacy or school of pharmacy recognized by the board shall be deemed to have satisfied those pharmacy practice experience requirements.

## 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 non-binding for the school or the University unless approved by the dean.

Registration is not complete until tuition and fees of 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 educational costs during their last term of enrollment. An international student's deposit will be refunded if a student visa is not obtained.

## Schedule of charges

The following charges are subject to change without notice.

### Tuition

\$49,500 Annual block tuition

### Fees

\$3,780 Enrollment fee

**Miscellaneous**

\$75	Application fee
\$500	Acceptance deposit; nonrefundable, applicable to tuition
\$1,500	Estimated books and supplies
\$25	Returned check processing fee
\$100-200	Late fee

**Other charges**

\$230	California Board of Pharmacy internship license (application, examination, interim practice permit); plus Live Scan fingerprinting fee (cost varies).
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**On- and off-campus student housing**

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) (<http://www.llu.edu/central/housing/>) for housing information and a housing application form.

**Additional requirements**

Students are responsible for staying informed and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation.

**Pharmacy – Pharm.D.**

The curriculum at Loma Linda University School of Pharmacy is designed to ensure students are prepared for lifelong learning and prepared to serve as medication experts. The school reserves the right to make changes to the curriculum upon recommendation of the curriculum committee and adoption by the faculty. Students will be notified of any necessary 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 molecular biology or cell biology may not be part of the biology course sequence. 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 (one quarter or/semester), lecture and laboratory (4/4) Must include mechanics or Newtonian physics. Survey course is acceptable.
- Molecular biology or cell biology

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 coursework is required for general biology, general chemistry and organic chemistry. 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.

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 12 semester or 16 quarter units of coursework in Social and Behavioral sciences, an additional 12 semester or 16 quarter units of coursework in humanities and fine arts, and an additional six semester or nine quarter units of English composition.

**Recommended courses**

Biochemistry  
Genomics  
Histology  
Human Genetics  
Immunology  
Microbiology  
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 <http://www.llu.edu/central/apply/>.

**Procedure**

The application procedure is as follows:

- Online submission of Doctor of Pharmacy application through PharmCAS.
- A minimum of three letters of reference are required. Letters of reference are recommended from science professors and professionals in the field of pharmacy and must be submitted through PharmCAS. A letter of reference is recommended from a pastor, clergy, or spiritual advisor. Committee letters are accepted from Seventh-day Adventist colleges/universities only and will fulfill the requirement for recommendation letters.
- Written personal statement (answer all questions in two pages or less).
- Projected College Work form (if applicable).
- 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 or denied. All applicants are notified of the final committee decision. Admission into the School of Pharmacy continues until the class is filled.

**Acceptance process**

The accepted applicant is sent an email acceptance letter that includes a link to the online confirmation process and deadline. At this link, the accepted applicant can confirm and pay the \$500 class-holding fee electronically. The class-holding fee can also be paid by check for an additional processing fee of \$25. The class-holding fee is applied to the student's financial account at the time of matriculation. Class-holding



fees are nonrefundable. A follow-up acceptance letter is also mailed to the applicant's home address.

### International applicants

International applicants must have their transcripts reviewed by the following evaluation service prior to applying:

- 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 80 (Internet 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> (<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 the time PharmCAS begins verifying applications for our program (typically September) through the end of March.

### Admission deadline

The School of Pharmacy accepts applications through PharmCAS as soon as the PharmCAS application portal goes live (typically in July) through March (dates may vary; late applications are accepted by contacting the admissions office directly) for entry in August 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  
11139 Anderson Street  
Loma Linda, CA 92350

## Degree requirements

### First Year

		Units
RELT 706	Adventist Beliefs and Life	2
RXEE 580	Introductory Pharmacy Practice Experience—Community I	3
RXPC 561	Pharmaceutical Care I	4
RXPS 501	Pharmaceutical Calculations	2
RXPS 502	Pharmaceutics I	4
RXPS 503	Pharmaceutics II	3
RXPS 515	Pharmaceutics Laboratory I	0.5
RXPS 516	Pharmaceutics Laboratory II	0.5
RXPS 541	Foundations of Biomedical Science I	4
RXPS 542	Foundations of Biomedical Science II	4
RXR 500A	Professional Development	1.5
RXR 500B	Professional Development	1.5
RXSA 547	Pharmacy Law	2
RXSA 555	Epidemiology and Public Health	3
RXSA 650	Biostatistics	3
RXTH 560	Pharmacist-Guided Self Care	5
RXTH 570	Introduction to Disease Management	2.5

### Second Year

RELE 705	Ethics in Pharmacy Practice	3
RELR 709	Christian Perspectives on Death and Dying	2
RXDI 664	Drug Information and Literature Evaluation	3
RXEE 680	Introductory Pharmacy Practice Experience—Community II	2
RXEE 690	Introduction to Hospital Pharmacy Practice	2
RXPS 543	Foundations of Biomedical Science III	4
RXPS 544	Foundations of Biomedical Science IV	4
RXPS 610	Pharmacokinetics	4
RXR 600A	Professional Development	1.5
RXR 600B	Professional Development	1.5
RXSA 646	Principles of Management	3
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3
RXTH 671	Fluids and Electrolytes	2
RXTH 674	Renal and Respiratory Diseases	3.5
RXTH 683	Endocrine	3.5
RXTH 684	Cardiovascular I	3.5
RXTH 685	Cardiovascular II	3.5

### Third Year

RELE 706	Advanced Ethics in Pharmacy Practice	2
RELT 740	World Religions and Human Health	3
RXEE 790	Introduction to Clinical Pharmacy Practice	2
RXPC 761	Pharmacy Practice I	2
RXPC 762	Pharmacy Practice II	2
RXPC 763	Pharmacy Practice III	4
RXPS 545	Foundations of Biomedical Science V	4
RXR 700A <sup>2</sup>	Professional Development	1.5
RXR 700B <sup>2</sup>	Professional Development	1.5
RXSA 743	Health Systems, Reimbursement, and Pharmacoeconomics	3
RXTH 704	Special Populations	3
RXTH 771	Central Nervous System II	3.5
RXTH 773	Central Nervous System I	3.5
RXTH 774	Gastrointestinal Disorders	2.5
RXTH 775	Oncology	2.5
RXTH 776	Infectious Diseases	7
	Electives <sup>1</sup>	9

### Fourth Year

Six (6) of the following eight (8) APPE courses required:

RXEE 821	Advanced Pharmacy Practice Experience I	6
RXEE 822	Advanced Pharmacy Practice Experience II	6
RXEE 823	Advanced Pharmacy Practice Experience III	6
RXEE 824	Advanced Pharmacy Practice Experience IV	6
RXEE 825	Advanced Pharmacy Practice Experience V	6
RXEE 826	Advanced Pharmacy Practice Experience VI	6
RXEE 827	Advanced Pharmacy Practice Experience VII	6
RXEE 828	Advanced Pharmacy Practice Experience VIII	6

**Total Units: 186.5**

<sup>1</sup> 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.



<sup>2</sup> The combination of RXRX 700A Professional Development and RXRX 700B Professional Development fulfill the service learning requirement.

## Electives

RXPS 616	Neuropsychopharmacology	3
RXPS 630	Biochemical Aspects of the Obesity and Metabolic Syndrome	2
RXPS 710	Dietary Supplements	2
RXPS 719	Nutrition and Metabolic Syndrome	2
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 618	Writing for Publication	3
RXSA 748	Advanced Topics in Pharmacy Law	1
RXTH 529	Strategies for Achieving a Successful Career in Pharmacy	2
RXTH 605	Advanced Diabetes Management	2
RXTH 606	Antimicrobial Stewardship	1
RXTH 608	Viral Infections Evidence-Based Therapy	2
RXTH 609	Advanced Literature Evaluation	1
RXTH 610	Introduction to Pharmacy Informatics	1
RXTH 615	Nuclear Pharmacy Concepts	1
RXTH 619	Clinical Pharmacokinetic Dosing and Monitoring	3
RXTH 701	Pediatric Pharmacotherapy	2
RXTH 702	Advanced Topics in Neurology and Therapeutics	2
RXTH 703	Advanced Topics in Critical Care	2
RXTH 708	Mental Health in the Movies	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

## Normal time to complete the program

Four (4) years (12 academic quarters) – full-time enrollment required

# SCHOOL OF PUBLIC HEALTH

## Dean's welcome



In 1967, the Loma Linda University School of Public Health became the 13th accredited school of public health in the United States. From our inception, we understood the importance of teaching relevant public health from a faith-based perspective.

Whether online or on campus, our students reflect the culture and values of our school. Every quarter, when students share their practicum experiences during their poster presentations, I marvel at and appreciate the diversity of our students—a wealth of perspectives leading to relevant and innovative ideas, which students continue to display through their work in and out of the classroom.

I want to personally welcome and thank you for choosing to be a part of our legacy. We are proud of our more than 50 years of research and practice aimed at a vision of healthy people living in resilient communities, supported by equitable systems of health. Now, we stay true to our legacy through our mission of creating learning experiences for each generation.

I want you to know that we are listening to what you have to say. We want to hear your experiences in the classroom, on campus, in your practicums, and beyond. Our success is measured by the opportunities you have to succeed as a student, and later, as a professional. All of you

are on your way to becoming our alumni. Just as we are proud of you, we want you to be proud of us, your future alma mater.

As you browse through these pages, I encourage you to take advantage of the many ways you can reach your professional goals—mainly, a degree in public health that will enable you to serve individuals, communities, and systems of health in an increasingly global and connected community.

I would like to leave you with one final thought.

My mission in public health is underlined by a personal purpose. At this school of public health, a belief in a power greater than ourselves is what drives us. The actions of Jesus Christ inspire us, and that inspiration informs our work. It is the reason we choose to teach, research, practice, study, and play at Loma Linda University School of Public Health. We believe that everyone has value, and that value is connected to a greater purpose. During your time as a student, along with all the other exciting opportunities you'll experience, I encourage you to focus on your spiritual journey.

Welcome to the Loma Linda University School of Public Health.

Helen Hopp Marshak, Ph.D.  
Dean, School of Public Health

## Mission, vision, values, and goals

### Mission

We create learning experiences for each generation. We translate scientific discovery into action, improve health, spread hope, and promote wholeness from our neighborhood to yours.

### Vision

Healthy people living in resilient communities supported by equitable systems of health.

### Values

**Accountability**—*Our actions match our words.* We take ownership of our roles within the school. Our customers are best served when each of us works in a timely and responsive manner. We accept responsibility for our actions with transparency and respect for others. Always striving for the best outcomes, we are proactive and committed to working together for the common good. As stewards of our resources, accountability is fundamental to fulfilling our mission and living our core values every day.

**Relevance**—*We are listening.* Our students merit the most advanced teaching methods. Our communities deserve practical health solutions backed by research. For this reason, we are always asking, "Do we matter?" We know the answer to why we matter when we meet our customer's needs.

**Diversity**—*Eyes at every angle piece together a complete picture.* Diversity is not only about equality. It's about perspective—one that is intentional. We respect our differences and value openness. It's our belief that a wealth of perspectives leads to relevant and innovative ideas. Beyond informing thought, a culture of openness and respect embodies the spirit of our work in public health. Our geographic location allows us to capitalize on a wealth of viewpoints. We attribute our success to a wealth of experiences.

**Innovation**—*We kindle an informed sense of wonder.* We flourish under a mentality of continuous creativity and exploration of thought. We insist that, in order to make public health a success, we must work across

disciplines. Responsible innovation requires flexibility and evaluation. It ensures growth and determines the impact of new ideas. We are willing to take calculated risks and continue moving our best ideas forward. At every level of our operation, we are looking to make improvements—from improving how our students register for classes to defining new areas of study. Indeed, our innovation is one way we remain relevant.

**Wholeness—*We strive for progress over perfection.*** Wholeness is a perspective of the world that recognizes all facets of what it means to be human. It encompasses the integration of our spiritual, physical, and intellectual components as well as our families, work, and play. Despite its many facets, we continually consider our potential in relation to our reality. This translates into how we live each day—with humility, gratitude, and compassion. It keeps us grounded in what matters most.

**Faith-Inspired Excellence—*Belief in a power greater than ourselves is what drives us.*** As a school of public health founded in Christianity, the actions of Jesus Christ inspire us. Our faith informs our work. It's the reason we're at Loma Linda. We believe that everyone has value and that value is connected to a greater purpose. Wholeness is underlined by the relationship between health and faith. Behind our professional mission, we each have a personal purpose.

## 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 (non-tuition) 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 teaching and healing 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, 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 (CEPH), 1010 Wayne Avenue, Suite 220, Silver Spring, MD 20910; and is also a member of the Association of Schools and Programs of Public Health (ASPPH). CEPH may be contacted at 202/789-1050. [jconklin@ceph.org](mailto:jconklin@ceph.org).

## Master's degree programs

The Master of Public Health (M.P.H.), Master of Health-Care Administration (M.H.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-care administration, and nutrition.

## Online programs

The School of Public Health offers multiple degree programs in an online format 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 health geoinformatics, an online M.H.A. degree in health-care administration, and an online M.P.H. degree in three areas: epidemiology, population medicine, and health education and wellness coaching. The Dr.P.H. degree is also offered in a technology-mediated format in three areas: health education, health policy and leadership, and preventive care. 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 courses for M.P.H. degree programs 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.
- Receiving a diploma.

- 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 epidemiology, population medicine, and in health education and wellness coaching. Each is a two-year, full-time, online program with online orientation, community, and courses. Students begin their program in any of the four quarters of the academic year.

The program includes applied practice and integrative learning experiences.

### 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 their 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

Helen Hopp Marshak

### Executive associate dean

Dwight Barrett

### Associate dean, academic administration

Donna L. Gurule

### Associate dean, strategy

Karl McCleary

### Assistant dean, student support

Wendy M. Saravia-Genovez

### Core faculty, Center for Health Strategy and Innovation

Jim E. Banta, Jr.

Dwight Barrett

Juan Carlos Belliard

Ronald H. Mataya

Karl J. McCleary, Executive center director

Rhonda Spencer-Hwang

Seth Wiafe

### Core faculty, Center for Teaching and Learning

Camille Alaras-Whitfield

Theresa Ashby

Monita Baba-Djara

Hildemar Dos Santos

Leonard Gashugi

Albin Grohar

Donna Gurule, Executive center director

Michelle Hamilton

Daniel Handysides

R. Patti Herring

Celine Heskey

Walter Johnson

Ernesto Medina

Anna Nelson

Keiji Oda

Jisoo Oh

Michael Paalani

Huma Shah

David Shavlik

Gina Siapco

Pramil Singh

Karen Studer

Lori Wilber

### Core faculty, Center for Nutrition, Healthy Lifestyle, and Disease Prevention

Gary E. Fraser

Fayth Miles

Graciela O. Molina

Ifeanyi Nwachukwu

Michael Orlich

Sujatha Rajaram

Joan Sabaté, Executive center director

Ryan Sinclair

### **Other faculty**

Godwin Nwadiobia Aja

Yen Ang

Khaled Bahjri

Mohan Balagopalan

Dora J. Barilla

Yessenia T. Bartley

Richard Blanco

Jesus J. Cazares

Megan Daly

Barbara F. Dickinson

Harvey A. Elder

Linda H. Ferry

Elaine H. Fleming

Thelma Gamboa-Maldonado

Bryan L. Haddock

Susan L. Hall

Linda G. Halstead

Kenneth W. Hart

Richard H. Hart

Gordon Hewes

Liane H. Hewitt

Karen Jaceldo-Siegl

Wesley James

Christian W. Johnston

Robert I. Krieger

Susan K. Lewis

Harold J. Marlow, Jr.

Edward H. Martin

Olivia Moses

Makram A. Murad-Al-Shaikh

James O. Neergaard

Joyce B. Neergaard

Tricia Penniecook

Corwin Porter

Thomas J. Prendergast, Jr.

Brenda L. Rea

Susan E. Reische

Obed Rutebuka

Jeanne F. Silberstein

Bruce E. Smith

Larry L. Thomas

Calvin J. Thomsen

Serena Tonstad

Padma Uppala

Maryellen Westerberg

Jerald W. Whitehouse

Wesley S. Youngberg

### **Emeritus faculty**

P. William Dysinger

Ella H. Haddad

Joyce W. Hopp

Patricia K. Johnston

Jerry Lee

Naomi N. Modeste

## **Accreditation**

The school has maintained continuous accreditation since it was accredited at its inception in 1967 by the American Public Health Association. It is currently accredited by the Council on Education for Public Health (CEPH), 1010 Wayne Avenue, Suite 220, Silver Spring, MD 20910; and is also a member of the Association of Schools and Programs of Public Health (ASPPH). CEPH may be contacted at 202/789-1050. [jconklin@ceph.org](mailto:jconklin@ceph.org).

## **Centers**

### **Center for Health Strategy and Innovation**

Executive Director, Karl J. McCleary

Public health has gone through several eras where the focus of attention or paradigm has guided the actions of the field. At present, the concept of population health has emerged as a broader, more encompassing concept of public health that incorporates a range of factors that interact and affect the health of individuals, communities, and the population as a



whole. Unfortunately, these health outcomes frequently reflect inequities across the population. The Center for Health Strategy and Innovation seeks to identify and deploy successful strategies—evidence-based interventions, once adopted and implemented in practice and policy, help achieve desired improvements in population health. We accomplish this vital work through scholarship in dissemination and implementation science, which primarily focuses on organizations, communities, and systems.

#### Center for Teaching and Learning

Executive Director, Donna Gurule

The Center for Teaching and Learning houses the degree programs for the School of Public Health. It has the responsibilities of identifying ways to transform public health education, reporting assessment results for student learning outcomes, engaging and training faculty in pedagogy, course design, and faculty delivery, and providing excellent learning opportunities for our students utilizing technology and innovation. These are accomplished through scholarship in teaching and learning.

#### Center for Nutrition and Healthy Lifestyles

Executive Director, Joan Sabaté

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. These conditions are largely preventable through the adoption of healthy diets, physical activity, and avoidance of smoking. The center focuses on elucidating key dietary and other behavioral factors for the prevention of chronic diseases. Also, the center is compelled to focus effort on effective health education programs to improve diet quality and recover a healthy lifestyle in the US and globally.

Researchers at the center are leaders in the study of the health effects of plant foods, and the home of the world-renowned Adventist Health Study, providing the global community with strong evidence for healthy outcomes, and the prevention of chronic diseases when adopting a plant-based diet. Building on the Adventist Health Study's unique 50 plus years of research in lifestyle and plant-based diets, the center pioneers new knowledge and aims to develop innovative, interdisciplinary, translational, and interventional research directed at reducing the risk, morbidity and mortality of unhealthy diets, sedentary lifestyle, and tobacco use related chronic diseases in the US and globally.

## Admissions

Applicants must meet Loma Linda University (p. 23) and school-specific admissions requirements. The school's admissions office and program director ensure that applicants are qualified for the proposed curriculum and are capable of profiting from the educational experience offered by this University. This is accomplished by examining evidence of scholastic competence, moral, and ethical standards as well as significant character and personality qualities. Applicants are considered for admission only upon recommendation of the program in which study is desired. Those who meet the requirements as well as published deadlines may enroll.

In selecting students, the admissions office and program director look for evidence of self-discipline, personal integrity, and intellectual rigor. They also look for evidence that applicants 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 Office of Admissions, School of Public Health, Loma Linda University, 24951 North Circle Drive, Nichol Hall 1703, Loma Linda, CA 92350; or via email to [admissions.sph@llu.edu](mailto:admissions.sph@llu.edu).

## Application review process

All completed applications are first reviewed by the admissions office. Completed applications are then forwarded to the appropriate program director, who makes the final decision regarding acceptance.

## Procedure

The procedure for application and acceptance is given below.

1. *Application.* Submit a complete application and accompanying documents to Schools of Public Health Application Service (SOPHAS) at [www.sophas.org](http://www.sophas.org) (<http://www.sophas.org>).
2. *Transcripts.* Official transcripts from all postsecondary institutions attended must be sent to SOPHAS. If accepted, official transcripts will then need to be sent to Loma Linda University, Admissions Processing, 11139 Anderson Street, 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](http://llu.edu/central/apply/intltrans.page) (<http://www.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. They must be sent directly to LLU from the issuing institution. SOPHAS will only accept international transcripts submitted through World Education Services ([www.wes.org](http://www.wes.org)) (<http://www.wes.org>). Please note: Transcript copies included only in official WES evaluation reports will also satisfy the requirement for official transcripts.
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 [international applicants only], GRE or equivalent [e.g., MCAT]) as required by each program must be sent directly to SOPHAS 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 program review and, if necessary, the applicant may be invited for a personal interview.
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. Official transcripts will need to be submitted to Admissions Processing prior to registration for first term.
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 <http://www.llu.edu/students/financial-aid/>.



10. *Financial requirement.* Non-U.S. citizens are required by U.S. immigration regulation to secure sufficient funds and pay for their first year 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 deposits and payment plans.

## Admissions decisions

The Admissions Office and program director 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 are in one of two categories: regular admission or denial of admission.

## Admissions requirements

Specific requirements—which vary from program to program—should be determined based on the student's area of interest. Requirements for admission into degree programs are specified in the next section.

## Prerequisite courses

A grade of B or higher is required for all prerequisite courses. Prerequisites must be completed prior to acceptance.

## Entrance tests

When applying, scores from the Graduate Record Examination (GRE) or equivalent are required. 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.H.A. degree in health care administration are required to submit scores from the Graduate Management Admission Test (GMAT) or equivalent, such as the GRE. Application for the GMAT are available at <http://www.mba.com/us> (<http://www.mba.com/us/>).

## General regulations

Students 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 subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of general requirements applicable to all programs.

## University email accounts

The University accepts its moral, ethical, and legal responsibility for informing and reminding students of deadlines, regulations, and processes by issuing an email account to every student and communicating with students by email. It is the students' responsibility to read and respond to their email messages from the University.

## Learning environment

### Technology facilities

Technology-mediated and fully online courses are part of the school's curricula. Students should be prepared to use email, electronic library resources, online survey tools, course management tools, and other Internet communication tools while engaged in the School of Public Health learning environment. Through the online M.P.H., 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 the Parkland Building and the Centennial Complex.

## Academic policies

Students are responsible for informing themselves of and satisfactorily complying with policies and meeting regulations pertinent to registration, matriculation, and graduation.

## Advanced standing

Graduate students with previous coursework in areas of public health may apply for limited units of advanced standing. If approved by the program director and the assistant dean for academic and student support, degree requirements may be reduced with the expectation that the minimum unit requirement for the degree is met. 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 coursework.

## Religion coursework requirement

Registration and completion of graduate-level religion coursework is mandatory for completion of degree requirements. The religion requirement is designed to provide a spiritual dimension to the professional training of public health students, opportunities to further develop their skills in dealing with life's challenges, and 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, some programs may require religion course(s) from an approved list, using the course schedule published online at [llu.edu/central/ssweb](http://llu.edu/central/ssweb) (<http://www.llu.edu/central/ssweb/>). Master's degree students are required to complete a three-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 assistant dean for academic support for a maximum of 12 units of credit before official acceptance into the school.

## Convocation attendance

Attendance at weekly University at Worship 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. programs must complete a written petition to revise or make a change in their programs. This request will be reviewed by the relevant program committee for approval to add the major. After approval, the student must work with the assigned advisor in the secondary program to determine the course work and other requirements that must be fulfilled for the additional major. These requirements must be specified on the LLU OnTrack 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 specified units from the major core coursework 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 is recommended to not exceed four years. For a doctoral degree, the maximum time recommended for advancement to candidacy is three years, and five years for 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 two, one-year extensions for doctoral degrees. They may not exceed the University's maximum allowable time for degree completion of five years for a master's degree and seven years for a doctoral degree. These extensions are not automatic but must be initiated by student request and be approved by the program director and the assistant dean for academic support. 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 and the University *Student Handbook*, will be placed on academic probation. Students who are marginally above the degree requirements may be on academic warning. The number of units for subsequent registration may be restricted to a maximum determined by the school or program, for a student on academic probation or warning. 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 56 units (including up to nine units of transfer credit) and for a single Dr.P.H. degree is 54 units (plus applied practice experience and integrated learning experience) and for a single Ph.D. degree is 47 units (plus research/dissertation units). Advanced standing can be considered for previous coursework relative to these requirements, but does not alter the minimum unit requirements for the degree.

## 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 or internship (if required by the program).
- Completed the culminating experience.
- Completed an online exit survey (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 their grievance may request the Office of the Provost to conduct a review of the process used by the school in responding to their 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. To aid students in the planning process, master-level students should meet with the Academic Programs Office to map out their program through completion. The student should schedule a meeting with their academic advisor to review and approve the program plan before the end of their second term at the school. If changes are made to the plan at this point, it is the student's responsibility to communicate with their academic advisor and the Academic Programs

Office so that the plan is updated. Doctoral level students should schedule a meeting with their academic advisors to generate their program plans through completion, and file a copy with the Academic Programs Office, before the end of their second term at the School of Public Health. 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 non-degree 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 center directors 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.

## Assistantships

A limited number of teaching and research assistantships are available through the academic programs 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 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 2022 (subject to change by trustee action):

### Tuition

\$913	Master's students per unit: credit (on campus and online)
\$457	Master's students per unit: audit (on campus and online)
\$995	Doctoral students per unit: credit (on campus or online)
\$350	Certificate students per unit: credit (on campus or online)

### Special tuition charges

\$913	Field practicum and internship (100 hours/2units)
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### Enrollment fee

\$955	Enrollment fee
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### Special charges

\$50	Application (nonrefundable)
\$100	Acceptance deposit for master's degree students (nonrefundable)
\$250	Acceptance deposit for doctoral degree students (nonrefundable)
\$100	Late payment fee
\$25	Returned check fee
\$200	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

Advance refundable deposit along with first quarter of tuition (minimum 8 units) is required.

\$1,000	Master's student
\$1,000	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 course, the student will receive a 90 percent refund. Because refunds are based on a percentage of the course 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 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 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.

The HULDA CROOKS AWARD provides funds to (a) students who personify a personal and professional commitment to health and fitness. This award encourages 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, and (b) student initiated research and public health practice grants.

The COMMUNITY OUTREACH PROJECT SCHOLARSHIP award is given to students who have gone over and beyond working in the San Bernardino Community through field, research and/or practical experiences. They are expected to have a high academic merit and are dedicated to the service of others.

The MERRIT C HORNING AWARD FOR OUTSTANDING RESEARCH is a recognition-based award emphasizes the good work our student researchers are doing at the School of Public Health at Loma Linda. Dr. Merritt C. Horning, an alumnus of Loma Linda University, aggressively promoted research throughout his career. This award recognizes his lifelong passion for research.

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 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 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 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.

The SELMA ANDREWS SCHOLARSHIP (a) competitive grants may be available to help defray students' costs of traveling to professional or scholarly conferences at which they have been invited to participate formally in the program. (b) scholarship funds are available for registered SPH students in good standing who have completed at least 12 units in their degree programs.

The HAMMOND - HARDINGE STUDENT ASSISTANCE FUND provides assistance to students enrolled in the School who experience a financial "shortfall" or other financial emergency.

The CALLICOT STUDENT SUPPORT FUND provides financial support to Seventh-day Adventist students enrolled in the school.

The DRS. WILLIAM G. AND MARGARET S. HAFNER ENDOWMENT provides scholarship assistance to students enrolled in the school. Recipients shall be full-time graduate students in good academic standing with demonstrable financial need.

The INTERNATIONAL STUDENT ASSISTANCE award provides financial support to full-time international students enrolled in the School. Special consideration shall be given to students expected to return to their home countries upon completion of their studies.

The PRESIDENT'S CIRCLE SCHOLARSHIP FUND FOR HISPANIC STUDENTS this award is to provide scholarship assistance to Hispanic Students.

The SHOLARSHIP ENDOWMENT FOR BLACK STUDENTS this award is to provide scholarship assistance to Black Students.

The BOB & RUTH HERVIG SCHOOL OF PUBLIC HEALTH SCHOLARSHIP ENDOWNMENT FUND provides scholarship to students enrolled in the School who are members of the Seventh-Day Adventist Church or who exhibit a Christian lifestyle.

The DR. JAMES L. WELCH SCHOLARSHIP FUND is available to students enrolled in the School with preferential consideration is to be given to students interested in education, research re treatment related to Acquired Immune Deficiency Syndrome.

The OEP CLASS OF 1978 FUND is available to students enrolled in the School with special priority given to Canadian citizens.

The SPH STOUT FAMILY SCHOLARSHIP FUND given annually to a student enrolled in the School. The student must be in good and regular standing, have a financial need as determined by the Student Financial Aid Office of the university and demonstrated desire to serve people and endeavor to make man whole.

THE SPH ENVIRONMENTAL & OCCUPATIONAL HEALTH SCHOLARSHIP the award is given to students who engage in Environmental and Occupational Health research.

The WIESSEMAN DOCTORAL AWARD the award is given annually to an outstanding student enrolled in the School's Doctor of Public Health Program. Preference is given to Seventh-day Adventist students enrolled in the preventive care program who are U.S. citizens, who have demonstrated financial need and who have maintained a G.P.A. of 3.2 or above.

The COMMUNITY BENEFIT SCHOLARSHIP is available to students born and raised in San Bernardino and Riverside County who are from underrepresented groups, including first generation students, who are committed to serving our region.

The DELTA OMEGA HONOR SOCIETY

Membership in Delta Omega#reflects the dedication of an individual to increasing the quality of the field, as well as to the protection and advancement of the health of all people. Chapters may induct up to 20% of the graduating student body. All inductees must be, at minimum, in the upper 25% of their class academically and meet the chapter criteria/goals.

*Program and area-specific scholarships and awards may be viewed on the SPH website.*

## Programs

### Master's degrees

- Epidemiology—M.P.H. (p. 398) (traditional, online)
- Global Health—M.P.H. (p. 399)
- Health-Care Administration—M.H.A. (p. 401) (traditional, online)



- Health Education and Wellness Coaching—M.P.H. (p. 402) (traditional, online)
- Nutrition with coordinated program in dietetics – M.P.H. (p. 405)
- Plant-Based Nutrition—M.S. (p. 406) (online)
- Population Medicine—M.P.H. (p. 407) (traditional, online)

## Doctoral degrees

- Epidemiology— Ph.D. (p. 410)
- Health Education— Dr.P.H. (p. 411) (online)
- Health Policy and Leadership—Dr.P.H. (p. 412) (traditional, online)
- Nutrition—Ph.D. (p. 413)
- Preventive Care—Dr.P.H. (p. 415) (online)

## Cognate Areas <sup>1</sup>

### Health-Care Administration

HADM 534	Health-Care Law	3
HADM 555	Health-Care Delivery Systems	3
HADM 601	Quantitative Methods in Health-Care Management	3
HADM 605	Health-Care Quality Management	3

**Total Units** 12

### Health Geoinformatics

HGIS 522	Principles of Geographic Information Systems and Science	2
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

**Total Units** 12

### Maternal Child Health

MNCH 520	Maternal/Child Health: Policy and Programs	3
MNCH 567	Reproductive Health	3
MNCH 614	Seminar in Maternal and Child Health Practice	3
NUTR 534	Maternal and Child Nutrition	3

**Total Units** 12

<sup>1</sup> Availability subject to demand.

## Certificates

The School of Public Health offers certificates in various programs to meet the needs of qualified individuals who seek to develop competencies in specialties in public health. Certificate program instruction is primarily provided by regular School of Public Health faculty members during regular quarter terms. Students are responsible for following required registration procedures during regularly scheduled time periods. A minimum of 12 units, plus one (1) unit of religion is required for a certificate. Units may not be shared with a concurrent degree program.

### General certificate information Coursework

Course sessions are conducted during regular term sessions. Certificate courses in the School of Public Health carry the same credit units as courses applicable toward degree programs. Certificate courses are

taught on a quarter-term system, although selected courses may be offered by special arrangement.

### Religion course requirement

Registration and completion of a one-unit, graduate-level religion course is mandatory for each certificate program. Religion courses must have an REL\_ prefix and be offered through Loma Linda University. The religion requirement provides a spiritual dimension to the professional training of public health students, as well as an opportunity to further develop their skills in dealing with life's challenges and opportunities for personal spiritual growth. Course units will not be transferred from other universities or institutions, nor is waiving this requirement an option, regardless of educational background. A traditional letter grade is required.

### General certificate requirements

All certificate program applicants must meet the general admissions requirements (p. 23) found in this catalog. Coursework is graduate level; therefore, students must demonstrate eligibility for application to a graduate-level program.

### Course format

Courses are generally taught in the same format as regularly scheduled on-campus courses. However, Web-based courses and/or intensive format courses may also be utilized. These courses are tailored to the adult learner, with clear application and examples from the public health professional world, and represent the same course requirements and credit units as those applicable to graduate degree programs.

### Grade point average

A grade point average of 3.0 (B) must be maintained.

## Programs

- Health-Care Administration – Certificate (p. 394)
- Health Geoinformatics – Certificate (p. 395)
- Health and Wellness Coaching – Certificate (p. 395)
- Maternal and Child Health – Certificate (p. 396)

## Health-Care Administration – Certificate

### Program director

Huma Shah

With the development of the Affordable Care Act and the ever-changing world of health care, greater need exists for people at all levels of management who have a broad understanding of how health-care delivery functions. This certificate will add a breadth of knowledge and key skills to persons with an interest in health-care administration, equipping them with an edge to fill health-care leadership roles.

### Learner outcomes

By the end of the program, graduates will be able to:

1. Demonstrate an understanding of the health-care system in the United States.
2. Apply management skills to health-care settings, ensuring quality and efficient operations utilizing various theories and models.

3. Assess health system gaps and develop effective solutions which provide a competitive advantage through critical analysis of organizational competencies, capabilities, and resources.

and assessment of environmental hazards exposure, health planning and policy, population health, health education and communication, and analysis of access to health services.

6. Implement and manage health GIS projects in government, nongovernment, and community settings.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, the applicant must have a:

- Bachelor's degree from an accredited college or university
- G.P.A. of 3.0

## Program requirements

### Required

HADM 534	Health-Care Law	3
HADM 555	Health-Care Delivery Systems	3
HADM 601	Quantitative Methods in Health-Care Management	3
HADM 605	Health-Care Quality Management	3
RELT 518	Adventist Heritage and Health (or REL_)	1

**Total Units** 13

### Normal time to complete the program

One (1) year – based on less than half-time enrollment

## Health Geoinformatics – Certificate

### Program director

Seth Wiafe

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 report, "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.

## Program learning outcomes

By the end of the program, students will be able to:

1. Apply principles of geospatial information science to health research and practice.
2. Use state-of-the-art GIS software and techniques for accessing the spatially defined health information for building 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

## 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.

## Admissions

In addition to Loma Linda University (p. 23) admission requirements, the applicant must have a:

- Bachelor's degree from an accredited college or university
- G.P.A. of 3.0

## Program requirements

### Required

HGIS 522	Principles of Geographic Information Systems and Science	2
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
RELT 518	Adventist Heritage and Health (or REL_)	1

**Total Units** 13

### Normal time to complete the program

One (1) year – based on less than full-time enrollment

## Health and Wellness Coaching – Certificate

### Program director

Anna Nelson

The Health and Wellness Coaching Certificate is designed for any professional or lay person interested in learning how to empower others to take action to improve their health. The online curriculum will prepare students to guide and support individuals as they work toward reaching their behavior change goals.



This three-course program includes topics in health and wellness, coaching structure, coaching process, and ethics/legal considerations. The certificate can be completed over two quarters (spring and summer). While the program is delivered fully online, two of the courses (one per quarter) require weekly synchronous participation by the students using a zoom platform.

The nine units of credit earned in this certificate may be used toward an M.P.H. degree in health education and wellness coaching. In addition to the certificate, students will be individually responsible to complete a minimum of 50 health and wellness coaching sessions outside of the program curriculum to satisfy the certification exam eligibility requirements.

## School certificate

Students register for the certificate program courses through the Office of University Records, but the certificate itself is issued by the School of Public Health—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 School of Public Health.

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.

## Approval

The program is approved by the National Board for Health and Wellness Coaching (NBHWC), P.O. Box 16307, San Diego, CA 92176; telephone, 866/535-7929; website: <https://nbhwc.org/>. (<https://nbhwc.org/>)

## NBHWC Exam Eligibility

Upon successfully completing the certificate program, participants receive a certificate in wellness coaching. Students are responsible for maintaining NBHWC coaching logs after finishing the program. Completion of the certificate program and the written log of 50 health and wellness coaching sessions will make graduates eligible to take the certifying examination offered by the National Board for Health and Wellness Coaching (NBHWC), P.O. Box 16307, San Diego, CA 92176; telephone, 866/535-7929; website: <https://nbhwc.org/>

## Admissions

The LLU application is available online and can be found at [llu.edu/apply](http://www.llu.edu/apply) (<http://www.llu.edu/apply/>).

Required:

- Bachelor's degree from an accredited college or university.
- Official transcript documenting awarded degree. To be official, the transcript must be sent directly from the issuing institution to Loma Linda University.

## Program requirements

Required		
HPRO 526	Lifestyle Diseases and Risk Reduction	3
HPRO 541	Wellness Coaching I	3
HPRO 542	Wellness Coaching II	3

## Normal time to complete the program

Two (2) quarters — based on less than full-time enrollment

## Maternal and Child Health — Certificate

Closed to admissions for the 2022-2023 academic year.

### 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

By the end of the 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.

## Indicators of 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

This certificate program, primarily designed for M.P.H. degree or doctoral degree students whose focus is not maternal and child health, 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		
MNCH 520	Maternal/Child Health: Policy and Programs	3
MNCH 567	Reproductive Health	3
MNCH 614	Seminar in Maternal and Child Health Practice	3
NUTR 534	Maternal and Child Nutrition	3
RELT 518	Adventist Heritage and Health	1
<b>Total Units</b>		<b>13</b>

## Normal time to complete the program

One (1) year — based on less than full-time enrollment

## Master's degrees

The Master of Public Health (M.P.H.), Master of Health-Care Administration (M.H.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-care administration, and nutrition.

- Epidemiology – M.P.H. (p. 398) (traditional, online)
- Global Health – M.P.H. (p. 399)
- Health-Care Administration – M.H.A. (p. 401) (traditional, online)
- Health Education and Wellness Coaching – M.P.H. (p. 402) (traditional, online), comparison (p. 404)
- Nutrition with coordinated program in dietetics – M.P.H. (p. 405)
- Plant-Based Nutrition – M.S. (p. 406) (online)
- Population Medicine – M.P.H. (p. 407) (traditional, online)

## Admissions

The admissions requirements described below are in addition to the University admissions requirements (p. 23) and program requirements. 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. Other scores are acceptable. G.R.E. may be waived for students with a cumulative G.P.A. of 3.2 or higher. Please contact the admissions office for details.
- Applicant may be interviewed by program director and/or faculty.
- 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. or equivalent scores, and interview (if necessary). **Satisfying minimum requirements does not guarantee admission.**

## M.H.A.

### Master of Health-Care Administration

The program leading to the Master of Health-Care Administration (M.H.A.) degree is designed to develop the management and leadership skills of those involved in the public and private health-care industries.

The Master of Health-Care Administration (M.H.A.) degree provides a broad understanding of health-care management and hands-on experience in applying learned principles. The M.H.A. degree is designed for those whose professional objective is a career in health-care management. The field practicum period provides experience in a health-care organization. Graduates are prepared for careers at administrative levels in health-care organizations—including hospitals, public agencies, health-care networks, group practices, long-term care, and managed care.

## 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 epidemiology, global health, health education and wellness coaching, nutrition, and population medicine. Second major concentrations can be added in addition to the primary major.

### Public health core requirements

All M.P.H. students are expected to develop skills and knowledge foundational to public health. This is accomplished by completing the following integrated, interdisciplinary public health core courses:

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle	5
PCOR 503	Public Health and Health Systems	5

### Applied practice experience

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 public health: physical, mental, spiritual, intellectual, and environmental. Part of this training occurs during the applied practice (AP) experience—which may be completed as a field practicum, applied research, or course-based activities, depending on the major. The applied 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.

### Integrative learning experience

The Integrative Learning Experience (ILE) gives the students an opportunity to demonstrate proficiency in the professional competencies required of public health professionals. This degree requirement occurs at the end of the of the program and is designed to enhance the student's professional knowledge and skills by developing a professional product and demonstrating proficiency in the specific program competencies. This process involves collaboration with and mentoring by the program faculty and the advisor. In consultation with the advisor and program faculty, the student selects the program learning outcomes for which they will be assessed to determine if they have met the degree requirements for synthesis and application of learning. This product may include a practice-based project, essay-based comprehensive exam, capstone course or another experience that culminates with a high-quality written deliverable for assessment purposes.

### E-Portfolios

In addition to the AP Experience and ILE, some programs may require students to complete a professional portfolio.

### 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. Each residency training program is accredited by the Accreditation Council for Graduate Medical Education (ACGME) and prepare residents for certification by the American Board of

Preventive Medicine (ABPM). Both preventive and occupational medicine 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: <https://llu.org/prevmedresidency> (<https://llu.org/prevmedresidency/>).

### Preventive medicine residency

The three-year program consists of an internship year followed by two years of integrated academic and practicum experiences. One internship position is offered through the National Residency Matching Program (NRMP) each year. Additional positions are offered for PGY-2 applicants, if they have already completed an internship 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 various training sites. Practice sites include Loma Linda University, the Loma Linda Veterans Affairs Healthcare System, Kaiser Permanente, Riverside 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 completes a scholarly activity on a topic of choice during their residency.

### 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. The remaining years include both family and preventive medicine rotations and M.P.H. degree coursework. Practice sites include Loma Linda University, SAC Healthcare System, the Loma Linda Veterans Affairs Healthcare System, Kaiser Permanente, San Bernardino County Department of Public Health, and the Inland Empire Health Plan.

### Occupational medicine residency

The three-year program consists of an internship year followed by two years of integrated academic and practicum experiences. One internship position is offered through the National Residency Matching Program (NRMP) each year. Additional positions are offered for PGY-2 applicants, if they have already completed an internship year.

The program emphasizes the clinical and applied aspects of occupational and environmental medicine. 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 various training sites. The major clinical site is the Occupational Medicine Clinic at Loma Linda University. This residency program focuses on the health of individuals and groups in relationship to work, hazards in the workplace, and environmental issues. The program emphasizes 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 at the School of Public Health, each resident completes a scholarly activity on a topic of choice during their residency.

## M.S.

### Master of Science

The Master of Science (M.S.) degree in plant-based nutrition is offered to meet the specific needs of registered dietitians and other health-care professionals who desire evidence-based training in plant based nutrition and serves as a bridge to the Ph.D. in nutrition program offered by SPH. This Master of Science degree is offered online only.

More information about these areas of specialization is found in the Nutrition Program section of this CATALOG.

## Epidemiology – M.P.H.

### Program director

David Shavlik

The M.P.H. degree in epidemiology is designed to give theoretical and practical training in how to study and control factors that influence health-related problems. This degree prepares students to work in federal, state, and local health departments/agencies, academic and research institutions, health maintenance organizations, and hospitals.

Coursework for the epidemiology program may be pursued in the following formats:

- A traditional, on-campus program (combination of on-campus and online coursework)
- An online program (combination of synchronous and asynchronous coursework)

## Program learning outcomes

By the end of the program, the graduate should be able to:

- Assist in design and implementation of epidemiologic studies.
- Analyze epidemiologic data using appropriate statistical methods and software.
- Report epidemiologic research results through oral and written reports.
- Critically review relevant health literature.
- Use and interpret principles of public health screening and surveillance programs.

## Educational effectiveness indicators

Program learning outcomes as evidenced by:

- Signature assignments linked to course and noncourse requirements
- Field practicum report
- Culminating experience (<http://llucatalog.llu.edu/public-health/masters-degrees/#mphtext>)

## Prerequisite

In addition to the entrance requirements for all M.P.H. degrees (<http://llucatalog.llu.edu/public-health/masters-degrees/#admissionstext>), applicants to the M.P.H. degree program in epidemiology must have taken:

- College algebra or equivalent (calculus preferred)
- Three semester or four quarter undergraduate courses in the biological sciences

## Program requirements

### Public health core

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle <sup>3</sup>	5
PCOR 503	Public Health and Health Systems	5

### Major

EPDM 509	Principles of Epidemiology	3
EPDM 510	Epidemiologic Methods I	3
EPDM 511	Epidemiologic Methods II	3
EPDM 512	Epidemiologic Methods III	3
EPDM 520	Data Collection Methods	3
EPDM 530	Disease Distributions and Determinants I	3
EPDM 531	Disease Distributions and Determinants II	3
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 521	Biostatistics I	4
STAT 522	Biostatistics II	4
STAT 548	Analytical Applications of SAS and R	2

### Religion

RELE 534	Ethical Issues in Public Health (or REL_)	3
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### Cognates/Electives

Choose from defined cognates or select from electives (reduced to 3 units for clinical doctorates) <sup>1, 2</sup>	9
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### Research project

EPDM 699A	Applied Research	1
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**Total Units** **62**

### Applied practice experience

Practicum units are in addition to the minimum didactic units required for the degree

PHCJ 798B	Public Health Practicum (200 hours)	4
or PHCJ 798A	Public Health Practicum	

<sup>1</sup> Total units reduced to 56 units for clinical doctorates.

<sup>2</sup> Chosen in consultation with advisor

<sup>3</sup> Fulfills service learning requirement

### EPDM/STAT forums

During their program, students are required to attend a minimum of fifteen forums in epidemiology, biostatistics, and/or in the Adventist Health Study.

### Integrative learning experience

See standard integrative learning experience requirements (p. 397).\*

\* For two of the three options (Demonstrating Proficiency and Service to the Profession), students in the Epidemiology MPH program will be required to deliver an oral presentation and prepare a manuscript.

### Normal time to complete the program

1.75 years (seven [7] academic quarters) — based on full-time enrollment; part time permitted

## Global Health – M.P.H.

### Program director

Monita Baba Djara

## Program description

The M.P.H. degree earned in the Global Health Program prepares graduates to practice public health with a transformational development worldview—seeking positive change in the whole of human life materially, physically, socially, psychologically, and spiritually. The M.P.H. degree in global health prepares graduates with technical competence and cross-cultural skills to create and manage sustainable, equitable health system services and community development programs in diverse settings and populations worldwide.

Graduates of the global health program work in nongovernmental, civil-society, faith-based, and community-based organizations; county and state health departments; private foundations; public health enterprises; and public health practice organizations. Graduates also find positions in the United Nations, international, and multilateral organizations, such as the World Health Organization, UNICEF, and the World Bank, as well as U.S. government organizations like the Centers for Disease Control and Prevention (CDC) and the United States Agency for International Development (USAID). Those with prior field experience and additional language/proficiency (e.g., French or Spanish) are generally more competitive for these positions.

The curriculum is organized around principles of:

- A Christian, faith-based worldview that respects and includes all faiths, as faith plays a major role in how communities address adversity and make decisions about health.
- Transformational development and the social, cultural, economic, and environmental determinants of health.
- Social justice, human rights, and equity—especially for marginalized and vulnerable populations.
- Support for and empowerment of communities, families, and individuals in their efforts to attain optimal health and development.

The program is designed to build capacity in global health through:

- A series of knowledge-based courses leading to a broad, comprehensive understanding of the major concepts and issues in global health as well as the structure and governance of global health systems/services/programs.
- A series of skills-based courses building competencies in program planning, management, and evaluation—as well as project-proposal preparation, partnership relationships and communication, teamwork, collection and use of community/health system data, quantitative and qualitative research, and advocacy.
- Field-based integrated leadership experience through community and health system partnerships and projects in the local and global environments.

After completing the public health and global health core requirements, students have the option of two focus areas to complete their M.P.H. program:

1. Community Health Equity and Development.
2. Health Systems and Services.

## 4+1 dual degree with PUC

The 4+1 is a dual-degree program with Pacific Union College (PUC). During the senior year of the B.S. degree in global health at PUC, students

will complete the 15-unit public health core course sequence required for the M.P.H. in global health. These courses will be taught online by LLU faculty. In addition to earning 15 units of graduate credit at LLU, students will also receive 15 units of undergraduate credit awarded by PUC.

Interested students with a 3.0 GPA or higher will be eligible to apply during winter quarter of their junior year at PUC by following Loma Linda University's admission process. Applicants must be accepted into the SPH prior to enrolling in the public health core courses taught by LLU. Students must maintain a minimum G.P.A. of 3.0 and complete the B.S. degree at PUC before continuing the M.P.H. program beyond the 15 units of core courses.

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Assess global burden of disease and health status of populations.
2. Analyze the organization, structure, function, and equity of health systems in high, medium, and low-income countries.
3. Formulate population health policies, programs, and services that consider the diversity of populations and individuals.
4. Develop collaborative partnerships with community and stakeholders to equitably improve the health of communities.
5. Apply concepts and principles of cultural humility when leading and working in teams.

## Educational effectiveness indicators

Program learner outcomes are evidenced by:

- Signature assignments linked to course and non-course requirements.
- Applied practice deliverables.
- Integrated learning experience (p. 397).

## Prerequisite

See entrance requirements for all M.P.H. degrees (p. 397).

## Program requirements

### Public health core

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle <sup>3</sup>	5
PCOR 503	Public Health and Health Systems	5

### Major

GLBH 517	Cultural Issues in Health Care	3
GLBH 564	Fundamentals of Global Health and Development I	2
GLBH 566	Fundamentals of Global Health and Development II	2
GLBH 568	Fundamentals of Global Health and Development III	2
GLBH 605	Seminar in Global Health	1
STAT 515	Grant- and Contract-Proposal Writing	3

### Focus area<sup>1</sup>

#### Community health equity and development

GLBH 545	Integrated Community Development (Community health equity and development) <sup>4</sup>	
GLBH 565	Interventions in Community Health and Development I	

GLBH 567	Interventions in Community Health and Development II	
GLBH 569	Interventions in Community Health and Development III	
<b>Health systems and services</b>		
GLBH 575	Administration and Leadership of Health Systems and Services in Low Resource Settings I	
GLBH 576	Administration and Leadership of Health Systems and Services in Low Resource Settings II	
GLBH 577	Administration and Leadership of Health Systems and Services in Low Resource Settings III	
GLBH 578	Integrated Health Systems and Services	
<b>Religion</b>		
RELE 534	Ethical Issues in Public Health (or REL_)	3
<b>Cognates/Electives<sup>2</sup></b>		<b>12</b>
<b>Total Units</b>		<b>56</b>

### Applied practice experience

Practicum units are in addition to the minimum graduate units required for the degree

PHCJ 798A	Public Health Practicum (Minimum of 4 units/200 clock hours)	4
or PHCJ 798B	Public Health Practicum	

<sup>1</sup> Select one area of focus. All courses outlined under focus must be completed.

<sup>2</sup> Choose from defined cognates (p. 393) or select from electives, in consultation with advisor.

<sup>3</sup> Fulfills service learning requirement

<sup>4</sup> This field-based course involves international travel and fulfillment of required prerequisites. A separate laboratory fee must be paid at the time of registration for this course (subject to change, if needed).

## Integrative learning experience

See standard integrative learning experience requirements (p. 397).

## Normal time to complete the program

Two (2) years (six [6] academic quarters) – based on full-time enrollment; part time permitted

Students in the 4+1 program with PUC can complete the M.P.H. in 1.3 years (four [4] academic quarters – based on full-time enrollment; part time permitted).



# Health-Care Administration – M.H.A.

## Program director

Huma Shah

The School of Public Health offers a Master of Health-Care Administration (M.H.A.) degree, which provides students with a broad understanding of health-care management in line with appropriate and relevant industry-leading competencies. In addition, students 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 the 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 of professional work experience in health-care administration are eligible to apply for a waiver of up to 9 units.

## Program formats

Coursework for the health-care administration program may be pursued in the following formats:

- A traditional, on-campus program (combination of on-campus and online coursework).
- An online program (combination of synchronous and asynchronous coursework).

## Program learning outcomes

Students will gain health-care management competencies across these five domains (knowledge of the health-care environment; communications and interpersonal effectiveness; critical thinking, analysis and problem-solving; management and leadership; professionalism and ethics). By the end of the program, the graduate should be able to:

1. Population Health: utilize population health frameworks that will improve health for groups, communities and populations.
2. Communication: apply effective oral and written communication to influence decision-making within a health-care context.
3. Innovation: apply multiple methods and sources to seek comprehensive information, generate creative new solutions—or adapt previous solutions—and apply structured decision-making techniques and tools to address health-care challenges.
4. Strategic and Business Planning: identify strategic priorities of a health-care organization and develop action plans and evaluation metrics to create and maintain a competitive advantage by analyzing external/internal trends, data, finances, and organizational resources.
5. Faith and Ethics: evaluate managerial and leadership challenges in health care using an ethical, faith-based framework..

## Vision statement

The M.H.A. degree program seeks global recognition as a provider of excellent, quality health-care management education with an emphasis on service that uses a values-based approach to confront health-care

issues. Students are prepared to confront and solve complex problems in health-care delivery using evidence-based analytics, theory, and practice.

## Mission statement

The mission of the M.H.A. degree program is to provide quality education to new and mid-career professionals locally, nationally, and globally who are interested in health-care management. The program fully integrates a health-care perspective in all coursework, which is guided by theoretical frameworks, scholarship, and informed practice. Faculty apply holistic Christian principles as well as seek to develop conscientious and ethical health-care leaders who will integrate innovative solutions to health-care challenges.

## Educational effectiveness

Educational effectiveness will be determined through papers, presentations, experiential exercises, tests, field practicum projects/papers, and an exit interview. A competency inventory survey will be conducted two times during the student's program of study at Loma Linda University—upon starting the M.H.A. degree program and upon completion of all classes and the practicum experience.

## Educational effectiveness indicators

Program learner outcomes are evidenced by:

- Signature assignments linked to course requirements and program learning outcomes.
- A field practicum report.
- A culminating experience.

## Prerequisites

The following undergraduate-level courses are required and may be taken as a MOOC or other online course where a certificate is received.

- Micro-economics (one course)
- Accounting (one course)

## Health-care administration practicum

The M.H.A. includes supervised practical opportunities for emerging and experienced administrative health-care professionals. Students from this program with little-to-no health-care leadership experience will engage in an 800-hour practicum in a health-care setting—such as a hospital, long-term care facility, community clinic, or other health-care related organization. Students who enter the program with five years or more of health-care leadership experience will complete a project based on practical experience, in which they will work with a health-care organization and assist or lead a current project in consultation with the faculty and the organization's leaders.

The purpose of the practical experience is to provide students with the opportunity to apply academic learning in an interdisciplinary environment, and to integrate public health concepts and skills from their program of study. The depth and breadth of the experience varies by site location and project availability. This is done in the context of carefully planned and implemented field-based, real-world experience. The practical experience is participatory in nature—rather than observational—and is designed to address students' program competencies and career interests, while also making contributions to the site or organization where they are placed.



While the assigned hours will be spent at the organization, the student's work will be guided and evaluated through a course they have registered for on Canvas/LiveText. The number of units for which a student will need to register will vary according to the hours or projects the student will complete each quarter. The practicum coordinator and/or program director will work closely with students and their mentors in monitoring student progress. Students will present their experiences to the program faculty and site supervisors in final papers and oral presentations.

Students who are accepted into the program with five years or more of health-care management experience will complete a consulting project focusing on identified weaknesses within the program learning outcomes. These students will work with the program faculty to meet these requirements in a directed study course.

Students who are accepted into the program from a clinical background, or who are enrolled in a professional clinical program concurrent with enrollment in the M.H.A. degree program, are required to complete 400 hours in their practicum—with their clinical education being counted as exposure to practical and professional development.

## Individuals who may benefit from the program

Those interested in management and administrative careers in health-service organizations—including hospitals, health plans, physician groups and dental practices, and long-term, managed-care settings, among others—may benefit from the program.

## Program requirements

### Public health core

HADM 515	Managerial Epidemiology	3
PHCJ 606	Public Health Fundamentals	4

### Major

HADM 506	Fundamentals of Health-Care Finance	3
HADM 508	Accounting Fundamentals in Health-Care Management	4
HADM 514	Health-Care Economics	3
HADM 528	Organizational Behavior in Health Care	3
HADM 529	Applied Leadership Concepts in Health-Care Organizations <sup>1</sup>	3
HADM 534	Health-Care Law	3
HADM 555	Health-Care Delivery Systems	3
HADM 559	Health-Care Marketing	3
HADM 564	Health-Care Finance	3
HADM 574	Managing Human Resources in Health-Care Organizations	3
HADM 575	Management Information Systems in Health Care	3
HADM 601	Quantitative Methods in Health-Care Management	3
HADM 604	Health Systems Strategic Planning	3
HADM 605	Health-Care Quality Management	3
HADM 607	Orientation to Professionalism Seminar	1
HADM 690	Health-Care Management Capstone	3

### Religion

RELE 535	Ethical Issues in Health-Care Management	3
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<b>Electives<sup>2</sup></b>		<b>3</b>
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<b>Total Units</b>		<b>60</b>
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### Practical experience

Practicum units are in addition to the minimum didactic units required for the degree	16
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HADM 724A	Health-Care Administration Practicum (Total of 16 units/800 hours) <sup>3</sup>	2-8
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or HADM 724B Health-Care Administration Practicum  
or HADM 724C Health-Care Administration Practicum  
or HADM 724D Health-Care Administration Practicum

<sup>1</sup> Fulfills service learning requirement.

<sup>2</sup> Choose a course in consultation with advisor

<sup>3</sup> May substitute with HADM 594 Applied Health-Care Management Project for 2-4 units per approval of practicum director.

### Noncourse requirements

*Culminating experience.* M.H.A. degree students are required to produce a final report at the end of the practicum 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.H.A. degree program.

*Colloquia.* Participation in 10 hours of noncredit colloquia designed to acquaint students with various aspects of the health-care industry is required of all students.

### Normal time to complete the program

Two (2) years (seven [7] academic quarters) – based on full-time enrollment; part time permitted

## Health Education and Wellness Coaching – M.P.H.

### Program director

Anna Nelson

### Program formats

Coursework for the Health Education and Wellness Coaching Program may be pursued in the following formats:

- A traditional, on-campus program (combination of on-campus and online coursework).
- An online program (combination of synchronous and asynchronous coursework).

The program leading to the M.P.H. degree in health education and wellness coaching allows students to achieve the competencies necessary to promote health and wellness to individuals and communities. The integration of health education and wellness coaching courses will provide students with a combination of cutting-edge skills in health and wellness, health education, health coaching, and whole-person care.

The health education component of the program 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.

Along with the knowledge of lifestyle-related diseases, health, nutrition, and fitness, the wellness coaching component of the curriculum delivers motivational and behavioral skills needed to enable graduates to become a part of a rapidly growing field for helping individuals achieve optimal wellness.

Students who complete the curriculum may function as workplace wellness coordinators, health educators, and health coaches 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.

Professional practice is addressed during the laboratory and field experience portions of the curriculum. Students may develop skills while working in community agencies, health care, school, and worksite settings.

Upon completion of the program, graduates are eligible to sit for the following credentialing examinations:

- CPH—offered by the National Board of Public Health Examiners, <https://www.nbphe.org>.
- National Board Certified Health & Wellness Coach (NBC-HWC)—offered by National Board of Medical Examiners (NBME) and the International Consortium for Health & Wellness Coaching (ICHWC).
- Certified Health Education Specialist (CHES) or MCHES—offered by the National Commission for Health Education Credentialing, Inc., <http://www.nchec.org/>.
- Certified Personal Trainer (ACSM-CPT)—offered by American College of Sports Medicine, <https://acsm.org/> (<https://www.acsm.org/>).

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Assess individual lifestyle-related risk factors for chronic diseases in diverse populations in a culturally sensitive manner.
2. Utilize evidence-based wellness coaching techniques to promote health behavior change.
3. Select and apply appropriate health behavior theory in the development of a health intervention program.
4. Implement and evaluate a health intervention program.
5. Assess health education collaborative advocacy efforts among community.

## Educational effectiveness indicators

Achievement of program learning outcomes will be evidenced by:

- Signature assignments linked to course and non-course requirements.
- Comprehensive examination.

## Prerequisite

- Behavioral science.

## Website information

For more information, please see our website at [llu.edu/public-health/](http://www.llu.edu/public-health/) online (<http://www.llu.edu/public-health/online/>).

## Program requirements

### On Campus

#### Public health core

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle <sup>4</sup>	5
PCOR 503	Public Health and Health Systems	5

#### Major

HPRO 526	Lifestyle Diseases and Risk Reduction	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 <sup>1,3</sup>	2
HPRO 537B	Community Programs Laboratory—B <sup>2,3</sup>	1
HPRO 537C	Community Programs Laboratory—C <sup>3</sup>	1
HPRO 538	Health Education Program Development and Evaluation <sup>2</sup>	3
HPRO 539	Policy and Issues in Health Education	3
HPRO 541	Wellness Coaching I	3
HPRO 542	Wellness Coaching II	3
HPRO 570	Wellness Coaching Lab	1
HPRO 573	Exercise Physiology I	3
HPRO 589	Qualitative Research Methods <sup>1</sup>	3
NUTR 529	Health Aspects of Vegetarian Eating	3
STAT 515	Grant- and Contract-Proposal Writing	3

#### Religion

RELR 540	Wholeness and Health	3
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**Total Units** **56**

<sup>1</sup> HPRO 537A and HPRO 589 to be taken concurrently.

<sup>2</sup> HPRO 537B and HPRO 538 to be taken concurrently.

<sup>3</sup> HPRO 537 A, B, and C must be taken during the same year

<sup>4</sup> Fulfills service learning requirement

### Online

#### Public health core

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle <sup>1</sup>	5
PCOR 503	Public Health and Health Systems	5

#### Major

HPRO 526	Lifestyle Diseases and Risk Reduction	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 541	Wellness Coaching I	3
HPRO 542	Wellness Coaching II	3
HPRO 570	Wellness Coaching Lab	1

HPRO 573	Exercise Physiology I	3
HPRO 589	Qualitative Research Methods	3
HPRO 595	Community Project	4
NUTR 529	Health Aspects of Vegetarian Eating	3
STAT 515	Grant- and Contract-Proposal Writing	3
<b>Religion</b>		
RELR 540	Wholeness and Health	3
<b>Total Units</b>		<b>56</b>

<sup>1</sup> Fulfills service learning requirement

### Integrative learning experience

In addition to the standard integrative learning experience requirements (p. 397), students will be required to pass a comprehensive exam.

### Normal time to complete the program

1.67 (five [5] academic quarters) – based on full-time enrollment

### Comparison

See the comparison (p. 404) of the on-campus and online tracks of this program.

## Health Education and Wellness Coaching M.P.H. – On Campus, Online Comparison

	Course Title	On Campus	Online
<b>Public Health Core</b>			
PCOR 501	Public Health for Community Resilience	5.0	5.0
PCOR 502	Public Health for a Healthy Lifestyle	5.0	5.0
PCOR 503	Public Health and Health Systems	5.0	5.0
<b>Totals</b>		<b>15.0</b>	<b>15.0</b>
	Course Title	On Campus	Online
<b>Major</b>			
HPRO 526	Lifestyle Diseases and Risk Reduction	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	3.0	3.0
HPRO 539	Policy and Issues in Health Education	3.0	3.0
HPRO 541	Wellness Coaching I	3.0	3.0
HPRO 542	Wellness Coaching II	3.0	3.0
HPRO 573	Exercise Physiology I	3.0	3.0
HPRO 570	Wellness Coaching Lab	1.0	1.0
HPRO 589	Qualitative Research Methods	3.0	3.0
NUTR 529	Health Aspects of Vegetarian Eating	3.0	3.0
STAT 515	Grant- and Contract-Proposal Writing	3.0	3.0
HPRO 537A	Community Programs Laboratory—A <sup>1,3</sup>	2.0	
HPRO 537B	Community Programs Laboratory—B <sup>2,3</sup>	1.0	
HPRO 537C	Community Programs Laboratory—C <sup>3</sup>	1.0	
HPRO 595	Community Project		4.0
<b>Totals</b>		<b>38.0</b>	<b>38.0</b>
	Course Title	On Campus	Online
<b>Religion</b>			
RELR 540	Wholeness and Health (or REL_) <sup>4</sup>	3.0	3.0
<b>Totals</b>		<b>3.0</b>	<b>3.0</b>
<b>Overall Totals</b>		<b>56.0</b>	<b>56.0</b>

<sup>1</sup> HPRO 537A and HPRO 589 to be taken concurrently.

<sup>2</sup> HPRO 537B and HPRO 538 to be taken concurrently.

<sup>3</sup> HPRO 537 A, B, and C must be taken during the same year

<sup>4</sup> Fulfills service learning requirement

## Nutrition with coordinated program in dietetics – M.P.H.

### Program director

Celine Heskey

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 nutrition and 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. degree curriculum may establish eligibility to write the registration examination to become registered dietitian nutritionists (RDN) 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), <https://www.eatrightpro.org/acend> (<https://www.eatrightpro.org/acend/>).

### Program learning 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. By the end of the program, graduates should be able to:

- Describe the integration of biological mechanisms underlying the effect of food and nutrients on individual and population health outcomes.
- Function independently and collaboratively as a leader or member of a team to plan, manage, and evaluate public health nutrition interventions.
- Critically analyze studies and nutrition and dietetics evidence-based guidelines for public health prevention, nutrition interventions, and research.
- Evaluate public policies and processes related to food and nutrition, and explore their impact on health outcomes.
- Examine the role of vegetarian dietary practices on human health, the environment, and ecology.
- Apply the nutritional care process consistent with competencies defined by the ACEND.

### Educational effectiveness indicators

Program learner outcomes are evidenced by:

- Signature assignments linked to course and non-course requirements.
- Field practicum report.
- Integrative learning experience (p. 397).

### Prerequisites

- General chemistry
- Organic chemistry
- Microbiology
- Anatomy and physiology
- Human nutrition or equivalent

## Individuals who may benefit from the program

Graduates with bachelor's degrees or higher who seek credentialing as RDNs.

### Program requirements

#### Corequisites

DTCS 544	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	5
NUTR 490	Topics in Foods and Food Preparation	1
NUTR 526	Nutrition Counseling and Education	2

**Total Units** **20**

#### Public health core

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle <sup>1</sup>	5
PCOR 503	Public Health and Health Systems	5

#### Major

NUTR 506	Nutritional Metabolism	3
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 531	Community Nutrition Intervention I	2
NUTR 532	Community Nutrition Intervention II	1
NUTR 534	Maternal and Child Nutrition	3
NUTR 535	Research Applications in Nutrition	3
NUTR 557	Nutrition Care Process for Diabetes and Heart Disease	2
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1

#### Religion

RELE 534	Ethical Issues in Public Health (or REL_)	3
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#### Electives

choose in consultation with advisor

**Total Units** **57**

#### Field experience

##### Corequisites

DTCS 777	Food Systems Management Affiliation	6
DTCS 778	Clinical Nutrition Affiliation	12

##### Applied Practice Experience

PHCJ 798D	Public Health Practicum (400 hours)	8
or PHCJ 798A	Public Health Practicum	
or PHCJ 798B	Public Health Practicum	

or PHCJ 798C Public Health Practicum

**Total Units** 26<sup>1</sup> Fulfills service learning requirement

### Integrative learning experience

In addition to the standard integrative learning experience requirements (p. 397), students are expected to complete a comprehensive exam, field practicum report, and E-portfolio (including 100 hours of community service).

### Normal time to complete the program

2.33 years (nine [9] academic quarters) – based on full-time enrollment; part time permitted

## Plant-Based Nutrition – M.S.

### Program director

Michael Paalani

The Master of Science (M.S.) in plant-based nutrition provides students with advanced training in nutritional science, with an emphasis on plant-based nutrition, through both coursework and noncourse activities. The program offers a variety of courses in nutritional science emphasizing the role of plant-based dietary practices in human health and the environment. The program prepares students for careers in the field of nutrition, promoting plant-based nutrition for health in health-care facilities, the wellness industry, food services, and educational institutions; for leadership roles in academia, government, or the food industry; and careers involving evidence-based communication of plant-based nutritional science for the health and well-being of the individual, population, and the planet.

The M.S. degree requires a minimum of 48 units and includes research, culminating in either a publishable manuscript or a written report. This is considered a nonthesis M.S. program. A written comprehensive examination is required.

### Program learning outcomes

By the end of the program, the graduate should be able to:

1. Demonstrate a grasp of the science of nutrients essential to analyzing the role of plant foods in supporting and optimizing human health and longevity.
2. Employ research skills to interpret data on nutrition, and apply it to health promotion and intake requirements across the life cycle.
3. Develop evidence-based food guidance for plant-centered eating that optimizes health and prevents disease.
4. Evaluate the impact of plant-based diets on planetary health, ecology, and the environment.
5. Communicate nutrition concepts effectively to individuals and populations.

### Educational effectiveness indicators

- Comprehensive examination
- Research paper or final written report
- Oral presentation of research paper or final written report

### Prerequisite

- Organic chemistry
- Human physiology
- Human nutrition or equivalent

### Corequisite

NUTR 506 Nutritional Metabolism or nutritional biochemistry or equivalent

### Individuals who may benefit from the program

Those who may benefit from this program include individuals holding a baccalaureate degree in science, registered dietitians, physicians, and other health professionals desiring to apply evidenced-based plant-based diets in their practice, as well as those who want to pursue a Ph.D. in nutrition, working professionals who need an online graduate degree in nutrition, health educators who want to communicate the health benefits of plant-based eating for health promotion, students motivated to promote sustainable diets, and those interested in lifestyle nutrition.

### Program requirements

#### Public Health

PHCJ 606	Public Health Fundamentals	4
STAT 521	Biostatistics I <sup>1</sup>	4

#### Major

NUTR 508	Plant-Based Nutrition for Life Cycle	2
NUTR 517	Advanced Nutrition I: Carbohydrates and Lipids	4
NUTR 518	Advanced Nutrition II: Proteins, Vitamins, and Minerals	4
NUTR 519	Phytochemicals	2
NUTR 520	Sustainable Food Systems	3
NUTR 529	Health Aspects of Vegetarian Eating	3
NUTR 556	Nutritional Applications in Lifestyle Intervention	3
NUTR 564	Contemporary Issues of Vegetarian Diets	2
NUTR 605	Seminar in Nutrition	1

#### Religion

RELR 540	Wholeness and Health <sup>2</sup>	3
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#### Electives

Choose from elective courses offered at LLU SPH		3-6
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#### Statistics and research

NUTR 530	Dietary Assessment of Populations	2
NUTR 535	Research Applications in Nutrition	3

#### Directed research

NUTR 694	Research	2-5
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**Total Units** 48

<sup>1</sup> Students may take an equivalent statistics course in consultation with advisor.

<sup>2</sup> Fulfills service learning requirement.

### Culminating experience

A culminating research activity (NUTR 694 Research) carried out under the supervision of the program faculty. The deliverable will be either a publishable peer-reviewed manuscript, or a written project report.



Students will also present their work in an oral presentation to their program faculty.

## Normal time to complete the program

1.33 year (five [5] academic quarters) – based on full-time enrollment; part time permitted

# Population Medicine – M.P.H.

## Program director

Lori Wilber

The Population Medicine Program is designed to meet the needs of practicing health professionals who have experience in direct patient care, and who wish to augment their current careers with additional information and skills in the health of populations. The students will be competent in improving the health of a population as well as continuously improving their own professional practice.

Individuals who may benefit from this program include practicing health professionals, such as physicians, dentists, pharmacists, nurses, social workers, physical therapists, and psychologists as well as students who are currently enrolled in clinical practice-related doctoral degrees (e.g., M.D., D.O., D.D.S., Pharm.D.). This degree will provide clinicians with cutting-edge knowledge and a skill set to integrate population-based, health-care approaches into their everyday clinical practice.

## Program learning outcomes

By the end of the program, the graduate should be able to:

- Formulate a strategy to control risks or hazards in a defined population.
- Design a multifaceted preventive approach to address a complex health issue.
- Create a leadership strategy to manage the health of a population.
- Develop a plan for one's own personal and professional well-being.
- Integrate evidence from scientific studies into one's professional practice.

## Educational effectiveness indicators

Program learner outcomes as evidenced by:

- Signature assignments linked to course and noncourse requirements.
- Applied practice experience products.
- Integrative learning experience product.

## Prerequisites

In addition to the entrance requirements for all M.P.H. degrees (p. 397), applicants to the M.P.H. degree program in population medicine must have:

- A health-care-related degree:
  - Bachelor's or master's degree with two years of postgraduate, direct patient-care experience (e.g., nursing, social work, dental hygiene, physical therapy, occupational therapy, or psychology).
  - Acceptance into—or completion of—a clinical practice-related doctoral degree program (e.g., M.D., D.O., D.D.S., D.N.P., D.P.T., Pharm.D.). Must have completed at least two years in a clinical program.

- GRE examination:
  - May be waived with either completion of a clinical practice-related doctoral degree (e.g., M.D., D.O., D.D.S., D.N.P., D.P.T., Pharm.D., or Ph.D.) or by entrance examination for a clinical practice-related doctoral degree (e.g., MCAT, DAT).
- Anatomy and/or physiology (one course).
- Behavioral science (one course).

## Program requirements

### Public health core

PCOR 501	Public Health for Community Resilience	5
PCOR 502	Public Health for a Healthy Lifestyle <sup>1</sup>	5
PCOR 503	Public Health and Health Systems	5

### Population medicine major

PMED 521	Population Medicine I	4
PMED 522	Population Medicine II	4
PMED 523	Population Medicine III	4
PMED 551	Population Medicine in Public Health I	4
PMED 552	Population Medicine in Public Health II	4
PMED 553	Population Medicine in Public Health III	4

### Religion

RELE 534	Ethical Issues in Public Health (or REL_)	3
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### Cognates/Electives

Choose in consultation with advisor		
<b>Total Units</b>		<b>56</b>

<sup>1</sup> Fulfills service learning requirement

## Integrative learning experience

See standard integrative learning experience requirements (p. 397).

## Normal time to complete the program

Two (2) years (eight [8] academic quarters) – based on full-time enrollment; part time permitted

# Doctoral degrees

## Admissions

Admissions requirements for doctoral degree programs described below are in addition to the University admissions requirements (p. 23) and program requirements. 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 and/or practice experience, or educational background comparable to the M.P.H. or the M.S. degrees. Dr.P.H. degree applicants who are admitted without an M.P.H. degree will be required to take PHCJ 606 Public Health Fundamentals, EPDM 509 Principles of Epidemiology, STAT 521 Biostatistics I or AHRM 514 Biostatistics, and STAT 548 Analytical Applications of SAS and R or STAT 549 Analytical Applications of SPSS or equivalent courses to fulfill the public health fundamental learning outcomes described in section D.1 of the 2016 CEPH criteria.
- Satisfactory performance on the GRE or equivalent is required; scores must have been attained within the past five years. Although there is



no minimum GRE score requirement, 40<sup>th</sup> percentile or higher in each of the three sections of the GRE (verbal, quantitative, and writing) is considered competitive.

- 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 review of applicant's transcripts, written statement, research and/or practice interest, letters of recommendation, GRE scores or equivalent, and interview. Satisfying minimum requirements does not guarantee admission.

## Dr.P.H. degree

The Doctor of Public Health (Dr.P.H.) programs prepare individuals for leadership positions in public health practice in health-care systems, governmental agencies, non-profit organizations, and community setting. The competency-based curriculum delivers advanced public health education with specific focus within disciplines, and applied practice and integrated learning experiences that address the doctoral foundational and discipline specific competencies. Students may enroll on a full- or part-time basis; however, it is recommended they advance to candidacy within three years of entering the program, and complete the program within five years. (They may not exceed the University maximum allowable time for degree completion of seven years for a doctoral degree.) Majors are available in:

- Health Education—online
- Preventive Care—online
- Health Policy and Leadership—on campus and online

Dr.P.H. degree programs offer preparation for careers in which advanced expertise in program planning, implementation, evaluation and policy analysis are required. Students' doctoral projects (integrated learning experiences) and applied practice experiences are key components in the development of critical thinking and leadership skills.

A minimum of two years is generally required to complete coursework, for full-time students. Program plans are described under individual majors. The number of units of course work required to complete the program may be reduced but is not to be fewer than 54 units plus applied practice experience and integrated learning experience units at Loma Linda University.

The overall Dr.P.H. curriculum is designed using a faith-based lens to accurately reflect the mission and vision of Loma Linda University and the School of Public Health. Additionally, nine units of courses offered by the LLU School of Religion are included in the curriculum to allow the students to enhance personal spiritual development as well as application of faith-based values to professional practice.

### Dr.P.H. Foundational Competencies

The Dr.P.H. core curriculum is based on the doctoral foundational competencies from 2016 CEPH criteria. These include:

**Critical Analysis:** Ability to synthesize and apply evidence based research and theory from a broad range of public health disciplines and health related data sources to advance programs, policies, and systems promoting population health.

Competencies:

1. Analyze quantitative, qualitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple levels (individual, group, organization, community and population).
2. Design a quantitative, qualitative, mixed methods, policy analysis or evaluation project to address a public health issue.
3. Explain the use and limitations of surveillance systems and national surveys in assessing, monitoring and evaluating policies and programs and to address a population's health.

**Leadership, Management and Governance:** Ability to create, communicate and apply shared vision, inspire trust and motivate others, build capacity and strategies, and identify and analyze ethical issues in addressing public health problems.

Competencies:

4. Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners.
5. Propose strategies to promote inclusion and equity within public health programs, policies and systems.
6. Create a strategic plan
7. Create organizational change strategies
8. Propose human, fiscal and other resources to achieve a strategic goal.
9. Cultivate new resources and revenue streams to achieve a strategic goal.
10. Assess one's own strengths and weaknesses in leadership capacities including cultural proficiency.
11. Facilitate shared decision making through negotiation and consensus building methods.
12. Integrate knowledge, approaches, methods, values and potential contributions from multiple professions and systems in addressing public health problems.
13. Communicate public health science recognizing different communication styles and tools to diverse stakeholders including individuals at all levels of health literacy, for purposes of influencing behavior and policies.

**Policy, Advocacy and Programs:** Ability to design system-level interventions that influences population health outcomes in transdisciplinary team approaches that promote health equity and disease prevention across diverse communities and cultures.

Competencies:

14. Design a system-level intervention to address a public health issue.
15. Integrate knowledge of cultural values and practices in the design of public health policies and programs.
16. Integrate scientific information, legal and regulatory approaches, ethical frameworks and varied stakeholder interests in policy development and analysis.
17. Propose inter professional team approaches to improving public health.

**Education and Workforce development:** Ability to develop and apply pedagogical principles and skills to identify learning needs of a population and promote learning in academia, organizational and community settings.

Competencies:

18. Assess a population's knowledge and learning needs.
19. Use best practice modalities in pedagogical practices.
20. Deliver training or educational experiences that promote learning in academic, organizational or community settings.

### Applied practice and integrated learning experience

All Dr.P.H. students will engage in an applied practice experience (AP) that results in a final product that is relevant to public health organizations. The culminating activity is an integrated learning experience (ILE) that includes a field-based project emphasizing advanced practice. Both AP and ILE will demonstrate integration of foundational and concentration-specific competencies.

### Dr.P.H. degree corequisites

Students must have an M.P.H. from an accredited institution or complete courses in PHCJ 606 Public Health Fundamentals, EPDM 509 Principles of Epidemiology, STAT 521 Biostatistics I or AHRM 514 Biostatistics, and STAT 548 Analytical Applications of SAS and R or STAT 549 Analytical Applications of SPSS or equivalent courses prior to taking doctoral level public health core courses.

### Advancement to candidacy

Advancement to candidacy is granted by the Academic Dean. When the doctoral foundational coursework is completed, the student must successfully pass a written comprehensive examination. The next step is the qualifying examination. The student is required to submit a concept paper describing the proposed doctoral project, and proposed Doctoral Project Guidance Committee. Students are advanced to candidacy when they successfully present their doctoral project proposals that include the rationale and significance to the field, approach and tools, and outcomes (deliverables). Successful completion of the doctoral project also requires a high quality written document (guidelines outlined in the SPH doctoral handbook).

### Teaching experience

Each doctoral student is required to serve as a teaching assistant for a minimum of one quarter. Additional information is detailed in the SPH Doctoral Handbook.

### Professional Development

All doctoral students are required to present their work (applied practice experience or integrated learning experience) at a scientific or professional conference either as a poster or as a short oral presentation.

## Ph.D. degree

The Doctor of Philosophy (Ph.D.) programs prepare individuals for careers in scientific research and/or teaching at universities and leadership positions in governmental agencies, health care, industry and private organizations. The Ph.D. curriculum provides advanced didactic training in a specific discipline, develops students' critical thinking and research skills to conduct independent research, and enhances written and oral communication to the scientific community to advance the field through dissertation and peer-reviewed publications. Students may enroll on a full- or part-time basis; however, it is recommended they advance to candidacy within three years of entering the program, and complete the program within five years. (They may not exceed the University maximum allowable time for degree completion of seven years for a doctoral degree.) Majors are available in:

- Epidemiology
- Nutrition

Ph.D. degree programs offer preparation for careers in which advanced expertise in research and the discipline are required. Students' doctoral dissertation and peer-reviewed manuscripts are key components in the development of critical thinking, research and scientific communication skills.

A minimum of two years is generally required to complete coursework, if full time. Program plans are described under individual majors. The number of units of coursework required to complete the program may be reduced but is not to be fewer than 47 units plus 12 research/dissertation units at Loma Linda University. Students whose academic backgrounds include substantial graduate study in a cognate field may be granted advanced standing.

The overall Ph.D. curriculum is designed using a faith-based lens to accurately reflect the mission and vision of Loma Linda University and the School of Public Health. Additionally, nine units of courses offered by the LLU School of Religion are included in the curriculum to allow the students to enhance personal spiritual development as well as application of faith-based values to professional practice.

### Learner outcomes

Please see the individual program descriptions for the specific program learning outcomes. Program learning outcomes tied to scientific communication, both oral and written, educational pedagogy, and professional and scientific ethics are shared across all doctoral programs (both Dr.P.H. and Ph.D.).

### 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. Degree specific descriptions of the comprehensive examination can be found in the *Doctoral Handbook*.

### Advancement to candidacy

Advancement to candidacy is granted by the Academic Dean. When the required discipline specific and research methods courses are completed, the student must successfully pass a written comprehensive examination. The next step is the qualifying examination. The student is required to submit a concept paper describing the proposed dissertation research, and members of the proposed Dissertation Guidance Committee (DGC). Students are advanced to candidacy when they successfully defend (oral examination) their dissertation proposals. Proposal should include the first three chapters of the dissertation—Introduction, Review of Literature, and Methods. The details of this process are described in the SPH Doctoral Handbook.

### Teaching experience

All doctoral students are required to serve as a teaching assistant for a minimum of one quarter. Additional information is detailed in the SPH Doctoral Handbook.

### Professional development

All doctoral students are required to present their research work at a scientific conference either as a poster or as short oral presentation.

## Programs

- Epidemiology — Ph.D. (p. 410)
- Health Education — Dr.P.H. (p. 411)
- Health Policy and Leadership — Dr.P.H. (p. 412)
- Nutrition — Ph.D. (p. 413)
- Preventive Care — Dr.P.H. (p. 415)

# Epidemiology – Ph.D.

## Program director

Michael Orlich

The Doctor of Philosophy (Ph.D.) degree program in epidemiology prepares students to effectively conduct epidemiologic research, apply epidemiologic principles and methods to address public health problems, and teach the discipline to others. The major research focus of the faculty in the program has been the epidemiology of chronic diseases linked to exposures such as tobacco use, air pollution, and diet. Studying the effects of diet on health and disease risk in populations is a particular strength of our program. The curriculum is designed to establish competence in classical and modern epidemiologic methods, to promote successful learning and application of emerging methods, and to prepare the graduate for successful interdisciplinary research collaboration with public health and medical professionals, nutritionists, biostatisticians, bioinformaticians, and biological scientists.

## Program learning outcomes

By the end of the program, the graduate should be able to:

- Apply advanced knowledge of the principles and methods of epidemiology to interpret and critically evaluate the results of epidemiologic analyses.
- Apply epidemiologic principles to design appropriate studies to evaluate exposure-disease hypotheses, and communicate these study designs in a research grant proposal.
- Demonstrate proficiency in the principles and methods of data collection and management, and obtain epidemiologic data and prepare it for analysis.
- Analyze complex data using appropriate statistical methods and computer programming resources to answer epidemiologic questions.
- Effectively communicate epidemiologic science, orally and in writing, to the scientific community and the public, advancing the field and promoting public health.
- Use best-practice modalities in pedagogy to deliver educational experiences in an academic setting.
- Apply the principles of scientific and professional ethics in research, teaching, and practice.

## Educational effectiveness indicators

- Assessments from required courses.
- Comprehensive examination.
- Dissertation proposal defense (qualifying examination).
- Dissertation manuscript.
- Submission of three manuscripts from the dissertation to peer-reviewed journals, one of which must be published or accepted for publication.
- Oral defense of dissertation.
- Teaching assistantship.
- Presentation at a scientific conference.

## Prerequisites

Doctoral-level health professional degree or master's degree in epidemiology or in a related field.

The following courses or equivalents:

- Anatomy and physiology
- Pathology
- Microbiology
- Biochemistry
- Genetics or molecular biology

A G.P.A. of 3.5 or higher is preferred.

A GRE or equivalent is required (above the 40<sup>th</sup> percentile in each section is favorable).

## Individuals who may benefit from the program

Those who may benefit from the program include individuals seeking careers in:

- Academic epidemiology (research and teaching).
- Research in private industry, governmental agencies, or nonprofit organizations.
- Public health epidemiology with a research focus.

## Program requirements

### Co-requisites

EPDM 509	Principles of Epidemiology	3
EPDM 510	Epidemiologic Methods I	3
EPDM 520	Data Collection Methods	3
STAT 515	Grant- and Contract-Proposal Writing	3
STAT 521	Biostatistics I	4
STAT 548	Analytical Applications of SAS and R	2
<b>Total Units</b>		<b>18</b>

Advanced standing from previous degrees considered.

### Public health core

PHCJ 606	Public Health Fundamentals	4
PHCJ 608A	Doctoral Seminar for Public Health	1
PHCJ 608B	Doctoral Seminar for Public Health	1
PHCJ 608C	Doctoral Seminar for Public Health	1
PHCJ 614	Pedagogy: The Art and Science of Teaching	2
PHCJ 618	Transformative Communication	2

### Epidemiologic methods

EPDM 610	Advanced Epidemiologic Methods	4
STAT 522	Biostatistics II	4
STAT 523	Biostatistics III	3

### Applied epidemiology

EPDM 635	Epidemiological Studies of Adventists	1
EPDM 645	Epidemiology of Tobacco Use and Control	2
EPDM 664	Epidemiology of Cardiovascular Disease	2
EPDM 665	Epidemiology of Cancer	2
EPDM 668	Molecular Epidemiology	2
NUTR 634	Concepts of Nutritional Epidemiology	3

### Religion

RELE 525	Ethics for Scientists	3
RELR 540	Wholeness and Health <sup>1</sup>	3
RELT 617	Seminar in Religion and the Sciences (or approved alternate course)	3

### Electives

Select from the following recommended electives or in consultation with advisor 12

BCHM 515	Introduction to Bioinformatics	
EPDM 512	Epidemiologic Methods III	
EPDM 544	Epidemiology of Infectious Disease	
HADM 587	Health Policy Analysis and Research	
HGIS 524	GIS Software Applications and Methods	
HGIS 536	Spatial Analytic Techniques and GIS	
HPRO 588	Health Behavior Theory and Research	
HPRO 589	Qualitative Research Methods	
NUTR 620	Advanced Topics in Nutrition	
NUTR 643	Advanced Applications in Nutritional Epidemiology	
NUTR 664	Vegetarian Nutrition: Person, Population, Planet	
PHCJ 600	Overview of Research Methodologies	
PHCJ 630	Concepts and Practical Issues of Secondary Data	

### Research and dissertation

EPDM 685	Preliminary Research Experience	2
EPDM 698	Dissertation	12
PHCJ 624A	Scientist Forum	1
PHCJ 624B	Scientist Forum	1
PHCJ 624C	Scientist Forum	1

**Total Units** 72

<sup>1</sup> Fulfills service learning requirement

### Additional requirements

Further details regarding non-course degree requirements are found in the *SPH Doctoral Handbook*.

### Teaching assistantship

Ph.D. students are expected to assist faculty members with the teaching of epidemiology and/or biostatistics courses. It is the responsibility of doctoral students to obtain documentation from faculty members they have assisted.

### Comprehensive examination

Doctoral students must pass a comprehensive examination prior to advancement to candidacy.

### Dissertation proposal and proposal defense

After passing the comprehensive examination, each student will prepare a formal dissertation proposal. Successful defense of this proposal will lead to advancement to candidacy for the degree.

### Presentation at scientific conference

The student must present one research project in poster or oral form at an appropriate professional conference.

### Culminating experience

As a part of the culminating experience, the student must submit three manuscripts from the dissertation research to appropriate peer-reviewed journals, successfully defend the dissertation, and submit a committee-approved dissertation manuscript.

### Scientific publication

The student must submit and have accepted for publication one of the three dissertation papers in an appropriate peer-reviewed journal prior to graduation. The two remaining dissertation papers must have been submitted to peer-reviewed journals prior to graduation.

### Normal time to complete the program

Three to five (3-5) years – based on full-time enrollment

## Health Education – Dr.P.H.

### Program director

Anna Nelson

The Dr.P.H. degree in health education is designed for individuals who desire to add depth to their health education specialization as well as develop research and leadership skills. The emphasis on health education offers advanced knowledge and competencies in the health education domains and also includes advocacy, critical analysis, leadership, professionalism, and ethics.

The online technology-mediated format is designed to meet the needs of working professionals. The curriculum consists of online asynchronous and synchronous courses (where online and on-campus students meet simultaneously for class via teleconference). Specific hardware and software requirements for the program must be met. Online students are required to comply with the online attendance requirements per LLU Distance Education Policy.

Upon completion, graduates are eligible to sit for the credentialing examination in health education—CHES or MCHES—offered by the National Commission of Health Education Credentialing, Inc., <http://www.nchec.org/>.

### Program learning outcomes

By the end of the program, the graduate should be able to:

- Collect and analyze qualitative data to enable research and programs promoting public health.
- Integrate public health research and health behavior theory to advance science or practice of health education.
- Apply evaluation specific theory and methodology in evaluation practice.
- Provide mentorship and consultation on health education-related issues.
- Apply evidence-based research to develop advocacy efforts for policies or programs promoting health.

### Educational effectiveness indicators

- Comprehensive examination.
- Publishable research paper.
- Doctoral project presentation.

### Prerequisite

In addition to the entrance requirements for all Dr.P.H. degrees (p. 407), each applicant to the Dr.P.H. degree program in health education must have:

- A degree in health education, health behavior, or health promotion; or a master's degree in a health-related field (preferred).

- Postmaster's degree work experience (preferred).
- Social science, two courses which may include psychology, sociology, or cultural anthropology.

## Program requirements

### Corequisites

See standard DrPH corequisites (p. 408).

#### Dr.P.H. public health core

Critical analysis		
PHCJ 600	Overview of Research Methodologies	3
PHCJ 615	Intermediate Biostatistics	3
Electives (choose from following)		3
HADM 587	Health Policy Analysis and Research	
PHCJ 630	Concepts and Practical Issues of Secondary Data	
STAT 568	Data Analysis	

#### Leadership, management, and governance

PHCJ 607	Professional Leadership	3
PHCJ 616	Administrative Systems in Agency Management	3
PHCJ 617	Building Healthy Systems	3

#### Education and workforce development

PHCJ 618	Transformative Communication	2
PHCJ 614	Pedagogy: The Art and Science of Teaching	2

#### Policy, advocacy and programs

PHCJ 609	Building Healthy Individuals	3
PHCJ 610	Building Healthy Communities <sup>1</sup>	3

#### Doctoral seminar

PHCJ 608A	Doctoral Seminar for Public Health	1
PHCJ 608B	Doctoral Seminar for Public Health	1
PHCJ 608C	Doctoral Seminar for Public Health	1

#### Health education major

HPRO 544	Health Education Evaluation and Measurement	3
HPRO 588	Health Behavior Theory and Research	4
HPRO 589	Qualitative Research Methods	3
HPRO 604	Research Seminar	2
HPRO 608	Advanced Seminar in Health Education (2)	4

#### Electives 2-5

Religion		
RELE 5__	Graduate-level ethics	3
RELR 5__	Graduate-level relational	3
RELT 5__	Graduate-level theological	3

#### Integrated learning experience

PHCJ 698	Doctoral Project	4
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#### Total Units 62

#### Practicum

Practicum units are in addition to the minimum didactic units required for the degree

PHCJ 795	Applied Practice	2
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<sup>1</sup> Fulfills service learning requirement

## Applied practice experience and integrated learning experience

All Dr.P.H. students will engage in an applied practice experience that results in a product that is relevant to public health organizations. The culminating activity is an integrated learning experience that includes a field-based project emphasizing advanced practice. Both applied practice experience and integrated learning experience will demonstrate integration of foundational and concentration specific competencies.

### Normal time to complete the program

Three (3) years – based on full-time enrollment; part time permitted

## Health Policy and Leadership – Dr.P.H.

### Program director

Jim Banta

The Dr.P.H. degree curriculum in health policy and leadership emphasizes a blend of professional and academic skills, including leadership and management, finance and philanthropy, community engagement and advocacy, policy analysis and development, ethics, and research methods. 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 opportunity to serve at the intersection of leadership and policy. The goal is to prepare participants for success in leadership positions that have major influence on policies, programs, and public health systems.

Coursework may be pursued in the following formats:

- On-campus (combination of on-campus and online coursework).
- Online (combination of synchronous and asynchronous coursework).

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Engage in reflective leadership and analyze a broad range of management and leadership issues, including governance, valuing diversity, planning, conflict resolution, and change management.
2. Demonstrate ability to evaluate the health policy development process, including problem identification, policy formulation, and implementation.
3. Demonstrate commitment to ethical choices and values of justice and equity by formulating strategies for policy advocacy.
4. Analyze community-building principles and develop strategies to address social determinants of health—including the delivery, quality, and costs of health and health care for individuals and populations.
5. Develop skills in evaluating, conducting, and reporting research.

## Educational effectiveness indicators

- Comprehensive examination.
- Applied project presentation.
- Publishable paper.
- Doctoral project presentation.



## Individuals who may benefit from the program

Participants could be mid-to-senior-level managers in public health, health care, public and government agencies, higher education, social welfare organizations, nongovernmental organizations (NGOs), faith-based organizations, 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 non-health sectors are encouraged to apply. Those admitted into the program should have had sufficient experience in the workplace (three or more years), and be currently employed in an organization that is supportive of their degree program as well as the unique requirement for developing a "learning environment" in the workplace.

## Prerequisite

See entrance requirements for all Dr.P.H. degrees. (p. 407)

## Program requirements

### Corequisites

See standard DrPH corequisites (p. 408).

### Dr.P.H. public health core

#### Critical analysis

PHCJ 600	Overview of Research Methodologies	3
PHCJ 615	Intermediate Biostatistics	3
Selectives (choose from following)		3
HPRO 589	Qualitative Research Methods	
PHCJ 630	Concepts and Practical Issues of Secondary Data	
STAT 568	Data Analysis	

#### Leadership, management, and governance

PHCJ 607	Professional Leadership	3
PHCJ 616	Administrative Systems in Agency Management	3
PHCJ 617	Building Healthy Systems	3

#### Education and workforce development

PHCJ 614	Pedagogy: The Art and Science of Teaching	2
PHCJ 618	Transformative Communication	2

#### Policy, advocacy and programs

PHCJ 609	Building Healthy Individuals	3
PHCJ 610	Building Healthy Communities <sup>1</sup>	3

#### Doctoral seminar

PHCJ 608A	Doctoral Seminar for Public Health	1
PHCJ 608B	Doctoral Seminar for Public Health	1
PHCJ 608C	Doctoral Seminar for Public Health	1

#### Health policy and leadership major

HADM 587	Health Policy Analysis and Research	3
HADM 589	Advanced Practice in Leadership	3
HADM 595	Leadership—Past, Present, and Future	3
HADM 616	Health Systems and Population Health	3
HADM 620	Health Policy Theories and Concepts	3
HADM 625	Health Policy Advocacy and Civic Engagement	3

#### Electives

	Elective (Choose in consultation with advisor)	0-3
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#### Religion

RELE 5__	Graduate-level ethics	3
RELR 5__	Graduate-level relational	3
RELT 5__	Graduate-level theological	3
<b>Integrated learning experience</b>		
PHCJ 698	Doctoral Project	4
<b>Total Units</b>		<b>62</b>

#### Practicum

Practicum units are in addition to the minimum didactic units required for the degree		
PHCJ 795	Applied Practice	2

<sup>1</sup> Fulfills service learning requirement

## Applied practice experience and integrated learning experience

All Dr.P.H. students will engage in an applied practice experience that results in a product that is relevant to public health organizations. The culminating activity is an integrated learning experience that includes a field-based project emphasizing advanced practice. Both applied practice experience and integrated learning experience will demonstrate integration of foundational and concentration specific competencies.

## Normal time to complete the program

Three years – based on full-time enrollment

## Nutrition – Ph.D.

### Program director

Sujatha Rajaram

The Doctor of Philosophy (Ph.D.) degree in nutrition prepares students to effectively conduct nutrition research as well as apply nutritional science knowledge and appropriate research methods to address public health problems. The program provides an advanced curriculum in nutrition, professional skills, and competencies required to support careers in teaching and research. This program is uniquely situated in the School of Public Health at a health sciences university. The program engages in interdisciplinary research, encouraging collaboration across public health disciplines and the basic sciences, promoting and building upon its core legacy of vegetarian and plant-based nutrition. Areas of curricular strength and research emphasis include plant-based diets and the health of the individual, populations, and the planet; nutritional epidemiology; diet and chronic disease-risk reduction; and community nutrition.

Students enrolled in this program are able to concurrently complete coursework and practice experience necessary to sit for the registered dietitian nutritionist (RDN) exam if not already an RDN.

## Program learning outcomes

By the end of the program, the graduate should be able to:

- Evaluate advanced knowledge in nutritional science and explain the biological mechanism underlying the relationship between nutrients, foods, and diet pattern and health.
- Critically evaluate the evidence base and advocate for the role of plant-based diets in promoting health of the individual, population groups, and the planet.



- Apply analytical and fundamental concepts in nutritional epidemiology.
- Apply principles of research ethics; conduct a research study that addresses a nutrition problem; collect/abstract, analyze, and interpret the data; and report findings.
- Effectively communicate nutritional science, orally and in writing, to the scientific community and the public, advancing the field and promoting public health.
- Use best-practice modalities in pedagogy to deliver educational experiences in an academic setting.
- Apply the principles of scientific and professional ethics in research, teaching, and practice.

## Educational effectiveness indicators

- Assessment from required courses.
- Comprehensive examination.
- Dissertation proposal defense (qualifying examination).
- Dissertation manuscript: submission of two manuscripts from the dissertation to peer-reviewed journals.
- One manuscript published in a peer-reviewed journal (from dissertation research or other research).
- Oral defense of dissertation.
- Teaching assistantship.
- Presentation at a scientific conference.

## Prerequisites

- Master's degree in nutrition preferred; or an M.S. or M.P.H. degree with completion of all prerequisite courses; or a health professional degree at the master's level or higher (M.D. or equivalent).
- Advanced biochemistry (may be taken concurrently with the program).
- Anatomy and physiology, microbiology, general chemistry, and organic chemistry.
- G.P.A. of 3.5 or higher preferred.
- GRE or equivalent (above the 40<sup>th</sup> percentile in each section is favorable).

## Individuals who may benefit from the program

Individuals seeking careers in:

- Academia (teaching and research).
- Researcher in private industry, governmental agencies, nonprofit organizations, or research institutes.
- Public health nutritionist.
- Leadership role in academia and public health sector.
- Health practitioners who want to further the evidence base for the role of plant-based diets in the prevention of lifestyle related diseases.

## Program requirements

### Corequisites

NUTR ____	Graduate course in micronutrients or equivalent	
NUTR ____	Graduate course in macronutrients or equivalent	
NUTR 506	Nutritional Metabolism	3

STAT ____	Graduate course in analytical applications in statistics (SPSS or SAS)	
STAT 521 or AHRM 514	Biostatistics I Biostatistics	3-4

### Public health core

EPDM 509	Principles of Epidemiology	3
PHCJ 606	Public Health Fundamentals	4
PHCJ 608A	Doctoral Seminar for Public Health	1
PHCJ 608B	Doctoral Seminar for Public Health	1
PHCJ 608C	Doctoral Seminar for Public Health	1
PHCJ 614	Pedagogy: The Art and Science of Teaching	2
PHCJ 615	Intermediate Biostatistics	3
PHCJ 618	Transformative Communication	2

### Nutrition core

NUTR 617	Preventive Nutrition I: Carbohydrates and Lipids	2
NUTR 618	Preventive Nutrition II: Protein, Vitamins and Minerals	2
NUTR 619	Preventive Nutrition III: Phytochemicals	3
NUTR 620	Advanced Topics in Nutrition <sup>1</sup>	6
NUTR 664	Vegetarian Nutrition: Person, Population, Planet	3
PHCJ 624A	Scientist Forum <sup>2</sup>	1
PHCJ 624B	Scientist Forum <sup>2</sup>	1
PHCJ 624C	Scientist Forum <sup>2</sup>	1

### Religion

RELE 525	Ethics for Scientists	3
RELR 540	Wholeness and Health <sup>7</sup>	3
RELT 5__	Graduate-level Theological	3

### Electives <sup>3</sup>

<b>Research core</b>		
NUTR 634	Concepts of Nutritional Epidemiology	3
NUTR 639	Research Methods in Nutrition	2
NUTR 685	Preliminary Research Experience <sup>4</sup>	2
NUTR 697	Dissertation Proposal <sup>6</sup>	0-3
NUTR 698	Dissertation <sup>6</sup>	12
STAT 568	Data Analysis	3

**Total Units** **72**

### Optional coordinated program in nutrition and dietetics <sup>5</sup>

DTCS 544	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	5
NUTR 490	Topics in Foods and Food Preparation	1
NUTR 525	Nutrition Policy, Programs, and Services	3
NUTR 526	Nutrition Counseling and Education	2
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 557	Nutrition Care Process for Diabetes and Heart Disease	2
PHCJ 798A	Public Health Practicum	8

or PHCJ 798B	Public Health Practicum	
or PHCJ 798C	Public Health Practicum	
or PHCJ 798D	Public Health Practicum	
DTCS 777	Food Systems Management Affiliation	6
DTCS 778	Clinical Nutrition Affiliation	12
<b>Total Units</b>		<b>60</b>

<sup>1</sup> Register twice for a maximum six units. Each offering in an academic year will be a different topic

<sup>2</sup> Students are required to register for this course 3 times. 0 units in Autumn and Winter, and 1 unit in Spring.

<sup>3</sup> Choose in consultation with academic advisor. Must be graduate-level courses in nutrition, dietetics, public health, or basic sciences.

<sup>4</sup> Students will take 1 unit at a time.

<sup>5</sup> All courses are required for eligibility to sit for the RDN examination.

Courses completed in a prior program (either at the undergraduate or graduate level) will be evaluated on a course-by-course basis to determine equivalency; thus reducing the number of courses to be completed at LLU. Consult with your advisor if you wish to pursue this option.

<sup>6</sup> Completed units in NUTR 697 Dissertation Proposal (maximum of 3) will reduce NUTR 698 Dissertation units by the same amount. Minimum combined units for NUTR 697 and NUTR 698 must equal 12.

<sup>7</sup> Fulfills service learning requirement

## Culminating experience

As a part of the culminating experience, the student publishes one manuscript in peer-reviewed journal (co-authorship or review article acceptable, can be from dissertation or non-dissertation related research), submits two publishable papers from their dissertation research to peer reviewed journals, successfully defends dissertation, and submits a committee approved dissertation manuscript. Further details provided in the SPH *Ph.D. Doctoral Handbook*.

## Normal time to complete the program

Four (4) years – based on full-time enrollment

# Preventive Care – Dr.P.H.

### Program director

Hildemar Dos Santos

The Preventive Care Program prepares high-level health professionals for 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 physical and mental health-risk appraisal, nutritional assessment and recommendations, exercise testing and prescription, and smoking-cessation counseling.

The program seeks to demonstrate and elucidate the intimate connection between mind and body. Graduates address the combined influences of nutrition, exercise, stress, smoking, and other lifestyle factors on the promotion of health and the prevention of disease.

This program is ideal for health practitioners such as physicians, nurses, dentists, physical therapists, registered dietitians, and occupational therapists. Non-health practitioners can apply for this program, and it is recommended they take health and wellness coaching while in

the program. Non-physicians are not able to practice medicine upon completion of this degree.

Coursework for the Preventive Care Program may be pursued in the following formats:

- An on-campus program (combination of on-campus and online coursework).
- An online program (combination of synchronous and asynchronous coursework).

## Program learning outcomes

By the end of the program, the graduate should be able to:

1. Develop strategies to prevent substance abuse and its consequences in a community setting.
2. Design a professional practice to assist clients individually or in groups by applying lifestyle modification strategies.
3. Develop a successful motivational interviewing plan using skills such as active listening, expressing empathy, rolling with resistance, and developing support of change.
4. Develop strategies for weight management, including health-risk assessments, adequate diet, and exercise guidance.
5. Apply preventive skills to design a health intervention that addresses lifestyle-related diseases (e.g., diabetes, hypertension, and heart disease).

## Educational effectiveness indicators

- Comprehensive examination.
- Applied project presentation.
- Publishable paper.
- Doctoral project presentation.

## Prerequisite

In addition to the entrance requirements for all Dr.P.H. degrees (p. 407), applicants to the Dr.P.H. degree in Preventive Care Program must have:

Anatomy and physiology (or equivalent to be evaluated by program director).

## Program requirements

### Corequisites

In addition to standard Dr.P.H. corequisites (p. 408), the Dr.P.H. program in preventive care requires the following courses in addition to units required for the degree. It is recommended these courses be taken early in the program.

HPRO 526 Lifestyle Diseases and Risk Reduction  
HPRO 573 Exercise Physiology I  
NUTR 529 Health Aspects of Vegetarian Eating

### Dr.P.H. public health core

Critical analysis		
PHCJ 600	Overview of Research Methodologies	3
PHCJ 615	Intermediate Biostatistics	3
Electives (choose from following)		3
HADM 587	Health Policy Analysis and Research	

PHCJ 630	Concepts and Practical Issues of Secondary Data	
STAT 568	Data Analysis	
<b>Leadership, management, and governance</b>		
PHCJ 607	Professional Leadership	3
PHCJ 616	Administrative Systems in Agency Management	3
PHCJ 617	Building Healthy Systems	3
<b>Education and workforce development</b>		
PHCJ 614	Pedagogy: The Art and Science of Teaching	2
PHCJ 618	Transformative Communication	2
<b>Policy, advocacy and programs</b>		
PHCJ 609	Building Healthy Individuals	3
PHCJ 610	Building Healthy Communities <sup>1</sup>	3
<b>Doctoral seminar</b>		
PHCJ 608A	Doctoral Seminar for Public Health	1
PHCJ 608B	Doctoral Seminar for Public Health	1
PHCJ 608C	Doctoral Seminar for Public Health	1
<b>Preventive care major</b>		
HPRO 527	Obesity and Disordered Eating	3
HPRO 529	Preventive and Therapeutic Interventions in Chronic Disease	3
HPRO 542	Wellness Coaching II	3
HPRO 553	Addiction Theory and Program Development	3
HPRO 580	Preventive Care Management	3
NUTR 556	Nutritional Applications in Lifestyle Intervention	3
<b>Electives</b>		<b>0-3</b>
HPRO 541	Wellness Coaching I (for students seeking the wellness coaching certificate)	3
	or elective chosen in consultation wth advisor	
<b>Religion</b>		
RELE 5__	Graduate-level ethics	3
RELR 5__	Graduate-level relational	3
RELT 5__	Graduate-level theological	3
<b>Integrated learning experience</b>		
PHCJ 698	Doctoral Project	4
<b>Total Units</b>		<b>65</b>
<b>Practicum</b>		
Practicum units are in addition to the minimum didactic units required for the degree		
PHCJ 795	Applied Practice	2

<sup>1</sup> Fulfills service learning requirement

## Applied practice experience and integrated learning experience

All Dr.PH. students will engage in an applied practice experience that results in a product that is relevant to public health organizations. The culminating activity is an integrated learning experience that includes a field-based project emphasizing advanced practice. Both applied practice experience and integrated learning experience will demonstrate integration of foundational and concentration specific competencies.

## Normal time to complete the program

Three (3) years – based on full-time enrollment

# SCHOOL OF RELIGION

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## Dean's welcome



Loma Linda University's School of Religion has been entrusted with the mission of presenting the story of God's gracious plan to redeem a lost and broken world through the life, death, and resurrection of Jesus Christ. The school's mission, as part of Loma Linda University, is particularly focused on the *teaching and healing ministry of Jesus Christ* and the role it plays in equipping health-care practitioners to integrate Christian faith, health, and science. The school contributes to the University's mission, vision, and values by giving priority to the sacred task of serving students in its eight schools, as well as San Manuel Gateway College. Its use of mission-focused learning through scholarship expands knowledge and addresses the challenges health-care professionals face in today's complex world as well as provides a critical service to the University and world-wide Seventh-day Adventist Church.

The school offers three master's degrees: M.A. degree in bioethics, M.S.Chap. degree in chaplaincy, and M.A. degree in religion and society. These programs prepare graduates with theological education and skills in bioethics and chaplaincy, and emphasize religion's relationship to culture and society. Within the framework of our academic programs, we offer a unique opportunity for students in other University programs to apply for dual enrollment in bioethics as well as religion and society. Students enrolled in medicine, dentistry, and pharmacy are eligible to apply for admission to the bioethics as well as religion and society programs. Please refer to The Combined Degrees Programs of the

University (p. 428) section to learn more about our dual enrollment degree programs.

We believe our academically rigorous programs and mission-focused courses cultivate a vibrant Christian community at LLU, and help to prepare health-care practitioners to go forth and "make man whole" as they embody the teaching and healing ministry of Jesus Christ. Welcome to Loma Linda University School of Religion.

Leo Ranzolin, Th.D.  
Dean, School of Religion

## School foundations

### History

In the configuration of Loma Linda University as a health sciences university, the role of religion as integrative in each of the programs of the University is mandated and continuously affirmed by the University administration and the Board of Trustees.

In July of 1990, the Faculty of Religion (now the School of Religion) was established to assist in this integration.

### Philosophy

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

- God is the Creator and Sustainer of the universe.
- 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 continue the teaching and healing ministry of Jesus Christ by integrating Adventist faith with the world's changing need.

#### Dean

Leo Ranzolin

#### Primary faculty

Whitny Braun

Erik Carter

Janice De-Whyte

Jeff Gang

Theodore N. Levterov

Yi Shen Ma

Jon Paulien

Zdravko Plantak

Randy Roberts

Jeffrey Rosario

Calvin Thomsen

Gerald Winslow

Zane Yi

#### Associated faculty

David Larson

Richard Rice

Siroj Sorajjakool

James W. Walters

#### Emeritus professor

Ivan Blazen

David L. Taylor, Jr.

#### Research professor

Bernard Taylor

Sigve Tonstad

## 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. 23) 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.
- See admission requirements for individual program in this CATALOG for G.P.A. requirements.
- A personal interview is desirable and should be arranged with the director of the program in which the student wishes to study.
- Because 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 for some programs in which completed applications are reviewed and students are accepted on a continual basis. Applications must be completed by the deadlines listed for the program in which the student wishes to enroll:

Master of Arts degree in bioethics and Master of Arts degree in religion and science

- Autumn Quarter: August 1 — Early Admissions for Autumn: May 1
- Spring Quarter: February 15 — Early Admissions for Spring: Nov. 1

Masters of Science in Chaplaincy degree

- Autumn Quarter: November 1 — Late Admissions for Autumn: May 1

## 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

Upon approval, students may be admitted to a School of Religion program while admitted to another program at Loma Linda University. Concurrent programs may be either formal (established curriculum in the University Catalog) or informal. Certain criteria must be met for both formal and informal concurrent programs before approval. The exception to this are the combined degrees programs (p. 428), discussed at the end of Section III of this CATALOG.

## Financial information

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

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

## On- and off-campus student housing

Students may go to [llu.edu/central/housing](http://llu.edu/central/housing) (<http://www.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

- Bioethics – M.A., Certificate (p. 419)
- Chaplaincy – M.S.Chap. (p. 420)
- Denominational Studies for Chaplains – Certificate (p. 422)
- Religion and Society – M.A. (p. 423)

## Bioethics – M.A., Certificate

**Program director**  
Whitny Braun

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, biotechnology, and bioethics.

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 careers 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, as well as close proximity to Loma Linda University Medical Center and numerous physicians involved in clinical and research ethics.

## Program learning outcomes

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 coursework as herein specified, with an overall grade average of B+ (3.30) or higher, with no grade lower than a C, and no grade lower than a B- in a required course.

## Transfer credits

Students are permitted to transfer up to eight units of approved graduate-level courses from other accredited institutions into the Bioethics Program. Approval must be requested from the program director.

## 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. A two-part comprehensive exam will be administered at the end of Master Seminar I. All program faculty members 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. Papers demonstrate the ability to identify an issue, analyze it, use relevant literature, and creatively conceptualize or advance the discussion. Students who are professionals are encouraged to write for their professional publications, adopting relevant size and editorial considerations. Paper(s) will total 20–25 pages.

## Admissions

In addition to Loma Linda University (p. 23) and School of Religion (p. 418) admissions requirements, the applicant must also complete the following requirements:

Typically, applicants will meet the following criteria for admission:

1. A four-year baccalaureate degree (or its equivalent) from an accredited college or university;



- 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;
- An undergraduate grade point average of B+ (3.30) or better in the overall program;
- 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;
- A personal interview;
- 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](http://llu.edu/central/apply) (<http://www.llu.edu/central/apply/>).

## Program requirements

### M.A.

#### Required

RELE 524	Bioethics and Society	3
RELE 545	Bioethics Case Conference I	1
RELE 588	Philosophical Ethics	3
RELE 589	Biblical Ethics	3
RELE 598	Master's Seminar I	3
RELE 599	Master's Seminar II	2
RELG 510	Christian Service <sup>2</sup>	1

#### Standard electives

Choose required units from the following: <sup>1</sup>		32
RELE 515	Faith and Flourishing	
RELE 522	Bioethical Issues in Social Work	
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 556	Clinical Practicum III	
RELE 564	Ethics and Health Disparities	
RELE 565	Aesthetics and Ethics	
RELE 566	History of Health-Care Ethics	
RELE 567	World Religions and Bioethics	
RELE 568	Bioethics and the Law	
RELG 674	Reading Tutorial	
RELG 697	Independent Research	

**Total Units** **48**

<sup>1</sup> Up to 8 units of approved graduate-level courses from other LLU schools or other accredited institutions may be chosen.

<sup>2</sup> Fulfills service learning requirement

### Normal time to complete the program

1.33 years (five [5] academic quarters) – based on full-time enrollment; part time permitted

### Certificate

Certificate in Bioethics is not accepting applications for 2022-2023.

#### Required

RELE 524	Bioethics and Society	3
RELE 588	Philosophical Ethics	3
RELE 589	Biblical Ethics	3
RELG 510	Christian Service	1

#### Standard electives

Choose required units from the following:		18
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	Aesthetics and Ethics	
RELE 566	History of Health-Care Ethics	
RELE 567	World Religions and Bioethics	
RELE 568	Bioethics and the Law	

**Total Units** **28**

### Normal time to complete the program

One (1) year (three [3] academic quarters) – based on full-time enrollment; part time permitted

## Chaplaincy – M.S.Chap.

#### Program director

Saul Barcelo (Interim)

The Master of Science in Chaplaincy (M.S.Chap.) program is theological and clinically based chaplaincy education at Loma Linda University. It has been developed using guidelines established by the Association of Professional Chaplains (APC), which oversees and rigorously maintains "best practice" standards for the chaplaincy profession. It is designed to meet a variety of student needs, including:

- Provision of APC full board certification academic requirements.
- Providing a professional degree that blends theological study with clinical experience.
- Providing specialty training in spiritual care and/or chaplaincy.
- Preparing students for employment as professional chaplains.

Graduates of the program receive excellent academic training enhanced by professional, clinical, and ministerial experience. The program's goal is to prepare chaplains who can model the "teaching and healing ministry of Jesus Christ," and who are trained at the highest level of Christian professionalism, in preparation for full board certification by the APC.

Students are required to complete four (4) units of clinical professional education (CPE) credits prior to graduation. As a premier teaching and research medical complex, Loma Linda University Health (LLUH) provides an excellent setting for experiencing clinical aspects of this program and is an accredited Clinical Pastoral Education (CPE) Center.

(Students are not required to complete their clinical internships at LLU and are able to meet this requirement at any ACPE-approved site in North America. Visit the ACPE-approved centers web page here ([https://www.acpe.edu/ACPE/Directory/Accredited\\_Centers.aspx](https://www.acpe.edu/ACPE/Directory/Accredited_Centers.aspx)) to view a list of available sites. Separate application, fees, and acceptance procedures are required for this component of the program.) To increase diverse learning experiences, students are requested to complete a maximum of two (2) CPE units at Loma Linda University Medical Center.

The professors represent areas of expertise such as biblical studies, theology, practical theology, marriage and family therapy, cultural psychology, American church history, health education, nursing, spiritual care, and ethics. In addition, clinical faculty members across many health-care professions are involved in the program. This diversity of specialists provides students a rich and balanced program of study.

All courses are taught from a Christian perspective. Students from more than 65 religions and 80 countries study here. A mutual and shared respect for various cultures and beliefs is emphasized on campus and in the classroom. Small class sizes allow for specified instruction and personal growth.

The program draws upon resources across the entire Loma Linda University campus. These include the Chaplain Services of LLUH and the Center for Whole Person Care—both of which provide a rich context in which to study chaplaincy. The Center for Whole Person Care is dedicated to promoting and supporting wholeness in individuals, as well as providing tools for health-care professionals across various disciplines to use in whole-person care for their patients. The center sponsors a number of programs, along with the Center for Christian Bioethics, that minister to the spiritual and intellectual needs of students, staff, and patients.

## Program learning outcomes

The following address competencies in four chaplaincy areas. By the end of this program, the graduate should be able to:

- Integrate theory and practice competencies into chaplaincy.
- Exhibit professional identity and conduct as a chaplain.
- Demonstrate professional practice skills.
- Function effectively in organizational leadership.

## Transfer credits

Students are permitted to transfer up to 14 units of approved graduate-level courses from other accredited institutions into the M.S. in Chaplaincy Program.

## Admissions

In addition to Loma Linda University (p. 23) and School of Religion (p. 418) admissions requirements, the applicants to the M.S. in Chaplaincy Program are expected to:

- A four-year baccalaureate degree (or its equivalent) from an accredited institution
- Grade point average of B (3.0) or better in the overall program and in the major field
- Writing samples: CV, personal statement, and previous research paper (qualitative or quantitative)
- Three letters of recommendation (two academic and one pastoral)

- Admissions Interview
- One (1) unit of CPE highly preferred

## Program requirements

Students must complete 108 quarter credits from the list below, with an overall grade point average of B (3.0) or better, with no grade lower than C, and no grade lower than a B- in a core course.

### Core

RELE 548	Christian Social Ethics	3
RELE 567	World Religions and Bioethics	3
RELE 589	Biblical Ethics	3
RELG 504	Research Methods in Religious Studies	4
RELR 520	Clinical Training in Spiritual Care I	4
RELR 521	Clinical Training in Spiritual Care II	4
RELR 526	Pastoral and Professional Formation	4
RELR 527	Crisis Care and Counseling	3
RELR 535	Spirituality and Mental Health	3
RELR 540	Wholeness and Health <sup>1</sup>	3
RELR 565	Practical Theology and Methodology	3
RELR 567	Pastoral Counseling	4
RELR 568	Care of the Dying and Bereaved	3
RELR 574	Preaching	3
RELR 584	Culture, Psychology, and Religion	3
RELR 587	Religion and the Social Sciences	3
RELT 500	Biblical Hermeneutics	3
RELT 508	Contemporary Christian Theology	3
RELT 520	Church History	3
RELT 557	Theology of Human Suffering	3
RELT 558	Old Testament Thought	3
RELT 559	New Testament Thought	3

### Electives

Choose from the following or other courses as approved by advisor. 21

RELE 515	Faith and Flourishing	
RELE 522	Bioethical Issues in Social Work	
RELE 524	Bioethics and Society	
RELE 525	Ethics for Scientists	
RELE 535	Ethical Issues in Health-Care Management	
RELE 545	Bioethics Case Conference I	
RELE 546	Bioethics Case Conference II	
RELE 564	Ethics and Health Disparities	
RELE 565	Aesthetics and Ethics	
RELE 568	Bioethics and the Law	
RELE 577	Theological Ethics	
RELE 588	Philosophical Ethics	
RELR 525	Health Care and the Dynamics of Christian Leadership	
RELR 536	Spirituality and Everyday Life	
RELR 575	Whole Person Care	
RELR 588	Personal and Family Wholeness	
RELT 501	Religion and Society	
RELT 502	Religion and Society	
RELT 503	Religion and Society	

RELT 504	Daniel and the Prophetic Tradition
RELT 506	Seventh-day Adventist Beliefs
RELT 515	Faith and Flourishing
RELT 527	The Bible and Ecology
RELT 540	World Religions and Human Health
RELT 555	The Adventist Experience
RELT 560	Jesus the Revealer: The Message of the Gospel of John
RELT 565	Vision of Healing: The Message of the Book of Revelation
RELT 615	Seminar in Philosophy of Religion
RELT 617	Seminar in Religion and the Sciences

**Project**

RELG 696	Project	4
Internship (12 units of RELG 795, listed below, count toward the 108 units required for ACP board certification)		12

**Total Units** **108**

**Internship**

Internship units do not count toward minimum didactic units required for the degree.

RELG 795	Clinical Internship (12 units = 400 hours)	48
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**Total Units** **48**

<sup>1</sup> Fulfills service learning requirement

**Clinical internship**

Students must also satisfactorily complete two (2) units of clinical pastoral education (CPE) at an accredited CPE Center—400 clinical hours consists of one (1) unit (1 unit consists of 10 weeks for an intensive unit or 16 weeks for an extended unit). Each registration of RELG 795 Clinical Internship earns one (1) unit of CPE required by the APC board for certification. Twelve (12) of the 48 internship units from one of the two CPEs can be counted toward both graduation and the APC board certification.

**Project**

When students have completed the majority of their coursework and at least some clinical work, they must also be able to articulate, in written form, all chaplaincy competencies, as defined by the Association of Professional Chaplains (APC). This will be based on their theoretical understanding, reflection, and personal experiences.

**Noncourse requirements****Annual Evaluation**

Students will be evaluated on their academic and clinical competencies at the end of Spring quarters of their first and second years.

**Dean's Exit Interview**

Graduate candidates are required to attend exit interviews with the Dean of the School of Religion during the Spring quarter of their graduation year.

**Normal time to complete the program**

Three (3) years (11 consecutive academic quarters) — based on full-time enrollment; part time permitted

# Denominational Studies for Chaplains – Certificate

**Program director**

Jon Paulien

Students are encouraged to inquire regarding admissions.

The fully online Denominational Studies for Chaplains Program is designed for practicing chaplains who lack academic coursework 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.
4. Seventh-day Adventist health, wellness, and lifestyle issues.

## Teaching methodology

The educational 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 learning management system (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 via video conference communication technology.

## Program learning outcomes and performance

By the end of this program, the graduate should be able to:

1. Explain Adventist theological uniqueness and the biblical foundations of its doctrines.
2. Demonstrate competent use of Scriptures.
3. Explain Christian theology and history, with specific attention to Seventh-day Adventist life and thought.
4. Integrate Adventist doctrines into their ministry and as a representative of the Seventh-day Adventist Church.
5. Synthesize individual Adventist versions of philosophies of ministry within the health-care setting.

## Transfer credits

No transfer units are accepted for the Denominational Studies for Chaplains Program.

## Admissions

In addition to Loma Linda University (p. 23) and School of Religion (p. 418) admissions requirements, the applicants to the Denominational Studies for Chaplains Program are expected to present/complete:

1. A college baccalaureate degree from an accredited institution.
2. A minimum overall undergraduate grade point average of 3.00. A provisional acceptance for eight 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 eight units.
3. Documentation of having been a chaplain and received a recommendation from ACM.
4. Two recommendations (one professional/ministerial and one from a former professor or academic advisor).
5. Statement of research interest and sample paper.

## Program requirements

In order to receive the certificate in denominational studies for chaplains from Loma Linda University, a student must complete all courses listed below, with an overall grade point average of B (3.0) or higher, with no grade lower than a B- (2.7). No electives are offered.

### Required

RELR 540	Wholeness and Health	3
RELR 541	History of Seventh-day Adventist Chaplaincy and Healthcare Policy Making	4
RELT 500	Biblical Hermeneutics	3
RELR 595	Independent Study in Chaplaincy	1
RELT 504	Daniel and the Prophetic Tradition	3
RELT 505	Seventh-day Adventist History	3
RELT 506	Seventh-day Adventist Beliefs	3
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
<b>Total Units</b>		<b>26</b>

### Normal time to complete the program

Two (2) years (eight [8] academic quarters) – based on less than half-time enrollment

## Religion and Society – M.A.

### Program director

Zdravko Plantak

The Master of Arts in religion and society offers customizable options of study and is designed for those seeking to serve the church and world in the 21st century in a variety of capacities. The program is ideal for individuals seeking deeper biblical, theological, and philosophical insight; spiritual growth; practical competency; and cultural literacy in the context of a range of vocational settings—health care, the local church

(non-ordained ministry), non-profit organizations, secondary education (teaching certifications must be obtained independently), and further graduate study.

Students may complete this program prior to beginning professional or graduate school. Students enrolled or enrolling in other Loma Linda University programs may be interested in pursuing this program as part of a dual degree. Others may seek to complement courses of study already completed.

The curriculum covers the basic areas of theology, biblical studies, and Christian spirituality, and may also be customized for a particular area of interest. Using the resources of the School of Religion and the entire University, each student and mentor will formulate and acquire faculty approval for a personalized area of emphasis that matches personal interests and qualifications. Possible areas of emphasis include:

- Biblical studies.
- Christian theology.
- Science and religion.
- Health care.
- Wholeness/whole-person care.
- Spirituality.
- Social ethics.
- Bioethics.

Students may progress through the program at their own pace (up to five years maximum). All students must have a demonstrated proficiency with technology and have access to personal computers and the Internet.

Professors in the program represent areas of expertise such as biblical studies, theology, philosophy, world religions, practical theology, marriage and family therapy, cultural psychology, American church history, health education, nursing, spiritual care, and ethics. This diversity of specialists provides students with a rich and balanced program of study.

A mutual and shared respect for various cultures and beliefs is emphasized on the campus and in the classroom. Small class sizes allow for personalized instruction and engaged participation.

The program draws upon resources across the Loma Linda University campus. These include the Center for Whole Person Care, the Center for Christian Bioethics, and the Center for Understanding World Religions that offer multiple programs, conferences, and lecture series intended for student enrichment.

## Mentors

Before the student has completed half of the program or sooner, 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.

## Program learning outcomes

By the end of this program, the graduate should be able to:

1. Responsibly interpret the Bible in an increasingly scientific, globalized, and pluralistic society:
  - a. Analyze major themes of Old Testament theology.
  - b. Analyze major themes of New Testament theology.
  - c. Apply basic principles of exegesis and hermeneutics to the Bible.
2. Assess Christian reflection and praxis as it engages with culture(s):

- a. Identify core tenants of classical Christian theology from a Seventh-day Adventist perspective.
  - b. Evaluate models of the relationship between church and culture.
  - c. Analyze one instance of cultural/theological contextualization and preservation.
3. Demonstrate a broad, basic knowledge of the field of ethics:
    - a. Compare major schools of normative ethics—deontological, consequentialist, and virtue.
    - b. Articulate ethical emphases in Christian Scripture.
    - c. Address a contemporary ethical issue utilizing Christian Scripture.
  4. Demonstrate growth in spiritual maturity:
    - a. Develop a personal theology of wholeness.
    - b. Engage in practices that help attune one's self to the spiritual meaning of everyday activities.
    - c. Recognize a commitment to community involvement and service as a crucial component of wholeness.

## Periodic review

In addition, each student's achievements will be assessed every 12 units to determine the advisability of continuing in the program.

## Prerequisite

There are no prerequisites for this program. However, those who enter having taken few or no courses in religion must structure their programs considering the requirements. 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 12 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 515 Faith and Flourishing—which may be taken in any sequence, provides intensive introductions to the field. One course is offered each quarter during the academic school year, and a course may also be offered during the summer. The fourth required course is the final project (RELG 696 Project). These four, 3-unit courses, totaling 12 units, constitute a fourth of the program. The remaining twelve courses, totaling 36 units and three-fourths of the program, fulfill core and course distribution requirements.

## 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. 23) and School of Religion (p. 418) admissions requirements, the applicants to the M.A. in Religion and Society Program are expected to present/complete:

- A bachelors degree from an accredited institution. An undergraduate degree in religion is not required.
- An overall undergraduate Grade Point Average (G.P.A.) of at least 3.25.

- Acceptable scores in an approved standardized test such as the Graduate Record Exam (GRE), Medical College Admissions Test (MCAT) or Law School Admissions Test (LSAT).
- An essay (1,000 words) that specifies why the applicant is interested in this program, relevant background experiences, and how the program fits into personal and professional plans.
- A writing sample (usually drawn from previous academic work) emailed directly to religion@llu.edu.
- An interview.
- Three letters of recommendation from previous teachers or mentors.

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 their interests and goals overlap enough to make it a mutually beneficial experience.

## Provisional Admission

A student who is promising, even though they do not meet one or more of the admission requirements, may be given provisional acceptance for up to 12 units of study after which the administrative committee will determine whether or not they 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 coursework as herein specified, with an overall grade point average of B+ or better, and no core course lower than a B.

### Required

RELE 588	Philosophical Ethics	3
RELE 589	Biblical Ethics	3
RELR 536	Spirituality and Everyday Life	3
RELR 540	Wholeness and Health <sup>1</sup>	3
RELT 500	Biblical Hermeneutics	3
RELT 501	Religion and Society	3
RELT 502	Religion and Society	3
RELT 515	Faith and Flourishing	3
RELT 520	Church History	3
RELT 558	Old Testament Thought	3
RELT 559	New Testament Thought	3

### Individual area of emphasis <sup>2</sup>

Select from the School of Religion or another school on campus	12
RELG 696 Project	3

**Total Units** **48**

<sup>1</sup> Fulfills service learning requirement

<sup>2</sup> Approved clusters of courses that focus on an area of student interest. Twelve units may be taken either at the School of Religion or elsewhere on campus, with approval.

## Individualized Program Proposal

Before completing half of the program (24 units), with the mentor, the student will submit an individualized program for approval to the administrative committee. This will detail courses and other experience that will fulfill the degree's requirements as well as establish the acceptable area of emphasis.

**Normal time to complete the program**

Two (2) years (six [6] academic quarters) – based on full-time enrollment;  
part time permitted



# FACULTY OF GRADUATE STUDIES

## Interim Director'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 (FGS). The FGS 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 FGS encourages students to engage in original research and creative study that will expand opportunities for wholeness, service, and mutual respect. You will find vigorous academic programs among the degrees sponsored by the faculty—studies that will stretch your mind and that will encourage you to expand the boundaries of knowledge, understand your world, and apply Christian principles to your life and profession.

Our faculty and staff are here to assist you as you prepare for a career of creative service. Feel free to contact us by email at [provost@llu.edu](mailto:provost@llu.edu).

Ronald Carter, Ph.D.  
Provost and Interim Director, 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—separated in 1990.

In 2005, the Graduate School was restructured as the Faculty of Graduate Studies. Since then, FGS has continued to provide oversight of graduate programs, supported by other schools of the university, promoting and encouraging independent judgment, mastery of research techniques, contribution to scholarly communication, and intellectual achievement in the service of humankind.

## Philosophy

In the FGS at 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 fields of study. They also participate with faculty in the process by which knowledge is augmented.

## Objectives

The FGS seeks to create an environment favorable to the pursuit of knowledge and meaning by:

1. Making available the education necessary for scholarly careers in the sciences and health professions to graduate students who wish to study in a Seventh-day Adventist Christian setting.
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 regarding policies and regulations pertinent to registration, matriculation, and graduation, and for satisfactorily meeting those requirements. Section III provides the general setting for school programs. Subject and unit requirements for admission to individual professional programs are also outlined. It is important to review specific program requirements in the context of general requirements applicable to all programs (Section II).

## Application and admissions

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 the university. The admissions committees of the schools accomplish this through examination of 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 the 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 respective school(s) deans. If an 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 equivalent in quality and scope, to their doctoral program.

## Financial information

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.

Registration is not complete until tuition and fees on the required installment are paid. Students 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.

## 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. 280)
- Biology – M.S. (p. 262)
- Bioethics – M.A. (p. 419)
- Cancer, Developmental, and Regenerative Biology – M.S. (p. 251)
- Endodontics – M.S. (p. 228)
- Geology – M.S. (p. 274)
- Implant Dentistry – M.S. (p. 231)
- Infection, Immunity, and Inflammation – M.S. (p. 254)
- Neuroscience, Systems Biology, and Bioengineering – M.S. (p. 257)
- Nutrition – M.S. (p. 406)
- Orthodontics and Dentofacial Orthopedics – M.S. (p. 233)
- Pediatric Dentistry – M.S. (p. 234)

- Periodontics – M.S. (p. 236)
- Prosthodontics – M.S. (p. 237)
- Religion and Society – M.A. (p. 423)

### Doctoral degrees

- Anatomy – Ph.D. (p. 280)
- Biology – Ph.D. (p. 262)
- Cancer, Developmental, and Regenerative Biology – Ph.D. (p. 252)
- Earth Science – Ph.D. (p. 266)
- Epidemiology – Ph.D. (p. 410)
- Infection, Immunity, and Inflammation – Ph.D. (p. 255)
- Medical Scientist Training Program – M.D./Ph.D. (p. 287)
- Neuroscience, Systems Biology, and Bioengineering – Ph.D. (p. 258)
- Nursing – Ph.D. (p. 373)
- Nutrition – Ph.D. (p. 413)
- Physical Therapy – Ph.D. (p. 117)
- Psychology (clinical psychology) – Ph.D. (p. 172)
- Rehabilitation Science – Ph.D. (p. 61)
- Social Welfare and Social Research – Ph.D. (p. 184)
- Systems, Families and Couples – Ph.D. (p. 169)

# THE COMBINED DEGREE PROGRAMS OF THE UNIVERSITY

A number of combined degrees programs are offered—each intended to provide additional preparation in the biomedical sciences or in the clinical, professional, or basic areas related to the student's field of interest. The combined degrees programs provide opportunities for especially well-qualified (G.P.A. of 3.5 or higher) and motivated students to pursue professional and graduate education as well as prepare for careers in clinical specialization, teaching, or investigation of problems of health and disease in humans.

For admission to a combined degrees program, each student 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) to accommodate courses and research for the graduate degrees 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 formally combined degrees programs identified below or from informal concurrent programs. Students wanting to pursue informal concurrent degree programs must be granted permission by the director of the primary program in order to proceed with their requests. Formal requests are required to adhere to the policy on concurrent graduate degree programs. Final permission for an informal concurrent degree program must be obtained from the appointed subcommittee of the provost.

If a student chooses to withdraw from one program at any time, they must meet all requirements for the remaining degree. A student who decides to return to the second program, after having completed the first program, must reapply, be admitted, and fulfill all requirements for the second degree.

## Programs

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 *or* 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.A. degree in bioethics. Such programs list the primary degree program first.

Counseling (BH) *with* Marital and Family Therapy (BH) *with* Drug and Alcohol Counseling Certificate (BH)—M.S./M.S./Certificate (p. 428)

Criminal Justice (BH) *with* Social Work (BH)—M.S./M.S.W. (p. 437)

Dentistry (SD) *with* Bioethics (SR)—D.D.S./M.A. (p. 429)

Gerontology (BH) *with* Social Work (BH)—M.S./M.S.W. (p. 438)

Marital and Family Therapy (BH) *with* Counseling (BH)—*with* Drug and Alcohol Counseling Certificate (BH)—M.S./M.S./Certificate (p. 428)

Medical Scientist (SM)—M.D./Ph.D. (p. 287)

Medicine (SM) *with* Bioethics (SR)—M.D./M.A. (p. 430)

Medicine (SM) *with* Population Medicine (PH)—M.D./M.P.H. (p. 431)

Medicine (SM) *with* Religion and Society (SR)—M.D./M.A. (p. 431)

Oral and Maxillofacial Surgery (SD) *with* Medicine (SM)—Post-D.D.S. specialty certificate/M.D. (p. 432)

Pharmacy (SP) *with* Bioethics (SR)—Pharm.D./M.A. (p. 434)

Pharmacy (SP) *with* Health Informatics (AH)—Pharm.D./M.S. (p. 434)

Pharmacy (SP) *with* Health Professions Education (AH)—Pharm.D./M.S. (p. 435)

Social Work (BH) *with* Criminal Justice (BH)—M.S.W./M.S. (p. 437)

Social Work (BH) *with* Gerontology (BH)—M.S.W./M.S. (p. 438)

## Counseling—M.S. with Marital and Family Therapy—M.S. with Drug and Alcohol Counseling Certificate

Graduates of this dual-degree with certificate program receive a master's degree in counseling, a master's degree in marital and family therapy, and a certificate in drug and alcohol counseling. Completion of the program requires a minimum of 11 quarters of full-time attendance. The 121-unit curriculum provides a mix of academic, experiential, and research activities essential for practice as a clinical counselor, marriage and family therapist, and drug and alcohol counselor. Students with the dual degree have licensure options providing maximum flexibility. Graduates of this program are qualified to sit for national counseling licensure and the California-specific LPCC license, as well as sit for MFT licensure in California and obtain MFT licensure around the country with fewer requirements—given the program's COAMFTE accreditation. Also, graduates may qualify for additional national certifications in addictions/drug and alcohol counseling.

For more information regarding the individual programs that constitute this dual-degree with certificate program, please review the campus-based M.S. in marital and family therapy (p. 161), M.S. in counseling (p. 158), and certificate in drug and alcohol counseling (p. 160) catalog pages.

## Admissions

Applicants must meet the admission requirements for each program: M.S. degree in counseling (p. 158), and M.S. degree in marital and family therapy (p. 161) and the certificate in drug and alcohol counseling (<http://llu.catalog llu.edu/behavioral-health/drug-alcohol-counseling-certificate/>).

## Program requirements

Students must maintain a grade point average of 3.0 on a 4.0 point scale (a letter grade of B) in order to progress successfully through the program and complete the degree. In addition, students must meet the knowledge, skills, and professional performance competencies outlined by the program. Students must meet both course and cumulative G.P.A.

standards and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

Courses applicable to both degrees:

COUN/MFAM 501	Research Tools and Methodology: Quantitative	3
COUN/MFAM 502	Research Tools and Methodology: Qualitative	3
COUN/MFAM 515	Crisis Intervention and Client Advocacy	3
COUN/MFAM 524	Psychopharmacology and Medical Issues	3
COUN/MFAM 528	Culture, Socioeconomic Status in Therapy	3
COUN 540	Professional Counseling Orientation	3
or MFAM 535	Case Presentation and Professional Studies	
COUN/MFAM 547	Social Ecology of Individual and Family Development	3
COUN/MFAM 556	Psychopathology and Diagnostic Procedures	3
COUN/MFAM 568	Groups: Process and Practice	3
COUN/MFAM 584	Advanced Child and Adolescent Development	3
COUN/MFAM 604	Social Context in Clinical Practice: Gender, Class, and Race	3
COUN/MFAM 614	Law and Ethics	3
COUN/MFAM 624	Individual and Systems Assessment	3
COUN/MFAM 638	Substance Use Disorders, Relationships, and Recovery	3
COUN/MFAM 644	Child Abuse and Family Violence	3
COUN/MFAM 674	Human Sexual Behavior	3
COUN 675	Dynamics of Aging	1
MFAM 553	Family Systems Theory	3
RELR 540	Wholeness and Health <sup>1</sup>	3

Discipline-specific courses:

#### Marital and family therapy

MFAM 536	Case Presentation and Documentation	3
MFAM 537	Case Presentation	3
MFAM 551	Family Therapy: Foundational Theories and Practice	3
MFAM 552	Couples Therapy: Theory and Practice	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 635	Case Presentation and Legal Issues	3
MFAM 636	Case Presentation and Client-Centered Advocacy	3
MFAM 637	Case Presentation and Global Practices	3

Choose one theory course from the following: 2

MFAM 539	Solution-Focused Family Therapy	
MFAM 555	Narrative Family Therapy	
MFAM 559	Cognitive-Behavioral Couples Therapy	
MFAM 605	Gestalt Family Therapy	
MFAM 606	Emotionally Focused Couples Therapy	
MFAM 665	Structural and Multidimensional Family Therapy	

#### Counseling

COUN 575	Counseling Theory and Applications	3
COUN 576	Exceptional and Medically Challenged Children <sup>1</sup>	3
COUN 577	Assessment in Counseling <sup>1</sup>	3
COUN 579	Career Theories and Applications <sup>1</sup>	4
COUN 678	Consultation and Program Evaluation <sup>1</sup>	3

COUN 580	Advanced Counseling Theory and Techniques	4
COUN 541	Clinical Practicum Seminar – Early Counselor Development	2
COUN 542	Clinical Internship Seminar – Spirituality	2
COUN 543	Clinical Internship Seminar – Multicultural and Cross-Cultural Interactions	2
COUN 544	Clinical Internship Seminar – Recovery-Oriented Care	2
COUN 546	Clinical Internship Seminar – Substance Use Disorder Treatment	2

#### Drug and alcohol counseling certificate:

MFAM 645	Advanced Treatment Strategies – Substance Use Disorders	3
MFAM 654	Practicum in Drug and Alcohol Counseling <sup>1</sup>	4

**Total Units** 121

<sup>1</sup> One unit course taken four time over four quarters for a total of four units.

## Clinical hours

In addition to the above, students are required to meet Board of Behavioral Sciences (BBS), Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), and Department of Counseling and Family Sciences minimum clinical hour requirements for graduation.

Clinical hours overlap and can count for both degrees and certificate, in consultation with the Directors of Clinical Training.

At graduation, total student hours will range from 420 – 620 depending on population served while in clinical placement.

#### Marital and family therapy (minimum COAMFTE requirement)

MFAM 731	Clinical Training	6
MFAM 732	Clinical Training	9

#### Counseling (minimum BBS requirement)

#### Drug & Alcohol Counseling certificate (minimum CFS requirement)

## Normal time to complete the program

3.67 years (11 academic quarters) based on full-time enrollment; part time permitted

# Dentistry – D.D.S. with Bioethics – M.A.

**Program director, Bioethics, School of Religion**  
Whitny Braun

**Program coordinators, School of Dentistry**  
Mark Estey, DDS

## Faculty

The faculty for the combined degrees program in Bioethics *with* Dentistry is drawn from Loma Linda University's Schools of Religion and Dentistry.

## Admissions

Students are selected through a competitive process led by the School of Dentistry in conjunction with the School of Dentistry's Bioethics Program.



Selection is based upon the recommendation of the School of Dentistry's academic dean and dean of students as well as standard admission criteria for the M.A. degree in bioethics. DAT scores are accepted in lieu of the GRE.

## 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 and its 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. The 8 units earned from the following four, two-unit courses in the dental curriculum can be 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. In order for these eight units to be counted toward the M.A. degree, the student must submit a supplemental eight-page paper that integrates the content of these four courses and relates the 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 paper is approved.
2. In addition, 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 two-unit religion selective from 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 counted double 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
<b>Total Units</b>		<b>8</b>

### A model curriculum of bioethics course work taken throughout the four years of the dentistry program

#### First Year

##### Winter Quarter

RELE 545	Bioethics Case Conference I	1
RELG 510	Christian Service	1

##### Second Year

##### Spring Quarter

RELE 566	History of Health-Care Ethics	3
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##### Third Year

##### Summer Quarter

RELE 524	Bioethics and Society	3
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#### Autumn Quarter

RELE 564	Ethics and Health Disparities	3
RELE 554	Clinical Ethics Practicum I	3

#### Winter Quarter

RELE 555	Clinical Ethics Practicum II	3
RELE 568	Bioethics and the Law	3

#### Spring Quarter

RELE 567	World Religions and Bioethics	3
RELE 556	Clinical Practicum III	3

#### Fourth Year

##### Summer Quarter

RELE 589	Biblical Ethics	3
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##### Winter Quarter

RELE 598	Master's Seminar I	3
RELE 556	Clinical Practicum III	3

##### Spring Quarter

RELE 599	Master's Seminar II	2
RELE 565	Aesthetics and Ethics	3

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**Total Units:** **40**

<sup>1</sup> To be taken concurrently with RELE 524 Bioethics and Society. Contact program director for details.

## Medicine – M.D. with Bioethics – M.A.

### Program director, Bioethics, School of Religion

Whitny Braun

### Program liaison, School of Medicine

Amy Hayton

### Faculty

The faculty for the combined degree program in Bioethics with Medicine are 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 (without the GRE requirement 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 and related courses. However, the combined M.A./M.D. student is able to reduce the total required units by sharing 12 units between the two programs in the following manner.

### First, Second, & Third Years

Standard M.D. curriculum
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### Fourth Year

M.A. Coursework
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### Courses in M.D. curriculum shared with M.A. curriculum

RELR 704	Orientation to Christian Physician Formation	2
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RELE 708	Medicine and Ethics	1
RELE 714	Advanced Medical Ethics	2
RELR 774	Whole-Person Care for Physicians	1
RELT 716	God and Human Suffering	2
or RELT 740	World Religions and Human Health	
MCPF 710	Christian Physician Formation <sup>1</sup>	3
<b>Summer Quarter</b>		
RELG 510	Christian Service	1
RELE 524	Bioethics and Society	3
RELE 545	Bioethics Case Conference I	1
<b>Autumn Quarter</b>		
RELE 546	Bioethics Case Conference II	1
RELE 554	Clinical Ethics Practicum I	3
RELE 588	Philosophical Ethics	3
RELE 589	Biblical Ethics	3
<b>Winter Quarter</b>		
RELE 548	Christian Social Ethics	3
RELE 555	Clinical Ethics Practicum II	3
RELE 568	Bioethics and the Law <sup>2</sup>	3
or RELE 534	Ethical Issues in Public Health	
RELE 598	Master's Seminar I <sup>2</sup>	3
or RELE 534	Ethical Issues in Public Health	
RELE 542	Bioethics Integration I	1
<b>Spring Quarter</b>		
RELE 556	Clinical Practicum III	3
RELE 565	Aesthetics and Ethics <sup>2</sup>	3
or RELE 567	World Religions and Bioethics	
RELE 599	Master's Seminar II <sup>2</sup>	3
or RELE 567	World Religions and Bioethics	
RELE 543	Bioethics Integration II	1
<b>Total Units</b>		<b>49</b>

<sup>1</sup> Two additional units can be shared from a School of Medicine block course with the submission of integration papers in RELE 542 Bioethics Integration I and RELE 543 Bioethics Integration II.

<sup>2</sup> Recommended elective courses.

## Medicine – M.D. with Population Medicine – M.P.H.

**Program director, Population Medicine, School of Public Health**  
Lori Wilber

**Program liaison, School of Medicine**  
(currently vacant)

### Faculty

The faculty for the combined degrees Population Medicine with Medicine Program is drawn from Loma Linda University's Schools of Public Health and Medicine.

### Admissions

Students are selected through a process involving both the School of Medicine and School of Public Health. Selection is based on standard

admission criteria for the M.P.H degree in population medicine—especially alignment of professional goals with the population medicine program learning outcomes.

### The program

The program is designed for physicians seeking to improve health on both the individual and population levels. The curriculum includes applied practice of risk assessment and communication, prevention, leadership, physician well-being, and evidence-based practice.

An M.P.H. degree in population medicine taken as a stand-alone degree requires 56 units in public health and related courses. However, the M.D./M.P.H combined degree student is able to reduce the total units required by sharing 17.5 units between the two programs in the following manner:

### First, Second, & Third Years

Standard M.D. curriculum

### Fourth Year

M.P.H. Coursework

### Courses in M.D. curriculum shared with M.P.H. curriculum

(Fulfills M.P.H. cognate/electives and religion requirement)

MCPF 510	Christian Physician Formation	4
MCPF 610	Christian Physician Formation	2
MCPF 710	Christian Physician Formation	3
MCSD 510	Clinical Skills Development	5.5
RELR 704	Orientation to Christian Physician Formation	2
RELE 708	Medicine and Ethics	1

### Autumn Quarter

PCOR 501	Public Health for Community Resilience	5
PMED 521	Population Medicine I	4
PMED 551	Population Medicine in Public Health I	4

### Winter Quarter

PCOR 502	Public Health for a Healthy Lifestyle	5
PMED 522	Population Medicine II	4
PMED 552	Population Medicine in Public Health II	4

### Spring Quarter

PCOR 503	Public Health and Health Systems	5
PMED 523	Population Medicine III	4
PMED 553	Population Medicine in Public Health III	4

### Fifth Year

Standard M.D. fourth-year curriculum

**Total Units** 56.5

## Medicine – M.D. with Religion and Society – M.A.

**Program director, Religion and Society, School of Religion**  
Zdravko Plantak

**Program liaison, School of Medicine**

Amy Hayton

### Faculty

The faculty for the combined degrees Religion and Society with Medicine Program is drawn from Loma Linda University's Schools of Religion and Medicine.



## Admissions

Students are selected through a competitive process involving both the School of Medicine and School of Religion. Selection is based upon standard admission criteria for the M.A. degree in Religion and Society, minus the GRE since the MCAT includes a critical-thinking component. Scholarship opportunities are available, please contact program directors for details.

## The program

The program is designed for physicians seeking to serve the church and world in the 21st century, and ideal for the medical professional seeking deeper biblical, theological, and philosophical insight, spiritual growth, practical competency, and cultural literacy. The curriculum covers the basic areas of theology, biblical studies, and Christian spirituality, and can also be customized around a particular area of interest.

An M.A. degree in religion and society taken as a stand-alone degree requires 48 units in religion and related courses. However, the M.D./M.A. combined degree student is able to reduce the total units required by sharing units between the two programs in the following manner.

### First, Second, & Third Years

Standard M.D. curriculum

### Fourth Year

M.A. coursework

### Courses in M.D. curriculum shared with M.A. curriculum

RELR 704	Orientation to Christian Physician Formation	2
RELE 708	Medicine and Ethics	1
RELE 714	Advanced Medical Ethics	2
RELT 716	God and Human Suffering	2
RELT 707	Medicine, Humanity, and God <sup>1</sup>	2
or RELT 740	World Religions and Human Health	
MCPF 710	Christian Physician Formation	3

### Summer Quarter

RELG 510	Christian Service	1
RELE 524	Bioethics and Society	3
RELT 699	Directed Study	1

### Autumn Quarter

RELT 500	Biblical Hermeneutics	3
RELT 501	Religion and Society	3
RELT 520	Church History	3
RELE 589	Biblical Ethics	3

### Winter Quarter

RELT 508	Contemporary Christian Theology	3
RELT 558	Old Testament Thought	3
RELG 696	Project	4

### Spring Quarter

RELE 515	Faith and Flourishing	3
RELT 559	New Testament Thought	3
Elective		3

### Fifth Year

Standard M.D. fourth-year curriculum

**Total Units** **48**

<sup>1</sup> Other 700-level School of Religion courses may also be used

## 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 and is designed to prepare the surgeon for certification by the American Board of Oral and Maxillofacial Surgery. Oral and maxillofacial surgery (OMFS) residents begin their residency program on the OMS service. They subsequently enter the second half of the first-year class at Loma Linda University School of Medicine with advanced standing. The residents then complete medical school over the subsequent three years. They then enter an ACGME-accredited postgraduate transitional year composed primarily of general surgery rotations. The second half of the fifth year, they continue the OMFS residency. During their final year they function as chief residents.

## 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. 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 three years of the program; tuition for the remaining years is waived.

### First Year – Oral and Maxillofacial Surgery

July – January		
GRDN 609	Professional Ethics	2
IMPD 547	Implant Dentistry Grand Rounds	1
OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	1
OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities	1
OMFS 606	Applied Surgical Anatomy	1
OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	0.5
OMFS 609	Literature Review in Oral and Maxillofacial Surgery	0.5
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice	7
OMFS 616	Application of Surgical Principles to Orthognathic Surgery	1
OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery	1
OMFS 696	Scholarly Activity in Oral and Maxillofacial Surgery	1
RELE 5__	Graduate-level Ethics	3

### First Year – Medicine

February – June		
MCSD 510	Clinical Skills Development	5.5
M CVS 510	Cardiovascular Block	9

MENR 510	Endocrine & Reproductive Block	9	OTOL 891	Otolaryngology Elective	
MPLM 510	Pulmonary Block	6	PATH 891	Pathology Elective	
RELT 716	God and Human Suffering	2	PEDS 891	Pediatrics Elective	
<b>Second Year - Medicine</b>			PHRM 891	Pharmacology Elective	
Mid June – Mid August (Oral and Maxillofacial Surgery)			PHSL 891	Physiology Elective	
OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice	7	PMRH 891	Physical Medicine and Rehabilitation Elective	
August – April			PSYT 891	Psychiatry Elective	
MAIN 610	Application & Integration Block	9.5	RADS 891	Radiology Elective	
MCPF 610	Christian Physician Formation	2	RDMN 891	Radiation Medicine Elective	
MCS D 610	Clinical Skills Development	3	SURG 891	Surgery Elective	
MMSK 610	Musculoskeletal and Skin Block	5	UROL 891	Urology Elective	
MNHB 610	Neuroscience & Human Behavior Block	16	USMLE Step 2 CK and CS (must be completed prior to the awarding of the M.D. degree in October)		
MREN 610	Renal and Urinary Block	7	<b>Fourth Year into Fifth Year – Transitional Year</b>		
RELE 708	Medicine and Ethics	1	November – October		
RELR 774	Whole-Person Care for Physicians	1	Students do not enroll through LLU during this year		
RELT 707	Medicine, Humanity, and God	2	General Surgery Internship including 8 weeks of anesthesia (one year)		
or RELT 740	World Religions and Human Health		USMLE Step 3		
<b>Third Year – Medicine</b>			<b>Fifth Year – Oral and Maxillofacial Surgery</b>		
April – April			November – June		
FMDN 701	Family Medicine Clerkship (6 weeks)	9	IMPD 547	Implant Dentistry Grand Rounds	1
GYOB 701	Gynecology and Obstetrics Clerkship (6 weeks)	9	IMPD 611	Introduction to Implant Dentistry	2
MCPF 710	Christian Physician Formation	3	IMPD 612	Advanced Implant Dentistry	2
MEDN 701	Medicine Clerkship (8 weeks)	12	OMFS 604	Selected Topics in Oral and Maxillofacial Surgery	1
MNES 791	Third-year Elective (4 weeks)	6	OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities	1
NEPS 710	Neurology/Psychiatry Clerkship (8)	12	OMFS 608	Surgical Oral and Maxillofacial Pathology Conference	0.5
PEDS 701	Pediatrics Clerkship (8 weeks)	12	OMFS 609	Literature Review in Oral and Maxillofacial Surgery	0.5
RELE 714	Advanced Medical Ethics	2	OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice	7
SURG 701	Surgery Clerkship (8 weeks)	12	OMFS 615	Current Trends in Medicine and Surgery	2
<b>Fourth Year - Medicine</b>			OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery	1
May – October			<b>Sixth Year – Oral and Maxillofacial Surgery</b>		
EMDN 821	Emergency Medicine Clerkship (2 weeks)	3	July – June		
SURG 821	Surgery Subinternship (ENT/4 weeks)	6	GRDN 601	Practice Management	2
SURG 822	Surgery Intensive Care (4 weeks)	6	OMFS 604	Selected Topics in Oral and Maxillofacial Surgery (1.0)	4
Selective (4 weeks)			OMFS 605	Integrated Orthodontic and Surgical Correction of Dentofacial Deformities (1.0)	4
MSEL 824	Fourth-Year Selective in Medicine	3	OMFS 608	Surgical Oral and Maxillofacial Pathology Conference (0.5)	2
MSEL 825	Fourth-Year Selective in Surgery	3	OMFS 609	Literature Review in Oral and Maxillofacial Surgery (0.5)	2
Select 12 units (8 weeks) from the following: 12			OMFS 614	Clinical Experience in Oral and Maxillofacial Surgery Practice (7.0)	28
ANAT 891	Anatomy Elective		OMFS 615	Current Trends in Medicine and Surgery	2
ANES 891	Anesthesiology Elective		OMFS 617	Critical Decision Making in Oral and Maxillofacial Surgery (1.0)	4
BCHM 891	Biochemistry Elective		OMFS 696	Scholarly Activity in Oral and Maxillofacial Surgery	1
DERM 891	Dermatology Elective		<b>Total Units</b>		
EMDN 891	Emergency Medicine Elective		<b>282</b>		
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				

<sup>1</sup> Chosen in consultation with the SM Associate Dean for Student Affairs

## Pharmacy – Pharm.D. with Bioethics – M.A.

### Program director, Bioethics, School of Religion

Whitny Braun

### Program director, School of Pharmacy

Michael D. Hogue

### 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 School of Pharmacy places a high premium on moral values and is a pioneer as one of the very few pharmacy schools 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. However, the M.A./Pharm.D. combined degrees allows students to double count 25 units of the required 48 units as follows:

1. Eight (8) units come from three courses in the pharmacy curriculum that are counted for M.A. degree in bioethics credit: a) RXSA 555 Epidemiology and Public Health, 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. Eight (8) units come from the substitution of three School of Religion courses in the Pharm.D. curriculum with courses in the Bioethics Program because content is duplicated.
3. Nine (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 555	Epidemiology and Public Health	3
RXSA 547	Pharmacy Law	2
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3
<b>Total Units</b>		<b>8</b>

### A model curriculum of bioethics coursework taken throughout the four years of the pharmacy curriculum

#### First Year

##### Spring Quarter

RELE 567	World Religions and Bioethics	3
RELE 565	Aesthetics and Ethics	3

#### Second Year

##### Summer Quarter

RELE 524	Bioethics and Society	3
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##### Autumn Quarter

RELE 588	Philosophical Ethics	3
RELE 545	Bioethics Case Conference I	1

##### Winter Quarter

RELE 568	Bioethics and the Law	3
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##### Spring Quarter

RELE 515	Faith and Flourishing	3
RELE 566	History of Health-Care Ethics	3

#### Third Year

##### Summer Quarter

RELE 589	Biblical Ethics	3
RELG 510	Christian Service	1

##### Autumn Quarter

RELE 554	Clinical Ethics Practicum I	3
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##### Winter Quarter

RELE 598	Master's Seminar I	3
RELE 555	Clinical Ethics Practicum II	3

##### Spring Quarter

RELE 599	Master's Seminar II	2
RELE 556	Clinical Practicum III	3

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**Total Units:** **40**

## 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. 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 at the top 10 percent of the class.
- For pharmacy students starting in the first year:
  - Minimum G.P.A. of 3.5 or ranked at the top 10 percent of the class.
  - Evidence of past coursework in informatics.

#### First Year

RELT 706	Adventist Beliefs and Life	2
RXEE 580	Introductory Pharmacy Practice Experience—Community I	3

RXPC 561	Pharmaceutical Care I	4	RXPC 763	Pharmacy Practice III	4
RXPS 501	Pharmaceutical Calculations	2	RXPS 545	Foundations of Biomedical Science V	4
RXPS 502	Pharmaceutics I	4	RXR 700A <sup>3</sup>	Professional Development	1.5
RXPS 503	Pharmaceutics II	3	RXR 700B <sup>3</sup>	Professional Development	1.5
RXPS 515	Pharmaceutics Laboratory I	0.5	RXSA 743	Health Systems, Reimbursement, and Pharmacoeconomics	3
RXPS 516	Pharmaceutics Laboratory II	0.5	RXTH 704	Special Populations	3
RXPS 541	Foundations of Biomedical Science I	4	RXTH 771	Central Nervous System II	3.5
RXPS 542	Foundations of Biomedical Science II	4	RXTH 773	Central Nervous System I	3.5
RXR 500A	Professional Development	1.5	RXTH 774	Gastrointestinal Disorders	2.5
RXR 500B	Professional Development	1.5	RXTH 775	Oncology	2.5
RXSA 547	Pharmacy Law	2	RXTH 776	Infectious Diseases	7
RXSA 555	Epidemiology and Public Health	3	Health informatics courses:		
RXSA 650 <sup>1</sup>	Biostatistics	3	Autumn Quarter:		
RXTH 560	Pharmacist-Guided Self Care	5	HLIF 526	Quality and Performance Improvement for Health Care	2
RXTH 570	Introduction to Disease Management	2.5	HLIF 530	Data Analytics and Decision Support	3
<b>Second Year</b>			HLIF 555	Health-Care Vendor and Project Management	3
RELE 705	Ethics in Pharmacy Practice	3	Winter Quarter:		
RELR 709	Christian Perspectives on Death and Dying	2	HLIF 520	Data Management: Modeling and Development	3
RXDI 664	Drug Information and Literature Evaluation	3	HLIF 550	Systems Security in Health Care	2
RXEE 680	Introductory Pharmacy Practice Experience—Community II	2	Spring Quarter:		
RXEE 690	Introduction to Hospital Pharmacy Practice	2	HLIF 540	Leadership Perspectives and Practice	4
RXPS 543	Foundations of Biomedical Science III	4	HLIF 570	Professional Portfolio	2
RXPS 544	Foundations of Biomedical Science IV	4	HLIF 575 or 584	Capstone Project and Special Topics in Health Informatics	2
RXPS 610	Pharmacokinetics	4	<b>Fourth Year</b>		
RXR 600A	Professional Development	1.5	Six (6) of the following eight (8) APPE courses required:		
RXR 600B	Professional Development	1.5	RXEE 821	Advanced Pharmacy Practice Experience I	6
RXSA 646	Principles of Management	3	RXEE 822	Advanced Pharmacy Practice Experience II	6
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3	RXEE 823	Advanced Pharmacy Practice Experience III	6
RXTH 671	Fluids and Electrolytes	2	RXEE 824	Advanced Pharmacy Practice Experience IV	6
RXTH 674	Renal and Respiratory Diseases	3.5	RXEE 825	Advanced Pharmacy Practice Experience V	6
RXTH 683	Endocrine	3.5	RXEE 826	Advanced Pharmacy Practice Experience VI	6
RXTH 684	Cardiovascular I	3.5	RXEE 827	Advanced Pharmacy Practice Experience VII	6
RXTH 685	Cardiovascular II	3.5	RXEE 828	Advanced Pharmacy Practice Experience VIII	6
Health informatics courses:			<hr/>		
Autumn Quarter:			<b>Total Units: 219.5</b>		
HLIF 510	Health-Care Information Systems	4			
HLIF 515	The U.S. Health-Care System	4			
Winter Quarter:					
HLIF 548	Human Computer Interactions	2			
HLIF 565	Technical Structures in Health Informatics	3			
Spring Quarter:					
AHCJ 555	Writing for Health-Care Professionals	3			
HLIF 525	Management of Health-Care Data and Information	2			
HLIF 545	System Design, Implementation, and Management	3			
Summer Quarter:					
<b>Third Year</b>					
RELE 706	Advanced Ethics in Pharmacy Practice	2			
RELT 740	World Religions and Human Health	3			
RXEE 790	Introduction to Clinical Pharmacy Practice	2			
RXPC 761	Pharmacy Practice I	2			
RXPC 762	Pharmacy Practice II	2			

<sup>1</sup> Fulfills AHRM 514 Biostatistics for M.S. degree in health informatics.

<sup>2</sup> 700-level religion courses taken in the PharmD program will satisfy the religion requirement for the M.S. degree in health informatics.

<sup>3</sup> The combination of RXRX 700A Professional Development and RXRX 700B Professional Development fulfills the service learning requirement.

### Normal time to complete the program

Four (4) years (13 academic quarters); full-time enrollment required

## Pharmacy – Pharm.D. with Health Professions Education – M.S.

The School of Pharmacy will interview pharmacy students who express interest in the M.S. degree in health professions education. 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 August 1 of each year. Selection will be based on the following criteria for a PY2 start year:

- Preferred G.P.A. of 3.5.
- Two letters of recommendation of School of Pharmacy faculty.
- Approval from the School of Pharmacy dean or academic dean.

**First Year**

		<b>Units</b>
RELT 706	Adventist Beliefs and Life	2
RXEE 580	Introductory Pharmacy Practice Experience–Community I	3
RXPC 561	Pharmaceutical Care I	4
RXPS 501	Pharmaceutical Calculations	2
RXPS 502	Pharmaceutics I	4
RXPS 503	Pharmaceutics II	3
RXPS 515	Pharmaceutics Laboratory I	0.5
RXPS 516	Pharmaceutics Laboratory II	0.5
RXPS 541	Foundations of Biomedical Science I	4
RXPS 542	Foundations of Biomedical Science II	4
RXRX 500A	Professional Development	1.5
RXRX 500B	Professional Development	1.5
RXSA 547	Pharmacy Law	2
RXSA 555	Epidemiology and Public Health	3
RXSA 650 <sup>1</sup>	Biostatistics	3
RXTH 560	Pharmacist-Guided Self Care	5
RXTH 570	Introduction to Disease Management	2.5

**Second Year**

RELE 705	Ethics in Pharmacy Practice	3
RELR 709	Christian Perspectives on Death and Dying	2
RXDI 664 <sup>1</sup>	Drug Information and Literature Evaluation	3
RXEE 680	Introductory Pharmacy Practice Experience–Community II	2
RXEE 690	Introduction to Hospital Pharmacy Practice	2
RXPS 543	Foundations of Biomedical Science III	4
RXPS 544	Foundations of Biomedical Science IV	4
RXPS 610	Pharmacokinetics	4
RXRX 600A	Professional Development	1.5
RXRX 600B	Professional Development	1.5
RXSA 646	Principles of Management	3
RXSA 751	Social-Behavioral Aspects of Pharmacy Practice	3
RXTH 671	Fluids and Electrolytes	2
RXTH 674	Renal and Respiratory Diseases	3.5
RXTH 683	Endocrine	3.5
RXTH 684	Cardiovascular I	3.5
RXTH 685	Cardiovascular II	3.5

Health professions education courses:

Autumn Quarter:

AHCJ 509	Transformational Teaching and Learning	3
AHCJ 515	Curriculum Development in Higher Education	3

Winter Quarter:

AHCJ 556	Administration in Higher Education	3
AHCJ 564	Collaborative Learning in Higher Education	3

Spring Quarter:

AHCJ 506	Educational Evaluation and Clinical Assessment	3
NGNE 500	Teaching and Learning Theory	3

Summer Quarter:

AHCJ 555	Writing for Health-Care Professionals	3
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**Third Year**

RELE 706	Advanced Ethics in Pharmacy Practice	2
RELT 740	World Religions and Human Health	3
RXEE 790	Introduction to Clinical Pharmacy Practice	2
RXPC 761	Pharmacy Practice I	2
RXPC 762	Pharmacy Practice II	2
RXPC 763	Pharmacy Practice III	4
RXPS 545	Foundations of Biomedical Science V	4
RXRX 700A	Professional Development	1.5
RXRX 700B	Professional Development	1.5
RXSA 743	Health Systems, Reimbursement, and Pharmacoeconomics	3
RXTH 704	Special Populations	3
RXTH 771	Central Nervous System II	3.5
RXTH 773	Central Nervous System I	3.5
RXTH 774	Gastrointestinal Disorders	2.5
RXTH 775	Oncology	2.5
RXTH 776	Infectious Diseases	7

Health professions education courses:

Autumn Quarter:

HPED 535	Current Issues in Health Professions Education	3
AHCJ 566	Theoretical Foundations of Leadership	3

Winter Quarter:

HPED 581	Capstone Project in Health Professions Education I	3
HADM 528	Organizational Behavior in Health Care	3

Spring Quarter:

HPED 582	Capstone Project in Health Professions Education II	3
AHCJ 600	Active Online Learning	3

**Fourth Year**

Six (6) of the following eight (8) APPE courses required:		
RXEE 821	Advanced Pharmacy Practice Experience I	6
RXEE 822	Advanced Pharmacy Practice Experience II	6
RXEE 823	Advanced Pharmacy Practice Experience III	6
RXEE 824	Advanced Pharmacy Practice Experience IV	6
RXEE 825	Advanced Pharmacy Practice Experience V	6
RXEE 826	Advanced Pharmacy Practice Experience VI	6
RXEE 827	Advanced Pharmacy Practice Experience VII	6
RXEE 828	Advanced Pharmacy Practice Experience VIII	6

**Total Units:**

**216.5**

<sup>1</sup> Course units count toward the M.S. in health professions education.



## Normal time to complete the program

Four (4) years (13 academic quarters); full-time enrollment required.

# Social Work – M.S.W. with Criminal Justice – M.S.

**Program director**  
Kimberly Freeman

Loma Linda University's motto, "To make man whole," provides a powerful context for integrated practice. Both social work and criminal justice—within a behavioral health framework—emphasize recovery, healing, and restoration.

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. This combined degrees program offers a unique opportunity for individuals interested in working in settings such as mental health court, detention centers, forensic inpatient programs, and forensic outpatient behavioral health systems.

## Mission

The mission, program goals, and objectives build on elements from the M.S.W and M.S. in criminal justice degrees. Please refer to each of these programs for this content.

## General overview

The combined M.S.W./M.S. in criminal justice program is a seven-quarter, full-time curriculum that begins with the social work core coursework required for all students. Coursework during the first year of study includes the generalist practice curriculum, which is grounded in the liberal arts and the person-in-environment framework. Within this framework, students learn to promote social well-being, and build on the strength and resiliency of all human beings through a range of prevention and intervention practice methods when working with diverse individuals, families, groups, organizations, and communities. During their second year, students complete a clinical practice specialization along with specialized courses and practicum in forensic behavioral health. Students choosing this area will focus on the needs of individuals in the criminal or juvenile justice systems who experience severe mental illness and who may also present with co-occurring substance use. Students will gain knowledge and skills in treatment programming. In addition, students will be prepared to assess and provide expert testimony regarding continued institutionalization versus readiness for community treatment.

Students gain knowledge and skills in treatment programming within a forensic mental health framework. 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 recovery and resiliency-informed treatment plans. An integrated practicum and seminar class in criminal justice typically begins in the Summer Quarter of the second year.

The combined degrees emphasize a thoughtful reflection about integrated issues in both social work and criminal justice, providing

students with a deeper understanding of practice issues affecting the field.

## Liberal arts preparation

M.S.W. and criminal justice curricula are built on a liberal arts perspective. Individual applicants whose undergraduate degree does not reflect this perspective may be asked to enroll in additional courses, which must be completed before advancement to candidacy (prior to beginning the advanced curriculum).

Unit values are stated as quarter units. Content from multiple courses may be used to meet most requirements.

## Program options

Alternate program options have been designed to address the varying needs of students: namely, a full-time, two-year option; a three-year, part-time option; and a four-year, part-time option.

## Admissions

### Admission requirements

Students wishing to take the dual degree must be admitted to both the M.S.W. (p. 188) and the M.S. in Criminal Justice (p. 181) programs separately. Applicants should refer to the admissions criteria for each program.

## Program requirements

The 90-unit curriculum for the M.S.W. and M.S. degrees in Criminal Justice provides a mix of academic, experiential, and research activities essential for practice. Students must maintain a grade point average of 3.0 on a 4.0 point scale (a letter grade of B) in order to progress successfully through the program and complete the degree. In addition, students must meet the knowledge, skills, and professional performance competencies outlined by the program. Students must meet both course and cumulative G.P.A. standards and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

### Generalist curriculum

SOWK 510	Diversity Theory in Practice and Research	3
SOWK 513	Human Behavior in a Culturally Diverse Environment	4
SOWK 514	Social Welfare History and Policy	4
SOWK 517	Practice I: Individuals	4
SOWK 518	Practice II: Groups	3
SOWK 519	Practice III: Organizations and Communities	3
SOWK 520	Practice IV: Families <sup>1</sup>	3
SOWK 548	Research Methods	5
SOWK 574	Practice V: Social Work Administration	3
SOWK 578	Field Orientation <sup>1</sup>	0
SOWK 585	Legal and Ethical Aspects in Health and Behavioral Health Services	3

### Required cognates

RELR 540	Wholeness and Health	3
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### Core criminal justice courses

CRMJ 515	Crime and Society	3
CRMJ 517	Criminal Procedure and Rules of Evidence	3
CRMJ 519	Expert Testimony: Procedure and Practice	2



CRMJ 574	Theories of Crime and Restitution	3
<b>Clinical specialization and forensic behavioral health</b>		
CRMJ 620	Forensic Mental Health	3
SOWK 584	Special Topics in Social Work	2
SOWK 613	DSM: Diagnosis Within the Context of Diversity and Difference	4
SOWK 617	Global Practice	3
SOWK 647	Integrated Behavioral Health	2
SOWK 648	Co-occurring Processes and Interventions	3
SOWK 659	Recovery in Behavioral Health	2
SOWK 661	Psychodynamic Therapies	4
SOWK 662	Behavioral and Cognitive Therapies	4
SOWK 663	Crisis and Trauma Interventions	3
SOWK 675	Supervision	3
SOWK 681	Behavioral Health Policies and Systems	2
<b>Degree completion options</b>		<b>6</b>
Non-thesis option: <sup>6</sup>		
SOWK 695A	Advanced Research Methods	
SOWK 695B	Advanced Research Methods	
SOWK 695C	Advanced Research Methods	
Thesis option: <sup>2</sup>		
SOWK 697	Applied Research	
SOWK 698	Thesis	
<b>Practicum and seminar <sup>5</sup></b>		
CRMJ 787	Advanced Professional Practicum and Seminar	
SOWK 757A	Generalist Practice Consultation <sup>3,7</sup>	
SOWK 757B	Generalist Practice Consultation <sup>3,7</sup>	
SOWK 757C	Generalist Practice Consultation <sup>3,7</sup>	
SOWK 787A	Clinical Practice Consultation <sup>4</sup>	
SOWK 787B	Clinical Practice Consultation <sup>4</sup>	
SOWK 787C	Clinical Practice Consultation <sup>4</sup>	
<b>Total Units</b>		<b>90</b>

<sup>1</sup> Not eligible for waiver.

<sup>2</sup> Thesis option is available for students meeting program criteria.

<sup>3</sup> Hours: 160 + 20; Not eligible for waiver

<sup>4</sup> Hours: 200 + 20

<sup>5</sup> 700-numbered courses are not calculated into the total didactic units required for the degree.

<sup>6</sup> SOWK 695 ABC is equivalent to SOWK 695.

<sup>7</sup> SOWK 678 substitutes 757ABC for Advance Standing students with approval of the program

## Normal time to complete the program

Seven (7) academic quarters (includes didactic courses and practicums)  
– based on full-time enrollment; part time permitted

# Social Work – M.S.W. with Gerontology – M.S.

## Program director

Kimberly Freeman

Social work and gerontology—within a behavioral health framework  
—address the models of wellness, recovery, and resiliency needed

for working with older adults and their caregivers. The program's multidisciplinary approach considers the biological, psychological, social, and spiritual well-being of older adults and provides students with knowledge and skills in providing resources, clinical services, and opportunities to older adults and their families. As such, the combined M.S.W. and M.S. degree in gerontology program offers a unique opportunity for individuals interested in working with older adults within a variety of behavioral health settings.

## Mission, goals, and objectives

The mission, program goals, and objectives build on elements from both the M.S.W. (p. 186) and M.S. degrees in gerontology (p. 182).

## General overview

The combined M.S.W./M.S. degrees in gerontology program is a seven-quarter, full-time curriculum that begins with the social work core coursework required for all students. Coursework during the first year of study includes the generalist practice curriculum, which is grounded in the liberal arts and the person-in-environment framework. Within this framework, students learn to promote social well-being, and build on the strength and resiliency of all human beings through a range of prevention and intervention practice methods when working with diverse individuals, families, groups, organizations, and communities. During their second year, students complete a clinical practice specialization along with specialized courses in gerontology and geriatric practice. An integrated practicum and specialized seminar class in gerontology typically begins in the summer quarter of the final year.

## Liberal arts preparation

The combined M.S.W. and M.S. degrees in gerontology curriculum is built upon a liberal arts perspective. Individual applicants whose undergraduate degrees do not reflect this perspective may be asked to enroll in additional courses.

Please note: Any prerequisite requirements must be completed before admission to the combined degrees M.S.W./M.S. program.

## Program options

Alternate program options have been designed to address the varying needs of students. As such, the program offers two-, three-, and four-year options.

## Admissions

### Admissions

Students wishing to take the dual degree must be admitted to both the M.S.W. (p. 188) and the M.S. in Gerontology (p. 183) programs separately. Applicants should refer to the admissions criteria for each program.

## Program requirements

The M.S.W./M.S. in Gerontology degrees consists of 90 units of didactic coursework in addition to professional practica experiences. The dual degree program provides the mix of academic, experiential, and research activities essential for master's degree level students. Students must maintain a grade point average of 3.0 on a 4.0 point scale (a letter grade of B) in order to progress successfully through the program and complete the degree. In addition, students must meet the knowledge, skills, and professional performance competencies outlined by the program.

Students must meet both course and cumulative G.P.A. standards and course repeat expectations set by the School of Behavioral Health in the general regulations (p. 148) section of this CATALOG.

#### Generalist curriculum

SOWK 510	Diversity Theory in Practice and Research	3
SOWK 513	Human Behavior in a Culturally Diverse Environment	4
SOWK 514	Social Welfare History and Policy	4
SOWK 517	Practice I: Individuals	4
SOWK 518	Practice II: Groups	3
SOWK 519	Practice III: Organizations and Communities	3
SOWK 520	Practice IV: Families <sup>1</sup>	3
SOWK 548	Research Methods	5
SOWK 574	Practice V: Social Work Administration	3
SOWK 585	Legal and Ethical Aspects in Health and Behavioral Health Services	3
SOWK 578	Field Orientation <sup>1</sup>	0

#### Required cognates

RELR 540	Wholeness and Health	3
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#### Gerontology core courses

GERO 515	Diversity and Aging	3
GERO 615	Economics and Management Issues of Older Adult Services	4
GERO 617	Bio-psycho-social-spiritual Theories of Aging	4

#### Clinical specialization and geriatric practice

GERO 654	Therapeutic Interventions with Older Adults	3
SOWK 584	Special Topics in Social Work	2
SOWK 613	DSM: Diagnosis Within the Context of Diversity and Difference	4
SOWK 617	Global Practice	3
SOWK 647	Integrated Behavioral Health	2
SOWK 648	Co-occurring Processes and Interventions	3
SOWK 659	Recovery in Behavioral Health	2
SOWK 661	Psychodynamic Therapies	4
SOWK 662	Behavioral and Cognitive Therapies	4
SOWK 663	Crisis and Trauma Interventions	3
SOWK 675	Supervision	3
SOWK 681	Behavioral Health Policies and Systems	2

#### Degree completion options **6**

Non-thesis option: <sup>6</sup>

SOWK 695A	Advanced Research Methods	
SOWK 695B	Advanced Research Methods	
SOWK 695C	Advanced Research Methods	

Thesis option: <sup>2</sup>

SOWK 697	Applied Research	
SOWK 698	Thesis	

**Total Units 90**

#### Professional practica experience <sup>5</sup>

GERO 787	Advanced Professional Practicum and Seminar	4
Generalist practicum and seminar		
SOWK 757A	Generalist Practice Consultation <sup>3,7</sup>	3
SOWK 757B	Generalist Practice Consultation <sup>3,7</sup>	3

SOWK 757C	Generalist Practice Consultation <sup>3,7</sup>	3
Clinical practicum and seminar		
SOWK 787A	Clinical Practice Consultation <sup>4</sup>	4
SOWK 787B	Clinical Practice Consultation <sup>4</sup>	4
SOWK 787C	Clinical Practice Consultation <sup>4</sup>	4
<b>Total Units</b>		<b>25</b>

<sup>1</sup> Not eligible for waiver.

<sup>2</sup> Thesis option is available for students meeting program criteria.

<sup>3</sup> Hours: 160 + 20; Not eligible for waiver

<sup>4</sup> Hours: 200 + 20

<sup>5</sup> 700-numbered courses are not calculated into the total didactic units required for the degree.

<sup>6</sup> SOWK 695ABC is equivalent to SOWK 695.

<sup>7</sup> SOWK 678 substitutes 757ABC for Advanced Standing students with approval of the program

### Normal time to complete the program

Seven (7) academic quarters (includes didactic courses and practicums) – based on full-time enrollment; part time permitted

# ONLINE PROGRAMS

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Applicants/students must reside in a state for which LLU has received authorization to deliver online programs. Please refer to the state authorization map (<https://home.llu.edu/llu-state-authorization/>) to determine eligibility.

Coding Specialist – Certificate (p. 87)

Denominational Studies/Chaplains – Certificate (p. 422)

Epidemiology – M.P.H. (p. 398)

Health and Wellness Coaching – School Certificate (p. 395)

Health-Care Administration – B.S. (p. 59), M.H.A. (p. 401)

Health Education – Dr.P.H. (p. 411)

Health Education and Wellness Coaching – M.P.H. (p. 402)

Health Geoinformatics – Certificate (p. 395)

Health Informatics – M.S. (p. 88)

Health Information Management – B.S., Certificate (p. 89)

Health Policy and Leadership – Dr.P.H. (p. 412)

Health Professions Education – M.S., Certificate (p. 63)

Nursing – Ph.D. (p. 373)

Nursing – RN to B.S. (p. 345)

Plant-Based Nutrition – M.S. (p. 406)

Play Therapy – Certificate (p. 184)

Population Medicine – M.P.H. (p. 407)

Preventive Care – Dr.P.H. (p. 415)

Radiation Sciences – B.S. (p. 134)

Respiratory Care – B.S., postprofessional (p. 69); M.S.R.C. (p. 71)

## Hybrid programs

(requires some attendance on campus and/or at an affiliated clinical site)

Cardiac Electrophysiology – A.S. (p. 123)

Clinical Leadership – D.S.W. (p. 179)

Drug and Alcohol Counseling – Certificate (p. 160)

Marital and Family Therapy – M.S. (p. 161), D.M.F.T (p. 165).

Nursing – D.N.P. (p. 350) with the following concentrations:

- Acute Care Adult-Gerontology Nurse Practitioner
- Acute Care Pediatric Nurse Practitioner
- Clinical Nurse Specialist: Adult-Gerontology
- Clinical Nurse Specialist: Pediatrics Nurse Practitioner

Family Nurse Practitioner Nurse Practitioner

Primary Care Adult-Gerontology Nurse Practitioner

Primary Care Pediatrics Nurse Practitioner

Psych Mental Health Nurse Practitioner

M.S. to D.N.P.

Occupational Therapy – O.T.D., postprofessional (p. 106)

Orthotics and Prosthetics – M.S.O.P., entry-level hybrid track (p. 107)

Radiologist Assistant – M.S.R.S. (p. 143)

Social Work – M.S.W. (p. 186)

Special Imaging: Computed Tomography (CT) – Certificate (p. 146)

Speech-Language Pathology – S.L.P.D. (p. 85)

# 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. Prerequisite: High school algebra or equivalent.

#### 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. Prerequisite: AHCJ 101; or equivalent.

#### 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. Prerequisite: AHCJ 101, AHCJ 102; or equivalent.

#### 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. Prerequisite: Current CPR certificate.

#### 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 profiled; modes of inter-professional interaction, work environments of profiled disciplines, educational requirements and costs, employment analysis and salary ranges.

#### AHCJ 124. Introductory Medical Anthropology. 4 Units.

An interdisciplinary study of human health and disease, health-care delivery systems, and biocultural adaptations in terms of biological, social, and psychological factors. Holistically examines health behaviors in terms of cultural, age, gender, sexual preference, religion, race, ethnicity, life experience, and economic diversity. Addresses barriers to care, problem-solving skills, and effective practice in a variety of settings by the health professional.

#### AHCJ 135. Essentials of Human Anatomy and Physiology. 5 Units.

Studies the structure and function of the human body, including organ systems. Prerequisite to many certificate and associate degree programs. Lecture and laboratory required.

#### 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. Prerequisite: High school chemistry; college algebra.

#### 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. Prerequisite: AHCJ 151.

#### 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. Prerequisite: AHCJ 152.

#### AHCJ 210. Introduction to Computers. 2 Units.

Examines computer system architecture and infrastructure—hardware, software, network topologies and components, terminology, and concepts. Provides overview of major computer software applications including—but not limited to—Microsoft Word, Excel, and databases. Not available every quarter.

#### AHCJ 225. History of Radiation and Imaging 1890-1940. 3 Units.

History of imaging and radiation from 1890 to 1940. Evolution of imaging practices and the use of radiation in society. Highlights the nature of change in imaging and use of radiation for medical, commercial, industrial, and military purposes. Examines 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.

History of imaging and radiation from 1940 to the present. Recent evolution of imaging practices and the use of radiation in society. Highlights the nature of change in imaging and use of radiation for medical, commercial, industrial, and military purposes. Examines 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 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. Prerequisite: A college-level chemistry course.

**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. Prerequisite: AHCJ 241.

**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. Prerequisite: AHCJ 250, or equivalent.

**AHCJ 305. Infectious Disease and the Health-Care Provider. 1 Unit.**

Current issues related to infectious diseases, with emphasis on principles of epidemiology and etiology of HIV/AIDS. Disease pathology and modes of transmission as compared to 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 health-care workers; risk factors and precautions for blood-borne pathogens.

**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 314. Managing Stress. 3 Units.**

Introduces stress management from a mind, body, and spirit perspective. Integration of component parts to provide a unified, composite basis for managing stress with whole person care. Integrates evidence-based, health psychology research for managing stress through lifestyle, and use of humor, music, exercise, rest/relaxation, religion/spirituality, and other relevant areas. Introduces tools needed to assess stress while striving for health and balance.

**AHCJ 315. Psychosocial Aspects of Health Care. 3 Units.**

Addresses psychosocial topics which optimize therapeutic outcomes. Focus on clinical competence and professional excellence involving health health-care providers affected by pathology, impairment, functional limitation, and/or disability. Recommends roles and intervention strategies for health-care providers; including, those practicing nursing, physical and occupational therapy, speech-language pathology, physician assistant, respiratory therapy, social work, and medical laboratory science.

**AHCJ 318. Emotional Intelligence and Leadership Skills for Health-Care Professionals. 3 Units.**

Examines the foundational concepts of emotional and social intelligence. Students assess their strengths, design action plans to enhance their emotional and social intelligence competencies, and apply emotional and social intelligence concepts and theories to their personal and professional behavioral practices and to the management and leadership of others. Course based on a framework specific to the health-care environment.

**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 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.**

Models of stress, crisis, and psychological trauma related 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. Suicide intervention, critical incident debriefings, and death notification. Roles of psychiatrists, psychologists, social workers, family therapists, and chaplains. Provision of temporary, adequate psychological care during 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 343. Cultural Perspectives in Professional Practice III. 3 Units.**

Third in a four-course sequence that progressively enhances students' abilities to provide culturally sensitive care within a Western clinical context. Focuses on professional and academic aspects of writing; including, mastery of critical thinking processes that increase students' abilities to solve problems, form opinions, and make decisions. Emphasis on reflective and technical writing, including research papers that follow APA guidelines, and 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 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 368. Lifestyle Health and Wholeness. 3 Units.**

Explores cardiovascular, metabolic, communicable, and nutritional lifestyle outcomes related to risk factors, screening approaches, and risk reduction. Includes whole person care utilizing natural means such as minimizing the use of prescription drugs, food supplements, and diet fads. Explores disease prevention and treatment through whole person lifestyle and evidence-based measures; inclusive of a perspective that explores the influence of religiosity on lifestyle health.

**AHCJ 369. 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 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 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. Prerequisite: AHCJ 402.

**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 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 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 418. Physiology I. 4 Units.**

Physiology of the human body, including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

**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 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 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 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 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 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 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 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 musculoskeletal disorders and cardiovascular pathologies. Includes radiographs, CAT scans, MRIs, bone densitometry, PET scans. Emphasizes clinical ultrasound imaging as used in physical therapy.

**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. Advanced Anatomy Dissection. 1 Unit.**

Integrates study of the structure and function of the human body with advanced dissection techniques. Detailed and rigorous coverage of the following regions; head and neck, upper extremities, lower extremities, and trunk. Opportunities for participation in human anatomical data collection, data analysis, literature review, and synthesis of drafts of scientific papers.

**AHCJ 524. Pharmacology. 1 Unit.**

Introduces pharmacology, including study of pharmacokinetics, pharmacodynamics, and actions of pharmaceuticals commonly encountered in various allied health professions.

**AHCJ 528. Lifestyle Health and Wholeness. 3 Units.**

Explores cardiovascular, metabolic, communicable, and nutritional lifestyle outcomes related to risk factors, screening approaches, and risk reduction. Includes whole person care utilizing natural means such as minimizing the use of prescription drugs, food supplements, and diet fads. Explores disease prevention and treatment through whole person lifestyle and evidence-based measures; inclusive of a perspective that explores the influence of religiosity on lifestyle health.

**AHCJ 541. Managing Stress. 3 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.

**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 555. Writing for Health-Care Professionals. 3 Units.**

Writing for health professionals for professional publication. Selection of journal, preparation of abstract, manuscript or research paper for potential publication.

**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 557. Integrating Emotional Intelligence Leadership into the Healthcare Professions. 3 Units.**

Students examine their personal emotional and social competencies and apply these foundational concepts in the health care and educational environments. Specifically focuses on developing EI in leadership and supervisory roles. Emphasizes developing EI competencies in staff, faculty, and/or students.

**AHCJ 560. Physiology. 4 Units.**

Physiology of the human body, including neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine physiology.

**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 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.**

Examination of physiological mechanisms of the central nervous, neuroendocrine, and immune systems, and religious/spiritual beliefs and practices impacting physical and mental health. Includes integrative psychoneuroimmunology and how devout religious/spiritual beliefs and practices affect a sense of well-being, quality of life, and longevity. Explores applications of spiritual care to practice; including, the theology of healing, body/spirit connections, and 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 575. Couples, Families, and Disabilities. 3 Units.**

Examines the effects disabilities have on couples and family systems, and contributions family members make during the rehabilitation of disabled individuals. Looks at discourse patterns taking place within a disabled person; within the disabled person's family and social support system; and, most importantly, within the context of the individual, the family, and medical and rehabilitation providers. Addresses issues of human sexuality, reproduction, and disability.

**AHCJ 576. Basics of Marketing. 1 Unit.**

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 577. Science of Happiness. 3 Units.**

Focuses on a fundamental finding from positive psychology that happiness is inextricably linked to wholeness, strong social ties, and contributing to something bigger than self. Students learn about the cross-disciplinary research supporting this view, spanning the fields of psychology, neuroscience, biology, and religion.

**AHCJ 579. Instructional Effectiveness. 3 Units.**

Develops strategies for instructional effectiveness, as well as processes for evaluation and assessment, that apply to face-to-face and online interactions.

**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 587. Introduction to Approaches in Music Therapy. 3 Units.**

Assesses the strengths and needs of clients and utilizes music interventions—creating, singing, moving to, and/or listening to music—to address the physical, emotional, cognitive, and social needs in support of accomplishing individualized therapeutic goals.

**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; its strengths, weaknesses, areas of growth, and changes needed. Includes an organizational assessment and application of didactic content presented in other courses.

**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. Prerequisite: Consent of instructor or of program director.

**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 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 diseases, with emphasis on principles of epidemiology and etiology of HIV/AIDS. Disease pathology and modes of transmission as compared to 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 health-care workers; risk factors and precautions for blood-borne pathogens.

**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.

## Allied Health Research Methods (AHRM)

### Courses

**AHRM 354. 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.

**AHRM 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.

**AHRM 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. Prerequisite: AHRM 471.

**AHRM 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.

**AHRM 514. Biostatistics. 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.

**AHRM 518. Nonparametric Statistics for the Health Professions. 3 Units.**

Introduces nonparametric statistical methods in the context of applications for health professionals. Uses the SPSS statistical package for data analysis. Students learn to identify, design, analyze, and interpret studies using nonparametric statistics. Nonparametric tests covered include the Mann-Whitney U test, Wilcoxon signed-ranks test, Friedman test, Kolmogorov-Smirnov test, Spearman rank correlation, and chi-square tests. Prerequisite: Beginning statistics course.

**AHRM 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.

**AHRM 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. Prerequisite: AHRM 571.

**AHRM 581. 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.

**AHRM 582. 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.

**AHRM 595. Research and Statistics Concepts and Methods: Intermediate. 3 Units.**

In-depth study of research designs, including completely randomized and randomized block designs. Use of and interpretation of statistical tests such as ANOVA, multiple linear regression, multivariate analysis, and correlations; includes introduction to nonparametric statistical tests. Measures and analyzes data for validity and reliability studies. Evaluates research literature that uses multivariate data.

**AHRM 604. 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.

**AHRM 605. Critical Analysis of Scientific Literature. 2,3 Units.**

Critical evaluation of scientific literature. Includes critical assessment of study rationale, population inclusion/exclusion criteria, sampling and randomization techniques, sample size, appropriateness of research design, choice of data analysis, structure and content of tables and graphs, interpretation of statistical results, and applications to practice. Additional evaluation time required for third unit of credit.

## 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 507. Stem Cell Biology and Medicine. 4 Units.**

Provides students with information on the latest developments in animal and human stem cell research and on the potential application of stem cells to medicine. Explores the derivation, manipulation, and differentiation of embryonic, germ, and adult stem cells. Lectures presented by faculty participating in stem cell research in areas of their expertise.

**ANAT 510. Gross Anatomy. 8.5 Units.**

Supports the organ system curriculum in the first year of medical education. Teaches students the morphological setting upon which clinical knowledge and experiences are built. Approaches anatomy from a gross structural perspective. Students use knowledge to recognize clinical variations and abnormalities in preparation for their medical careers.

**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.

**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 548. Introductory Flow Cytometry. 1 Unit.**

Introduction to basic flow cytometry-based techniques used to identify experimental, basic science and translational research questions, and to develop research proposals. Includes flow cytometry sample preparation, and data collection, analysis, and presentation.

**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: ANAT 541; or consent of instructor.

**ANAT 594. Directed Study 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 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 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 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.

## 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 505. Personal Finance. 2 Units.**

Comprehensive introduction to responsibilities within professional practice and personal finance management. Includes financial management, loans and debt reduction strategies, retirement planning, risk management, and human resource management; and, personal and practice decisions based on related legal, ethical, and financial issues.

**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 510. Fundamentals of Human Biochemistry. 2.5 Units.**

Supports the organ system curriculum in the first year of medical education. 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 carbohydrates, lipids, proteins, and nucleic acids; and the metabolic patterns of selected tissues.

**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.**

Provides a foundation in the nature and properties of biological molecules in the human body. Presents the biochemical basis for cell structure and function. Emphasizes an integrated approach to protein structure and function; the intermediary metabolism of carbohydrates, lipids, proteins, and nucleic acids; and, 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 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 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 605. Seminar in Stem Cells and Cancer. 1 Unit.**

Discussion of contemporary primary literature and exploration of stem cell biology related to cancer. Introduction to concepts in the cancer field, stem cell biology, critical evaluation of scientific literature, and cutting-edge research techniques. Prerequisite: IBGS 511, IBGS 512, IBGS 522, IBGS 523.

**BCHM 610. Cancer Journal Club. 1 Unit.**

A journal-club format that includes discussion of recent advances in cancer research. Critical evaluation of the experimental approaches used in the papers discussed—designed to enhance students' problem-solving and presentation skills, and to develop an appreciation for the rigor needed to conduct hypotheses-driven cancer research.

**BCHM 697. Research. 1-10 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 205. Biostatistics. 4 Units.**

Introductory statistics course that provides background and experience in biology and ecology data analysis. Topics include interpretation of data, appropriate use of tables and figures, study design, hypothesis testing, confidence intervals, the normal curve, probability, discrete and continuous data including ANOVA, correlation, and regression. Biological and ecological examples are used throughout the course.

**BIOL 305. Statistics Using the R Software Package. 1 Unit.**

Provides an overview of the R statistical package for performing statistical tests. Equips students with a basic working knowledge of this software for a variety of statistical procedures.

**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. 3 Units.**

Covers the interaction between living organisms and their environment, animal and plant diversity, and the biotic and abiotic factors that contribute to organisms interacting with their environment. Encompasses the ecologies of terrestrial, freshwater, and marine environments. Also covers population ecology, including population dynamics, population growth, and population genetics, and the interaction of organisms at the individual, community, and ecosystem levels.

**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 502. Orientation to Graduate Biology. 1 Unit.**

Introduces students to skills and strategies for successfully navigating through EBS as graduate biology students. Provides opportunities for discussion, activities related to topic areas, discovery, group exchange, instruction, and critical evaluation and decision making regarding ethical practices in research.

**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 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 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. Prerequisite: A course in genetics and philosophy of science.

**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 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. Cross-listing: GEOL 616.

**BIOL 617. Proposal Writing and Grantsmanship. 2 Units.**

Develops skills in writing proposals and acquiring funding for research. Increases understanding of the culture of research. Reviews the infrastructure of science funding and identifies individualized sources of potential funding. Presents successful proposal-writing strategies for both governmental and nongovernmental sources of funding. Emphasizes development of effective writing skills during preparation of the student's thesis or dissertation proposal.

**BIOL 618. Writing for Publication. 1 Unit.**

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 664. Science Communication Outreach. 1 Unit.**

Guided immersion into science communication outreach. Principles of communication outreach and small group work presented. Student teams devise project that engages a specific, identified community. Small teams collaboratively interact with community to address a need, present findings, evaluate impact, and reflect on experience. Cross-listing: GEOL 664.

**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.

## Biomedical Sciences (BMSC)

### Courses

**BMSC 510. Master of Medical Science Seminar. 3.5 Units.**

Focuses on strategies for success in medical school and examines clinical case studies relevant to concurrent content in basic science courses.

## Biomedical Sciences/Endocrine and Reproductive (BENR)

### Courses

**BENR 510. Endocrine and Reproductive Block. 7 Units.**

Develops understanding of endocrine and reproductive structure, function and dysfunction. Applies concepts in endocrine and reproductive cases to develop differential diagnoses, determine appropriate diagnostic testing, and formulate basic management plans.

## Biomedical Sciences/Foundations (BFDN)

### Courses

**BFDN 511. Foundations I Block. 12 Units.**

Introduces knowledge, skills, values, and attitudes necessary to successfully become self-directed, life-long learners and Christian physicians. Presents foundational concepts in anatomy and embryology, biochemistry, molecular biology and genetics, cell structure and general pathology, and physiology.

## Biomedical Sciences/Hematology and Immunology (BHMI)

### Courses

**BHMI 514. Hematology and Immunology Block. 7 Units.**

Focuses on hematologic and immunologic processes. Compares normal structure and function with dysfunction and disease. Develops knowledge and skills necessary for evaluation of laboratory findings in normal, non-neoplastic and neoplastic hematologic and lymphoid conditions.

## Cancer, Developmental and Regenerative Biology (CDRB)

### Courses

**CDRB 544. Special Topics in Cancer, Developmental and Regenerative Biology. 2-4 Units.**

Addresses advanced topics in cancer, developmental, and regenerative biology. Specific content varies from quarter to quarter. May be repeated for additional credit.

**CDRB 550. Clinical Exposure in Oncology. 1 Unit.**

Exposes students to various aspects of cancer care as they observe physicians delivering care to patients at all stages of cancer—newly diagnosed, preoperative, postsurgical, and survivorship. Discussion of diagnosis, workup, stage, and treatment plan. Attendance at didactic lectures, tumor board, and grand rounds that highlight the importance of a multidisciplinary approach to cancer management. Prerequisite: CDRB 555.

**CDRB 555. Biology of Cancer. 4 Units.**

Interdisciplinary approach to study of the causation, characterization, and prevention of cancer. Offered alternate years. Prerequisite: IBGS 511; IBGS 512; IBGS 522; IBGS 523.

## 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. 2 Units.** Application and interpretation of the 12-lead system. Emphasis on recognition of the acute myocardial infarction and common myocardial pathologies; includes axis deviation, acute ischemic conditions, electrolyte imbalances, bundle-branch block, and infarct imposters. Highlights 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 course completion.

**CEPT 253. Cardiac Electrophysiology and Rhythm Recognition III. 3 Units.** Clinical use of diagnostic tests and procedures related to intracardiac catheter placement and the electrograms created during EP studies/procedures. Improves recognition and interpretation of 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. Prerequisite: CEPT 251, CEPT 252.

**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. 1.5 Unit.** 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. Three days of clinical rotations per week.

**CEPT 322. Cardiac Electrophysiology Clinical Practicum II. 1.5 Unit.** Provides clinical experience and application of cardiac electrophysiology procedures, interventions, instrumentation, and patient-care interactions. Preceptors in 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. Three days of clinical rotations per week. Prerequisite: CEPT 321.

**CEPT 323. Cardiac Electrophysiology Clinical Practicum III. 2 Units.** Assists students in gaining specific experiences through clinical assignments, enabling them to develop and enhance competencies in cardiac testing and patient evaluation. Guided by clinical preceptors, students rotate through multiple environments relevant to the practice of cardiac electrophysiology, as well as several clinical environments, in order to gain advanced competencies in all content areas. Prerequisite: CEPT 322.

**CEPT 324. Cardiac Electrophysiology Clinical Practicum IV. 2 Units.** Provides student rotations 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. Prerequisite: CEPT 323.

**CEPT 345. Case Studies in Cardiac Electrophysiology. 2 Units.** Presents cardiac electrophysiology concepts through a case study model. Student reviews and presents case studies that integrate knowledge of cardiac disease, treatments, diagnostic tests, and procedures. Utilizes a simulated patient care setting to improve and develop critical thinking skills.

**CEPT 348. Cardiac Electrophysiology Seminar. 3 Units.**

A comprehensive view of the rapidly evolving field of interventional cardiology. Studies new developments, technological innovations, and advances in clinical application.

## Child Life Specialist (CHLS)

### Courses

**CHLS 501. Hospitalized Infant and Toddler Development. 3 Units.**

Emphasizes the development of infants and toddlers in hospital settings. Presents theory and research regarding socialization, emotional development, and temperament. Discusses bereavement, appropriate health, safety, and nutritional practices, and use of tools for effective practice.

**CHLS 502. Introduction to the Child-Life Profession. 3 Units.**

Teaches the evolution and history of child life, as well as the theoretical framework that guides the profession. Discusses topics such as professionalism and ethics as they relate to child-life practice. Exposes students to relevant research that constitutes an integral component of evidence-based practice. Shares clinical expectations for matriculation and certification through the Association of Child Life Professionals.

**CHLS 503. Preparation for Clinical Placement. 3 Units.**

Helps students develop a child-life specialist identity for clinical practice through readings, discussion of clinical practice placements, and formation of a personal philosophy. Students construct a cover letter, resume, and portfolio; as well as research clinical placement sites and become aware of the child-life specialist placement application and interviewing requirements. Discusses ACLP eligibility requirements and internship curriculum modules.

**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.**

Introduction to the diversity of cultures and its impact on the delivery of health-care services. Explores characteristics of composition, cultural practices and preferences, and health-care issues faced by selected cultures. Presents human differences, preferences, biases, and stereotypes. Fosters development of awareness, sensitivity, 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.**

Provides students with information regarding the effects of disease and/or injury on the physical, emotional, and social needs of children/adolescents and their families. Discusses medical terminology as it relates to the hospitalized child. Provides students with techniques—from medical, psychological, and social aspects—to effectively deal with behaviors that accompany hospitalization.

**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; and gives attention to stress and coping assessments, 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.

**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 Seminar I. 4 Units.**

Blends didactic and experiential learning in order to bridge the gap between child-life theory and the application of child-life principles. Prepares students for clinical work in the field of child life. Discusses the clinical requirements recommended by the Association of Child Life Professionals (ACLP), with emphasis on the ACLP's standards of clinical practice. Enrollment requires registration for CHLS 701: Clinical Training. Prerequisite: CHLS 608.

**CHLS 605. Child Life Internship Seminar II. 4 Units.**

Blends didactic and experiential learning in order to bridge the gap between child-life theory and the application of child-life principles. Prepares students for work in the field of child life through the principles of clinical coursework shared in class. Discusses the clinical requirements recommended by the Association of Child Life Professionals (ACLP) and gives special attention to the standards of clinical practice set forth by the official documents of ACLP. Prerequisite: CHLS 608. Corequisite: CHLS 702.

**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. 3 Units.**

Introduction to child life practice in a global context. Examines 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 610. Child Life Internship II. 4 Units.**

Blends didactic and experiential learning in order to bridge the gap between child-life theory and the application of child-life principles. Prepares students for work in the field of child life through the principles of clinical course work shared in class. Discusses the clinical requirements recommended by the Association of Child Life Professionals (ACLP) and gives special attention to the standards of clinical practice set forth by the official documents of ACLP.

**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.

**CHLS 700. Clinical Training. 2 Units.**

A child-life practicum designed as an introductory experience for individuals interested in pursuing the child-life profession. Students enroll in an approved hospital site, complete 100-120 hours, and meet with a supervisor who meets ACLP requirements.

**CHLS 701. Clinical Training. 6 Units.**

Hands-on clinical training experience that provides the student with an opportunity to build on coursework and put theory into practice while working in a variety of hospitals and related settings under the direction of a certified child-life specialist (CCLS). 600 hours required through ACLP.

**CHLS 702. Clinical Training. 6 Units.**

Hands-on clinical training experience that provides the student with an opportunity to build on coursework and put theory into practice while working in a variety of hospitals and related settings under the direction of a certified child-life specialist (CCLS). 600 hours required through ACLP. Prerequisite: CHLS 608.

## 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. Prerequisite: Current CPR certificate.

**CLSM 303. Urine and Body Fluid Analysis I. 2 Units.**

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 315. Physiology. 4 Units.**

Physiology of the human body including cellular, neuromuscular, cardiovascular, respiratory, gastrointestinal, renal, and endocrine systems.

**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, hematopoiesis, maturation, and kinetics. Pathophysiology of hematologic disorders, including anemias and hematologic malignancies. Correlation of hemostasis testing with clinical hemostatic disorders. Lecture and laboratory. Prerequisite: CLSM 321.

**CLSM 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. Prerequisite: CLSM 327; or consent of instructor.

**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, and proteins. Presents quality assurance, method evaluation, and establishment of reference ranges. Lecture and laboratory. Prerequisite: CLSM 331; or consent of instructor.

**CLSM 333. Clinical Chemistry II. 4 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. Prerequisite: CLSM 332.

**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. Prerequisite: CLSM 341.

**CLSM 396. CLS Junior Seminar. 1 Unit.**

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 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. Prerequisite: CLSM 303.

**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. Prerequisite: CLSM 307, CLSM 327, CLSM 328.

**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. Prerequisite: CLSM 307.

**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. Prerequisite: CLSM 321, CLSM 322.

**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. Prerequisite: CLSM 333.

**CLSM 435. Immunoassay and Molecular Diagnostic Techniques. 3 Units.**

Reviews common immunoassay and molecular diagnostic assay methodologies utilized in the clinical laboratory. Includes immunoassay technologies (EIA, ELISA, EMIT, FPIA), and chemiluminescence; and, molecular diagnostic techniques (nucleic acid extraction and purification, gel electrophoresis, nucleic acid hybridization and blots, DNA sequencing, and amplification technologies). Examines signal, target amplification, and real-time technologies. Addresses laboratory design and safety issues. Prerequisite: CLSM 325; or consent of the instructor.

**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. Prerequisite: CLSM 341, CLSM 342.

**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.**

Clinical and theory-based assessment and interpretation of data. Evaluation and comparisons of methodologies including immunoassays, 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. Prerequisite: CLSM 325, CLSM 333.



**CLSM 471. Clinical Practicum I. 5 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.

**CLSM 472. Clinical Practicum II. 5 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. 5 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 474A. Clinical Correlations. 1 Unit.**

Interactively bridges knowledge from textbook to clinical practice and decision making. Stimulates students' intellectual curiosity as it applies to laboratory medicine—including interpretation of laboratory data, case study analysis, impact on patient treatment and prognosis, assessment of validity of laboratory data, and administration of mock board examinations.

**CLSM 474B. Clinical Correlations. 1 Unit.**

Interactively bridges knowledge from textbook to clinical practice and decision making. Stimulates students' intellectual curiosity as it applies to laboratory medicine—including interpretation of laboratory data, case study analysis, impact on patient treatment and prognosis, assessment of validity of laboratory data, and administration of mock board examinations.

**CLSM 474C. Clinical Correlations. 1 Unit.**

Interactively bridges knowledge from textbook to clinical practice and decision making. Stimulates students' intellectual curiosity as it applies to laboratory medicine—including interpretation of laboratory data, case study analysis, impact on patient treatment and prognosis, assessment of validity of laboratory data, and administration of mock board examinations.

**CLSM 496. Clinical Laboratory Science Seminar I. 1 Unit.**

Explores topics such as medical research design and implementation, test method selection and evaluation, and laboratory instrumentation. Prerequisite: Satisfactory completion of Clinical Laboratory Science Program junior-year courses, or consent of instructor.

**CLSM 497. Clinical Laboratory Science Seminar II. 1 Unit.**

Continues with test method selection and evaluation. Incorporates skills developed and knowledge obtained in the Clinical Laboratory Science Program into a project. Prerequisite: CLSM 496; or consent of instructor.

**CLSM 498. Clinical Laboratory Science Seminar III. 2 Units.**

Introduces credentialing mechanisms and roles of the clinical laboratory professionals, as well as membership in professional organizations, network building, professional development and lifelong learning, and educational methodologies. Prerequisite: CLSM 497; or consent of instructor.

**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.

# Coding Specialist (HLCS)

## Courses

**HLCS 236. Pharmacology. 2 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. Prerequisite: HLCS 242.

**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. Prerequisite: HLCS 243.

**HLCS 247. Computer Applications in Health Care. 2 Units.**

Introduces health-care information systems concepts and applications. Focuses on software application in the health-care arena. Specific topics addressed include: general system theory; data management; interoperability; health record applications (e.g., encoder, ADT-R, ROI, etc); electronic health records; personal health records; mobile technology; telemedicine; bioinformatics; health information exchange; patient informatics applications; and emerging trends in health information technology.

**HLCS 250. Reimbursement and Coding Compliance. 4 Units.**

Addresses principles of billing and third-party reimbursement relating to physician professional coding and APC assignment for health-care institutions. Includes E&M coding conventions and modifiers. Covers principles of health-service billing, including billing terminologies, billing processes, and universal billing forms for various physician-practice settings. Overview of coding guideline compliance, physician querying, severity of illness systems, and clinical documentation improvement. Prerequisite or concurrent: HLCS 245.

**HLCS 260. Seminar and Portfolio for Health-Care Professionals. 2 Units.**

Requires development of a portfolio that illustrates mastery of the program learning outcomes. Provides students with a format to demonstrate acquisition of the knowledge and skills necessary to enter the workforce, including preparation for any relevant professional credentials, resume-building, and interview-skill development.

**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.**

Provides 60 hours of practical, hands-on coding experience under the direction of a practicum supervisor. Supports the application of state and national coding and reimbursement regulations to a variety of inpatient and outpatient records. Fosters an opportunity to improve coding knowledge and techniques in preparation to enter the workforce.

**HLCS 962. Coding Practicum II. 2 Units.**

Continuation of HLCS 961. Provides 60 hours of practical, hands-on coding experience under the direction of a practicum supervisor. Supports the application of state and national coding and reimbursement regulations to a variety of inpatient and outpatient records. Fosters an opportunity to improve coding knowledge and techniques in preparation to enter the workforce. Prerequisite: HLCS 961.

## Communication Sciences and Disorders (CMSD)

### Courses

**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 314. Language Science. 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. Prerequisite or concurrent: CMSD 388.

**CMSD 334. Speech Sound Disorders in Children. 4 Units.**

Definition, classification, etiology, diagnosis, and treatment of phonological/articulation disorders. Prerequisite or concurrent: CMSD 318.

**CMSD 367. SLPA Practicum and Ethics. 4 Units.**

Discussion of scope of practice and requirements for licensure for SLPAs in the state of California. Discussion of ethical issues related to the profession. Guided observation of clinical management of individuals with communication disorders. Supervised clinical experience in assisting the SLP in a school or hospital setting.

**CMSD 368. SLPA Scope of Practice. 1 Unit.**

Addresses the laws, regulations, ethics, and clinical principles and procedures within the scope of practice of the speech-language pathologist assistant. Prerequisite or concurrent: CMSD 369.

**CMSD 369. SLPA Fieldwork Experience. 3 Units.**

Guided observation of clinical management of individuals with communication disorders. Supervised clinical experience in assisting the speech-language pathologist in a school, hospital, or private clinical setting. Prerequisite or concurrent: CMSD 368.

**CMSD 376. Anatomy of Speech-Hearing Mechanism. 4 Units.**

Anatomy and physiology of auditory-vocal communicative process.

**CMSD 388. Communication across the Life Span. 4 Units.**

Overview of language development and normal changes over the life span. Development of language from infancy to adolescence, and the effects of aging on communication. Includes study of hearing.

**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 436. Speech and Hearing Science. 4 Units.**

Outline of fundamental properties of sound creation, transmission, and reception. Utilizes those properties for an in-depth analysis of English consonants, vowels, and prosodies; focusing on applications within the fields of communication sciences and disorders, and audiology.

**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 446. Instruction in American English Dialects. 2 Units.**

Discusses principles and procedures for elective clinical practice for populations that wish to communicate more effectively in various dialects of American English.

**CMSD 448. Disorders of Fluency. 3 Units.**

Overview of fluency disorders in children and adults. Addresses the nature of developmental stuttering and introduces basic therapy techniques used to promote fluency.

**CMSD 449. Voice Disorders. 3 Units.**

Introduction to healthy and disordered voice. Overview of definition, classification, etiology, diagnosis, and treatment of voice disorders. Vocal characteristics of pitch, intensity, quality, and resonance are discussed.

**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. Prerequisite: CMSD 454.

**CMSD 467. Speech-Language Pathology and Audiology Practicum. 1-4 Units.**

Supervised practice in diagnosis and therapy.

**CMSD 477. Bilingualism and Biculturalism. 3 Units.**

Focuses on clinical competencies and cultural sensitivity necessary and appropriate for addressing the needs of bicultural and bilingual persons. The impact of such knowledge is addressed as it pertains to speech-language pathology 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. Prerequisite: CMSD 324, CMSD 426, CMSD 485, CMSD 486.

**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. 3 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. 2 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 Life Span. 3 Units.**

Overview of language development and normal changes over the life span. 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. 3 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. Prerequisite or concurrent: CMSD 520.

**CMSD 522. Organic Speech Disorders. 3 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. 3 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 530. Language Science. 3 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 531. Service-Learning in Speech-Language Pathology I. 1 Unit.**

Provides foundational knowledge and practice in service-learning, an integration of academic material with meaningful service in the community, followed by reflection. Addresses the concept of civic engagement, which extends beyond mere assistance to partnering with members of the community for mutual benefit and support.

**CMSD 532. Service-Learning in Speech-Language Pathology II. 1 Unit.**

Builds on the foundations formed in CMSD 531. Students collaborate with community partners to complete a service-learning project. Critical thought, reflection, collaboration, and team-learning skills are emphasized. Includes practical service-learning experiences. Prerequisite: CMSD 531.

**CMSD 534. Speech Sound Disorders in Children. 3 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. Speech and Hearing Science. 3 Units.**

Fundamental properties of sound creation, transmission, and reception. Utilizes those properties for an in-depth analysis of English consonants, vowels, and prosodies; focusing on applications within the fields of communication sciences and disorders, and audiology. Prerequisite: CMSD 515.

**CMSD 537. Clinical Methods in Speech-Language Pathology. 3 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. 3 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. 3 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 546. Laryngopharyngeal Endoscopy Techniques. 1 Unit.**

Provides hands-on learning of rigid and flexible endoscopy techniques within the scope of practice for speech pathologists in the assessment and management of communication and swallowing disorders.

**CMSD 547. Autism Spectrum Disorders. 2 Units.**

Examines characteristics, classifications, theories of etiologies, and principles of management of the autism spectrum disorders. Emphasizes assessment methods and intervention. Prerequisite: CMSD 324, CMSD 426, CMSD 485, CMSD 486.

**CMSD 548. Disorders of Fluency. 2 Units.**

Overview of fluency disorders in children and adults. Primarily addresses the nature of developmental stuttering and introduces basic therapy techniques used to promote fluency.

**CMSD 549. Voice Disorders. 2 Units.**

Introduction to the healthy and the disordered voice. Overview of definition, classification, etiology, diagnosis, and treatment of voice disorders. Discusses vocal characteristics of pitch, intensity, quality, and resonance.

**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 I. 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 in Speech and Hearing II. 1 Unit.**

A continuation of CMSD 575 content and methodology. Discusses and connects principles behind speech production, perception, physiology, aerodynamics, and acoustics with their practical applications. Prerequisite: CMSD 575.

**CMSD 577. Bilingualism and Biculturalism. 2 Units.**

Focuses on clinical competencies and cultural sensitivity necessary and appropriate for addressing the needs of bicultural and bilingual persons. The impact of such knowledge is addressed as it pertains to speech-language pathology assessment and intervention.

**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. Prerequisite: CMSD 588.

**CMSD 596. Medical Fieldwork I. 1 Unit.**

Initial supervised clinical practice in a medical center, rehabilitation facility, or skilled nursing facility.

**CMSD 597. Fieldwork II. 8 Units.**

Supervised clinical practice in a medical center, rehabilitation facility, skilled nursing facility, outpatient, private practice, or adult education placement. Prerequisite: CMSD 596.

**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. Prerequisite: CMSD 597.

**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 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 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 Sciences Doctoral (CFSD)

### Courses

**CFSD 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.

**CFSD 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. Prerequisite or concurrent: CFSD 501.

**CFSD 504. Advanced Theory in Marital and Family Therapy. 4 Units.**

Provides a metaperspective for analysis and development of systemic-relational theories guiding marital and family therapy practice. Conceptualization and deconstruction of philosophical, religious, political, sociological, and ecosystemic notions. Preparation to critique and develop MFT theory with an emphasis on ethical and social-contextual aspects of case conceptualization and implications for recovery-based practice.

**CFSD 505. Advanced Family Studies: Theory Construction. 3 Units.**

Focus on developing theories that explain/guide/predict an individual, couple, family, or society phenomenon. Explores how to critically evaluate theory, as well as link theory development to research methodology and practice.

**CFSD 506. Foundations of Systems Thinking: Theory and Application. 3 Units.**

Explores theoretical underpinnings of general systems theory and its theoretical and practical applications to family relationships, family communication, intrapersonal dynamics and sociocultural contexts. Studies concepts of self-regulatory feedback loops, circularity and non-linearity as they affect families, inter- and intra-personal interactions and sociocultural contexts.

**CFSD 519. Teaching in Higher Education. 3 Units.**

Studies techniques and processes in the teaching of marriage and family therapy, including didactic and experiential techniques. Examines teaching philosophies for campus-based and online teaching modalities. Explores similarities and differences in pedagogy for campus-based and online teaching methodologies. Identifies strategies for effective teaching in both modalities.

**CFSD 524. Marital and Family Therapy Administration: Organizational Structure, Process and Behavior. 3 Units.**

Prepares MFT doctoral students to manage human service programs and agencies. Mission-based management framework guides students in examining strategic planning as a method for creating organizational change and accountability to stakeholders.

**CFSD 526. Advanced Marital and Family Therapy Assessment. 3 Units.**

Prepares marriage and family therapy doctoral degree students with skills and knowledge to become competent with methods of relational assessment in clinical and research settings. Emphasizes understanding, evaluation, and utilization of both individual and family-based assessments in organizational settings. Students assess the strengths and weakness of instruments in order to determine the best fit for a program, clinical topic, or research project.

**CFSD 528. Marriage and the Family. 4 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.

**CFSD 534. Family Life Education I. 3 Units.**

Explores issues related to laws and ethics in the practice of family life education, family law, and public policy matters in the United States of America and around the world. Critically analyzes marriage and family literature. Prepares family life educators for certification as family life educators and related family life professionals.

**CFSD 535. Family Life Education II. 4 Units.**

Applies a family-life-education focus on human growth and development. Expanded emphasis on family resource management and parent education within individual and family life cycle.

**CFSD 536. Family Life Education III. 3 Units.**

Explores issues in family life education, human sexuality, and interpersonal relationships relevant to family life educators and related family life professionals.

**CFSD 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 of patients and family members. Includes personal and professional aspects of providing ethical, holistic, and collaborative clinical care in medical settings.

**CFSD 544. Health and Illness in Families. 3 Units.**

Examines biopsychosocial-spiritual aspects of illness and their impact on patient and family members across individual and family life span development. Reviews contextual, cultural, and systemic issues pertaining to health, illness, loss, and trauma of patients and family members. Highlights major issues and trends in health care and implications for patient care.

**CFSD 545. Research and Practice with Couples and Families. 3 Units.**

A scholarly and critical review of the literature in family social science, with application of this literature to the practice of family life education and/or marital and family therapy. Students interact with the material to critically challenge historical approaches and develop new insights and understandings that would shape present and future practice of interventionists that work with families.

**CFSD 546. Multicultural and Global Mental Health. 3 Units.**

Focuses on current issues, trends, and approaches in the field of family social science; and interacts with newer advances in the field resulting from changes in practice, sociocultural, political, and technological arenas. Presents professional practice as an evolving process for practitioners in the twenty-first century.

**CFSD 548. Family Therapy and Medicine. 3 Units.**

Examines the interface of medical practice and family therapy in common medical family therapy settings. Explores 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. Prerequisite: CFSD 540, CFSD 544.

**CFSD 555. Organizational Development and Change. 3 Units.**

Focus on system consultation and professional relations. Integrates organizational change theories and practice assessments in organizational settings. Assists students in integrating organizational behavior, assessment and change knowledge in practical setting.

**CFSD 565. Neurobiology of Relationships, Stress and Trauma: Family Science Applications. 3 Units.**

Connects philosophical underpinnings of systemic and relational theories to current social neuroscience research. Discusses implications and applications for clinical practice. Examines neuroscience of psychotherapy and interplay between biological systems, social processes, relational dynamics and behavior. Emphasis on recursive epistemology, construction of relational experiences, emotions, and attachment and trauma.

**CFSD 601. Statistics I. 4 Units.**

First in a series of three statistics courses. Focuses on basic, foundational behavioral statistics. Includes causality, levels of statistical measurement, frequencies distribution, measures of central tendency, dispersion, probability theory, normal distribution, and ANOVA.

**CFSD 602. Statistics II. 4 Units.**

Second in a series of three statistics courses. Focus on multivariate techniques. Includes 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. Prerequisite: CFSD 601.

**CFSD 603. Statistics III. 4 Units.**

Third in a series of three statistics courses. Includes nonlinear regression models, logistic regression, discriminant analysis, path analysis, factor analysis, and structural modeling; and, social network analysis and multilevel modeling. Prerequisite: CFSD 602.

**CFSD 605. Advanced Quantitative Methods. 3 Units.**

Focuses on survey research design and data analysis. Includes research idea development, relational hypotheses formation, survey planning and management, questionnaire and item design, sampling, systemic clinical data measurement, logic of analysis, and problems of statistical interpretation and threats to internal and external validity.

**CFSD 606. Issues in Family Research. 3 Units.**

Addresses current issues in marriage and family therapy (MFT) and family studies research as basis for on-going inquiry and program development. Emphasizes research history, field trends, and evidence-based approaches to recovery. Focuses on designing, implementing, and disseminating research to support MFT and family studies.

**CFSD 611. Qualitative Research Methods I. 4 Units.**

Prepares doctoral students to conduct qualitative research study or program evaluation relevant to family processes and/or clinical practice. Introduces qualitative research foundations and practical experience with qualitative research methods. Addresses philosophical foundations of research design, analysis, and interpretation, and evaluation and presentation of qualitative data and findings.

**CFSD 612. Qualitative Research Methods II. 3 Units.**

Development of qualitative research project and completion of qualitative research proposal. Focuses on qualitative study design, data collection methods, data analysis strategies, writing/presenting qualitative data, and evaluation of qualitative studies. Prerequisite: CFSD 611.

**CFSD 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 and areas of diversity impacting family and community systems. Using the systemic/relational paradigm of the field, students produce program design foundations, such as literature-based needs assessments, reflecting their areas of interest.

**CFSD 625. Grant Writing. 3 Units.**

Study and practice in locating, developing, and responding to 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.



**CFSD 626. Program Design, Evaluation and Monitoring. 3 Units.**

Addresses formative and summative evaluations using quantitative, qualitative, and mixed method designs. Emphasizes program evaluation and collaboration with stakeholders to ensure evaluation reports meet intended purposes. Includes program methods for the development of a consistent program design and evaluation plan. Utilizes assessment of program needs to address theory and adherence, process and performance, outcomes, impact, and efficiency in program design, evaluation, and monitoring. Prerequisite: CFSD 624.

**CFSD 627. Statistical Analysis for Program Evaluation. 3 Units.**

Reviews and utilizes basic statistical tools program administrators employ to analyze evaluation results. Provides a framework for evaluation methodologies and statistical analysis used in evaluation report development. Explores decision making strategies based on evaluation results and statistical analyses. Prerequisite or concurrent\*: CFSD 624, CFSD 626\*.

**CFSD 634A. Practicum in Couple and Family Therapy. 3 Units.**

First in a three-course practicum sequence. Applies systems and relational therapy to relational distress and mental health symptoms. Emphasizes a positive, strengths-based approach to resilience. Addresses gender, culture, socioeconomic, and political aspects of practice. Prerequisite: 200 clinical hours.

**CFSD 634B. Practicum in Couple and Family Therapy. 3 Units.**

Second in a three-course practicum sequence. Applies systems and relational therapy to relational distress and mental health symptoms. Emphasizes a positive, strengths-based approach to resilience. Focuses on mode of systemic conceptualization and in-session processes. Prerequisite: 200 clinical hours.

**CFSD 634C. Practicum in Couple and Family Therapy. 3 Units.**

Third in a three-course practicum sequence. Applies systems and relational therapy to relational distress and mental health symptoms. Emphasizes a positive, strengths-based approach to resilience. Emphasizes religious beliefs and spirituality, and moral and ethical imperatives in relationally-based practice. Prerequisite: 200 clinical hours.

**CFSD 694. Directed Study: Family Studies. 1,2 Unit.**

Individual study in areas of special interest concerning family life education. May be repeated for credit at the discretion of the faculty.

**CFSD 695. Project Research. 1-12 Units.**

Required research associated with the capstone project for the D.M.F.T. degree.

**CFSD 698. Dissertation Research. 1-10 Units.**

Completes independent research contributing to the field of marital and family therapy.

**CFSD 785A. Begin Clinical Training in Couple, Marital, and 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. Acceptance into a CFS doctoral program.

**CFSD 785B. Clinical Training in Couple, Marital, and Family Therapy. 4 Units.**

Provides direct client contact in the practice of couple, marital, and family therapy and documents completion of a minimum of 200 hours of direct client contact. Meets AAMFT-approved standards and applies toward 40 hours of clinical experience. May cover up to five quarters and be repeated five times.

**CFSD 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.

**CFSD 786A. Professional Development Doctoral Portfolio. 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. Prerequisite: CFSD 786.

**CFSD 786B. Professional Internship in Couple and Family Therapy. 2-6 Units.**

Supervised client contact (face-to-face hours only) in the practice of couple and family therapy.

## Counseling and Family Science Global (CFSG)

### Courses

**CFSG 584. Global Health. 3 Units.**

Overview of the current status of global health care. Examines the ethical and practice issues associated with delivery of pediatric health care in underdeveloped health-care systems—giving critical attention to issues of pediatric and adolescent growth and development, policies, trends, advocacy, population growth, and disease. Addresses current trends of child-life professionals in global settings.

## Counseling (COUN)

### Courses

**COUN 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 behavioral health test instruments. Cross-listing: MFAM 501.

**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 in a workshop format. Cross-listing: MFAM 502.

**COUN 515. Crisis Intervention and Client Advocacy. 3 Units.**

Presents basic counseling theory, techniques, crisis intervention, and client-centered advocacy in recovery-oriented practice environments. Includes confidentiality, interprofessional cooperation, working with consumers, professional socialization, and collaboration. Discusses suicide, substance abuse, domestic violence, incest, spousal abuse, rape, treating the severely mentally ill, and disaster and trauma response. 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 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: MFAM 528.

**COUN 540. Professional Counseling Orientation. 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.

**COUN 541. Clinical Practicum Seminar – Early Counselor Development. 2 Units.**

Addresses professional development and the practice of clinical counseling through readings, case presentations, mentoring, and group supervision. Focuses on early counselor skill development including rapport-building and active listening. Prerequisite or concurrent\*: COUN 540\*; and admission into counseling degree program.

**COUN 542. Clinical Internship Seminar – Spirituality. 2 Units.**

Addresses professional development and practice of clinical counseling through readings, case presentations, mentoring, and group supervision. Focuses on practical skill development in the area of spirituality and the incorporation of spirituality in counselor-recipient interactions. Assumes concurrent participation in clinical placement. Prerequisite: COUN 540\*, COUN 541; admission into counseling degree program.

**COUN 543. Clinical Internship Seminar – Multicultural and Cross-Cultural Interactions. 2 Units.**

Addresses professional development and practice of clinical counseling through readings, case presentations, mentoring, and group supervision. Focuses on practical skill development in the area of multicultural and cross-cultural interactions. Assumes concurrent participation in clinical placement. Prerequisite or concurrent\*: COUN 540\*; and admission into counseling degree program.

**COUN 544. Clinical Internship Seminar – Recovery-Oriented Care. 2 Units.**

Addresses professional development and practice of clinical counseling through readings, case presentations, mentoring, and group supervision. Focuses on practical skill development in the area of recovery-oriented care. Assumes concurrent participation in clinical placement. Prerequisite or concurrent\*: COUN 540\*, COUN 541; and admission to counseling degree program.

**COUN 546. Clinical Internship Seminar – Substance Use Disorder Treatment. 2 Units.**

Addresses professional development and practice of clinical counseling through readings, case presentations, mentoring, and group supervision. Focuses on practical skill development in the area of comorbid diagnoses and substance abuse treatment. Assumes concurrent participation in clinical placement. Prerequisite: COUN 541; admission into counseling degree program.

**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, social, and spiritual development in the context of family dynamics involving traditional two-parent families, alternative partnerships, single parents, blended families, and intergenerational communities. Cross-listing: MFAM 547.

**COUN 550. Clinical Interventions with Service Members, Veterans, and Families. 2 Units.**

Provides multi-disciplinary understanding of military culture and skills and application of evidence-based clinical treatments that foster resilience and provide relief to service members, veterans and their families. Attention to issues of diversity, ethics, and use of self are included throughout clinical case discussion. Clinical issues specific to this population are discussed along with individual, family, and community interventions. Prerequisite: PSYC 721 or SOWK 757C. Cross-listing: PSYC 550, SOWK 550.

**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. Utilizes the multiaxial classifications of the current edition of the Diagnostic and Statistical Manual as a practical basis for diagnostics. Cross-listing: MFAM 556.

**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 wherein students apply theory to practice and develop group leadership skills. Cross-listing: MFAM 568.

**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. Prerequisite: General psychology.

**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.

**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.

**COUN 580. Advanced Counseling Theory and Techniques. 4 Units.**

Focuses on the advanced application of counseling constructs, assessment and treatment planning, clinical interventions, and therapeutic techniques that foster effective therapeutic relationships. Prerequisite: COUN 540, COUN 575.

**COUN 584. Advanced Child and Adolescent Development. 2,3 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). Cross-listing: MFAM 584.

**COUN 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. Examination of 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: MFAM 604.

**COUN 614. Law and Ethics. 3 Units.**

Examines child welfare, separation, and divorce law, and financial aspects of family maintenance. Includes case management, referrals, professional and client interactions, ethical and interprofessional relations, legal responsibilities, and confidentiality. Explores interactions among the practitioner's sense of self and human values, professional behavior, scope of practice, and ethics. Examination of impacts of culture, SES, poverty, social stress, and biology on the recovery process.

**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 behavioral health counseling. Cross-listing: MFAM 624.

**COUN 638. Substance Use Disorders, Relationships, and Recovery. 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. Cross-listing: MFAM 638.

**COUN 644. Child Abuse and Family Violence. 3 Units.**

Presents characteristics of physical and emotional abuse, neglect, sexual molestation, and family violence including offender and nonoffender traits. Focus on treatment including individual, group, and family therapy. Ethical and legal issues, community resources, and multidisciplinary approaches to child abuse. Examines cultural, SES, poverty and/or social stress impacts on mental health and recovery. 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. Cross-listing: MFAM 674.

**COUN 675. Dynamics of Aging. 1 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.

**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.**

Addresses educational assessment, personal and social counseling, academic and career counseling, program development, program coordination and supervision, consultation, legal aspects, and professional ethics in schools and other agencies. Meets State Pupil Personnel Services requirement of a minimum of 600 clock hours in two educational levels, public school activity, and involvement with students from diverse cultural, ethnic, and language backgrounds.

**COUN 681. School Counseling Practicum and Seminar. 1,2 Unit.**

Focuses on California standards for the Pupil Personnel Services Credential in School Counseling. Addresses professional development and practice of school counseling. Enrollment is restricted to students in the M.S. in Counseling Program and the School Counseling Certificate Program. Requires minimum of two quarters of COUN 681 School Counseling and practicum. Students starting the program in Autumn 2022 or later register for two units each quarter.

**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 fundamental to self-awareness, relationship skills, behavioral observations, self-regulatory processes, emotion-focused therapy, and counselor-client contact with individuals and groups.

**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 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.**

Presents criminal procedures as guided by the U.S. Constitution. Focuses on 4th-, 5th-, 6th-, and 14th-Amendment rights. Includes 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, and federal and state rules of admissibility as they shape the content and process of evidence presentation by expert witnesses.

**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. Theories of Crime and Restitution. 3 Units.**

Surveys theory and research with respect to the core criminology and restitution theories. Emphasis is on the practical application of the theoretical concepts introduced in the readings.

**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 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. 1,4 Unit.**  
Provides experiential learning in advanced criminal justice practice. Students complete 200 practicum hours and 20 hours of concurrent seminar over one or four quarters, depending on the program option.

## 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 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. 1 Unit.**  
Provides opportunity for second-year residents to participate in teaching 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 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 their 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 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 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 and dental career: development a personal strategic career plan and development of a resume. Interpretation of basic accounting reports and statements such as balance sheets, income statements, and cash flow. Development of a personal budget. Management of student and other debt.

**DNES 809. Practice Management II. 2 Units.**

Office management, including leadership, communication, and teamwork. Personnel policy. Patient care, including scheduling. Selecting the dental team. Working as an associate or employee. Transitioning to dental practice. Locating the dental practice. Successful dental practice business plan.

**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.

## Dental Hygiene (DNHY)

### Courses

**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 operator 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. Prerequisite: DNHY 321.

**DNHY 322L. Preclinical Dental Hygiene II Laboratory. 2 Units.**

Laboratory course for DNHY 322, Preclinical Dental Hygiene II Laboratory. Prerequisite: DNHY 321, DNHY 321L.

**DNHY 323. Preclinical Dental Hygiene III. 2 Units.**

Continues DNHY 322. Prerequisite or concurrent\*: DNHY 321, DNHY 322\*, DNHY 321L, DNHY 322L\*.

**DNHY 323L. Preclinical Laboratory. 1 Unit.**

Laboratory course for DNHY 323, Preclinical Laboratory. Prerequisite or concurrent\*: DNHY 321L, DNHY 322L\*, DNHY 321, DNHY 322\*.

**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. Prerequisite or concurrent: 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 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.**

Applies basic skeletal and dental growth, and development to orthodontics. Includes treatment modalities and procedures required for successful practice of orthodontics.

**DNHY 408. Professional Ethics. 2 Units.**

Develops understanding of hygienist's obligations to the public and to their 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 their profession.

**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 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 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 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 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. 2 Units.**

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. Prerequisite or concurrent: DNHY 452.

**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. Prerequisite or concurrent: DNHY 475.

**DNHY 477. Dental Hygiene Clinic III. 4 Units.**

Integrates all components of oral health care into the clinical treatment of patients. Prerequisite for concurrent\*: DNHY 475, DNHY 476\*.

**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 497. Advanced Shadowing Experience. 12 Units.**

An elective course open to students seeking shadowing experience in dental hygiene. Credits do not count toward an academic degree.

## Dentistry (DENT)

### Courses

**DENT 700A. Dental Fundamentals I. 5 Units.**

Introduces basic dental terminology and nomenclature, tooth morphologic characteristics, and interrelationships of permanent teeth. Presents source, use, and manipulation of dental materials, and physical properties relative to dentistry.

**DENT 700B. Dental Fundamentals I. 6 Units.**

Continues DENT 700A. Reinforces and continues development of understanding of terminology, morphologic characteristics, and interrelationships of permanent teeth. Introduces periodontal diseases and their classifications. Reinforces source, use, and manipulation of dental materials, and their physical properties relative to dentistry. Prerequisite: DENT 700A.

**DENT 701L. Dental Fundamentals I Laboratory. 3 Units.**

Introduces appropriate technical skills to understand and reproduce proper tooth contours. Focuses on the development of technical skills in the preparation and restoration of teeth.

**DENT 702L. Dental Fundamentals I Laboratory. 4 Units.**

Continues DENT 701L. Reinforces and continues development of appropriate technical skills to understand and reproduce proper tooth contours. Develops technical skills in the preparation and restoration of teeth. Prerequisite: DENT 701L.

**DENT 710A. Professionalism, Mission, and Personal Development I. 2.5 Units.**

Introduction to health care communication skills. Addresses individual, professional, and practical issues confronted by the dentist as a health-care professional. Discusses ethical issues in contemporary dentistry. Provides Christian resources for ethical decision making.

**DENT 710B. Professionalism, Mission, and Personal Development I. 1.5 Unit.**

Continues DENT 710A. Prerequisite: DENT 710A.

**DENT 720A. Patient-Centered Care I. 2 Units.**

Introduces patient care, fundamentals of dental assisting, and the EHR leading to becoming an integral part of the dental team.

**DENT 720B. Patient-Centered Care I. 4.5 Units.**

Continues DENT 720A. Prerequisite: DENT 720A.

**DENT 730A. Biomedical Sciences and Oral Ecosystems I. 14.5 Units.**

In-depth study of human anatomical sciences related to the dental profession. Presents molecular processes as foundation for adequate understanding of physiology. Reviews biomolecules, enzymology, and metabolism. Introduces regulatory motifs, genetic principles, and expression of genetic information. Examines physiological principles and systems in man and bases of normal function.

**DENT 730B. Biomedical Sciences and Oral Ecosystems I. 18.5 Units.**

Continues DENT 730A. Prerequisite: DENT 730A.

**DENT 750A. Dental Fundamentals II. 14 Units.**

Continues DENT 700B. Furthers the knowledge necessary to practice general dentistry. Emphasizes topics such as operative dentistry, periodontics, fixed prosthodontics, removable prosthodontics, dental anesthesia, and dental radiology. Prerequisite: DENT 700B.

**DENT 750B. Dental Fundamentals II. 14 Units.**

Continues DENT 750A. Furthers the knowledge necessary to practice general dentistry. Emphasizes topics such as fixed prosthodontics, removable prosthodontics, dental materials, oral and maxillofacial surgery, endodontics, orthodontics, and pediatric dentistry. Prerequisite: DENT 750A.

**DENT 751L. Dental Fundamental II Laboratory. 5 Units.**

Continues DENT 702L. Furthers the development of the practical skills necessary to practice general dentistry. Emphasizes procedures and techniques used in restorative dentistry such as operative dentistry, fixed prosthodontics, and removable prosthodontics. Prerequisite: DENT 702L.

**DENT 752L. Dental Fundamental II Laboratory. 7 Units.**

Continues DENT 751L. Furthers the development of the practical skills necessary to practice general dentistry. Emphasizes procedures and techniques used in fixed and removable prosthodontics, endodontics, and pediatric dentistry. Prerequisite: DENT 751L.

**DENT 760A. Professionalism, Mission, and Personal Development II. 1.5 Unit.**

Continues DENT 710B. Focuses on balanced life and mission skills to thrive in a professional environment Prerequisite: DENT 710B.

**DENT 760B. Professionalism, Mission, and Personal Development II. 1.5 Unit.**

Continues DENT 760A. Prerequisite: DENT 760A.

**DENT 770A. Patient-Centered Care II. 9 Units.**

Introduces skills to move students from working as an assistant to becoming a disease control-level dental provider. Prerequisite: DENT 720B.

**DENT 770B. Patient-Centered Care II. 9 Units.**

Continues DENT 770A. Prerequisite: DENT 770A.

**DENT 780A. Biomedical Sciences and Oral Ecosystem II. 8 Units.**

Continues DENT 730B. Focuses on relating body systems and environment with the practice of dentistry. Prerequisite: DENT 730B.

**DENT 780B. Biomedical Sciences and Oral Ecosystem II. 10 Units.**

Continues DENT 780A. Prerequisite: DENT 780A.

**DENT 800A. Dental Fundamentals III. 16 Units.**

Furthers knowledge and development of skills in general dentistry. Prerequisite: DENT 750B.

**DENT 800B. Dental Fundamentals III. 7.5 Units.**

Continues DENT 800A. Prerequisite: DENT 800A.

**DENT 810A. Professionalism, Mission, and Personal Development III. 4.5 Units.**

Focuses on thriving in a professional environment. Teaches balanced life skills in mission and personal development. Prerequisite: DENT 760B.

**DENT 810B. Professionalism, Mission, and Personal Development III. 3.5 Units.**

Continues DENT 810A. Prerequisite: DENT 810A.

**DENT 820A. Patient-Centered Care III. 12 Units.**

Clinical application of dentistry principles. Opportunity to gain experience with cases treated by general dentist including attendant diagnostic procedures, planning and treatment sequencing, disease-control procedures, and appropriate post-treatment care procedures. Prerequisite: DENT 770B.

**DENT 820B. Patient-Centered Care III. 12 Units.**

Continues DENT 820A. Prerequisite: DENT 820A.

**DENT 830A. Biomedical Sciences and Oral Ecosystems III. 3 Units.**

Continues DENT 780A. Focuses on relating body systems and environment with dentistry practice. Prerequisite: DENT 780A.

**DENT 830B. Biomedical Sciences and Oral Ecosystems III. 5 Units.**

Continues DENT 830A. Prerequisite: DENT 830A.

**DENT 850A. Dental Fundamentals IV. 3 Units.**

Provides foundational knowledge and skills necessary to perform endodontic treatment on uncomplicated permanent teeth. Treatment planning and problem solving in removable prosthodontics and combination cases. Prerequisite: DENT 800B.

**DENT 850B. Dental Fundamentals IV. 2 Units.**

Continues DENT 850A. Prerequisite: DENT 850A.

**DENT 860A. Professionalism, Mission, and Personal Development IV. 3.5 Units.**

Continues DENT 810B, focuses on thriving in a professional environment. Teaches balanced life skills in mission and personal development. Prerequisite: DENT 810B.

**DENT 860B. Professionalism, Mission, and Personal Development IV. 3.5 Units.**

Continues DENT 860A. Prerequisite: DENT 860A.

**DENT 870A. Patient-Centered Care IV. 15 Units.**

Clinical application of dentistry principles. Opportunities to gain experience in cases treated by the general dentist, including attendant diagnostic procedures, planning and treatment sequencing, disease-control procedures, and appropriate post-procedure care. Prerequisite: DENT 820B.

**DENT 870B. Patient-Centered Care IV. 15 Units.**

Continues DENT 870A. Prerequisite: DENT 870A.

**DENT 880. Biomedical Sciences and Oral Ecosystems IV. 2 Units.**

Continues DENT 830B. Focuses on relating body systems and environment with dentistry practice. Differential diagnosis and initial management of oral disease, utilizing clinical case studies. Epidemiology, detection, diagnosis, and maxillofacial cancer management. Principles of cancer therapy by surgical modalities. Includes discussion of cancer prevention and post-therapy reconstruction. Reviews tobacco cessation protocols. Prerequisite: DENT 830B.

## 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 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.**

Develops food preparation techniques. Addresses changes associated with maturation, preservation, preparation, transportation, and storage in relation to food quality; nutritional concepts and cultural food patterns in planning and producing meals; meal service in professional settings; and appreciation of food as a nutrient delivery pathway for gustatory perspective. Per week: Lecture (3 hours), practicum (6 hours). Laboratory fee. Prerequisite: Basic Nutrition.

**DTCS 304. Community Nutrition. 4 Units.**

Community-based nutrition education which requires knowledge of normal nutrition and life-cycle issues. Includes nutrition assessment; medical nutrition-therapy topics; 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.

**DTCS 305. Professional Issues in Nutrition and Dietetics. 1 Unit.**

Examines the growth of nutrition and dietetics as a profession, and the role of the professional in the restoration and maintenance of health. Nontraditional roles of the registered dietitian and dietetic technician, registered. Emphasizes development of professionalism, accountability, and responsibility for life-long learning. Requires preparation of a professional portfolio and a project completed throughout the program and submitted prior to graduation. May be repeated once for credit.

**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. Prerequisite: Anatomy and physiology, biochemistry.

**DTCS 329. Organic Chemistry with Applications for Nutrition. 4 Units.**

Covers the nomenclature, chemical/physical properties, and common reactions of carbon-based compounds relevant to human nutrition.

**DTCS 334. Biochemistry with Applications for Nutrition. 4 Units.**

The chemistry and metabolism of carbohydrates, lipids, proteins, and nucleic acids. Preliminarily investigates the chemical basis of life processes, emphasizing aspects of human nutrition. Includes laboratory experiments to support student competency. Prerequisite: DTCS 329; or equivalent.

**DTCS 338. Introduction to Clinical Nutrition. 2 Units.**

Basic knowledge of the responsibilities of the clinical dietitian: familiarizing students with the electronic medical record and the nutrition care process. Emphasizes nutrition assessment knowledge and skills.

**DTCS 340. Nutrition through Life Stages. 3 Units.**

Includes a review of basic nutrition, as well as normal nutrition needs of individuals across the life span, with a focus on pregnancy and lactation; normal infant growth and development; and childhood and adolescence. Adult men's and women's health issues, geriatrics, food allergies, vegetarian diets, obesity, and eating disorders.

**DTCS 342. Medical Nutrition Therapy I. 5 Units.**

Basic biochemical and physiological conditions necessitating dietary modifications in the clinical management of the patient. Includes cardiovascular disease and hypertension, diabetes. Involves patient interviewing and counseling, nutrition assessment and documentation, and use of computer-assisted nutritional analysis. Ongoing study of medical terminology. Advanced topics include lipids and antioxidants.

**DTCS 343. Medical Nutrition Therapy II. 5 Units.**

Basic biochemical and pathophysiologic processes necessitating dietary modifications in clinical patients with pulmonary disease; disorders of the digestive, liver, and biliary systems, and pancreas; alcoholism; renal disease; solid-organ transplantation; and sepsis/trauma. Nutrition assessment, patient interviewing, and counseling. Applies enteral and parenteral nutrition support when indicated. Introduces preparation of an in-depth case study.

**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 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 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 446. Nutrition Counseling and Education. 3 Units.**

Applies techniques of nutrition counseling, with emphasis on improving skills in verbal and nonverbal communication, assertiveness, and dealing with cultural differences as well as death and dying. Builds skills in administration for the nutrition counselor. Discusses ethical implications in health care. Per week: Lecture (2 hours), practicum (3 hours). Prerequisite: DTCS 343.

**DTCS 452. Advanced Nutrition. 4 Units.**

Covers three interrelated topics in modern nutrition research: functional foods that provide physiological benefit beyond meeting basic nutritional needs; food toxicology—that is, the physiological consequences of natural and synthetic toxins found in the foods we consume; and nutritional genomics applied to evaluation of the links between nutrition, health, and the human genome. Prerequisite: DTCS 321.

**DTCS 453. Advanced Medical Nutrition Therapy. 3 Units.**

Theory and application of critical-care nutrition to complex medical conditions. Interpretation and synthesis of 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. Focus on a problem-list approach to nutrition assessment, documentation, intervention, and outcome evaluation. 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. Prerequisite: Basic foods, human nutrition, organic chemistry.

**DTCS 473. Medical Nutrition Therapy Affiliation. 6,12 Units.**

Student applies knowledge and skills in clinical facilities as they work 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 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. Prerequisite: Anatomy and physiology.

**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 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 524. Food Ethics. 2 Units.**

Explores ethical issues related to food, nutrition, and dietetics. Topics include food science, policy, food security, religious and cultural beliefs, malnutrition, professional practices, media, and 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 546. Introduction to Integrative and Functional Medical Nutrition Therapy. 3 Units.**

Introduces guiding principles for the practice of integrative and functional medical nutrition therapy. Applies the clinical nutrition care process (assessment, diagnosis, intervention, monitoring, and evaluation) to restoring function for a client, focusing on nutritional imbalances characteristic of chronic disease pathophysiology, supporting individuals with persistent symptoms, and preventing chronic disease by addressing root causes. Prerequisite: DTCS 342, DTCS 343.

**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 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. 5 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 584. Contemporary Issues in the Dietetic Profession. 4 Units.**

Investigates nutrition trends in the public arena. Reviews 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 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 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. Prerequisite: DTCS 575.

**DTCS 778. Clinical Nutrition Affiliation. 6,12 Units.**

Student applies knowledge and skills in clinical facilities as they work 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.

## Emergency Medicine (EMDN)

### Courses

**EMDN 821. Emergency Medicine Clerkship. 1.5-3 Units.**

Focuses on management of the undifferentiated or emergent patient presentation. Exposes students to areas unique to emergency medicine, such as the emergency medical system. Utilizes bedside teaching, lectures, online/independent learning, and simulation to instruct the student in distinguishing emergent vs nonemergent presentations in the following patient categories: altered mental status, abdominal pain, chest pain, respiratory distress/shortness of breath, shock, syncope, trauma, and fever.

**EMDN 891. Emergency Medicine Elective. 1.5-27 Units.**

Provides emergency department experience in several locations. Includes, contact with adult and pediatric patients; introduction to administrative interaction, residency conferences, and grand rounds; and, interaction with the radio room, triage desk, and transport nurse.

## Emergency Preparedness and Response (EMPR)

### Courses

**EMPR 524. Local and State Emergency Preparedness and Response. 3 Units.**

Utilizes a case-study approach to examine the actions and interventions of public health practitioners and emergency managers applied to multiple phases of a disaster. Emphasizes development of an operational understanding of the emergency support functions that have local and regional application, as well as of public health emergencies faced by local communities.

**EMPR 525. National and International Emergency Preparedness and Response. 3 Units.**

Utilizes a case-study approach to examine the actions and interventions of public health practitioners and 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, as well as the public health emergencies faced by global communities.

**EMPR 526. Public Health Issues in Emergency Preparedness and Response. 3 Units.**

Examines the critical public health considerations and environmental health issues of concern in an emergency, disaster, or complex humanitarian emergency. Covers public health responsibilities of assessment, water and food, shelter, sanitation, and prevention of communicable diseases. Utilizes case studies and a table-top exercise to provide practical application of the principles presented in the class.

**EMPR 540. Seminars in Emergency Preparedness and Response. 3 Units.**

Utilizes current events and case studies to illustrate current issues in emergency preparedness and response. Guided discussions on infectious disease, isolation, and quarantine; WMDs; biosurveillance and medical countermeasures; surge capacity and medical evacuation; psychosocial impacts; role of technology. Emphasizes situational analysis, public relations, and risk communication.

## 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 657. Written/Oral Board Review Course for the American Board of Endodontics. 2 Units.**

Weekly lecture series that exposes advanced specialty students to the crucial content and format of the American Board of Endodontics (ABE) examination. Assists students with preparing for and taking the required written portion of the examination prior to completion of the endodontics program, and exposes them to the oral examination that is part of the board certification process for the endodontics profession.

**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 their 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.

## 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 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. Criteria and methods of inspection and surveillance, 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. Prerequisite: Program prerequisite courses or written consent of program advisor.

**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 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. Prerequisite: Program prerequisite courses; or written consent of program advisor.

**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. Prerequisite: Program prerequisite courses; or written consent of program advisor.

**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. Prerequisite: Program prerequisite courses; or written consent of program advisor.

**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 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. Prerequisite: Consent of instructor responsible for supervision and of program advisor.

**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. Prerequisite: Consent of instructor responsible for supervision and of program advisor.

## Environmental Sciences (ENVS)

### Courses

**ENVS 310. Energy and the Environment. 3 Units.**

Reviews the environmental impact of traditional energy sources. Explores novel and emerging sources of renewable energy, including solar, wind, and hydroelectric systems, as well as energy storage and distribution. Focuses on individual, industrial, and community energy requirements and solutions.

**ENVS 314. Air Water and Land Pollution. 3 Units.**

Covers air quality, accumulated atmospheric pollutants, as well as major types and sources of air pollutants. Deals with water quality and how pollutants impact organisms in aquatic environments, surveying sources of water pollutants that include heavy metals, chemicals, biologicals, and nutrients. Discusses chemical contaminants and visible wastes in relation to agriculture, mineral and energy extraction, and industrial waste.

**ENVS 410. Marine Pollution. 3 Units.**

Explores contemporary issues of marine pollution such as non-persistent organic and inorganic pollution, microbial pollution, liquid wastes and the impact of coastal wastewater treatment, plastics, and solid wastes including heavy metals. Ecotoxicology topics discuss distribution of marine pollutants, bioaccumulation, biotransformation, and toxicity testing. Addresses monitoring and abatement of marine pollution utilizing biomarkers and pollution control.

**ENVS 434. The Environmental Context of Community Health. 3 Units.**

Presents biological, ecological, and human environmental factors found in environmental and community health studies. Includes: asset assessments; identification of key needs; and, dialogue with community partners. Consideration of possible implementation strategies and experience in a developing country. Includes 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 464. Science Communication Outreach. 1 Unit.**

Guided immersion into science communication outreach. Presentation of principles of communication outreach and small group work. Student teams participate in project that interacts with a specific, identified community. Undergraduate students will work with graduate students in small teams and engage collaborative planning to address a community need, then present, evaluate, and reflect on the experience. Cross-listing: GEOL 464.

**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. Prerequisite: Internship and registration approval by a faculty member in the Department of Earth and Biological Sciences.

**ENVS 488. Topics in Environmental Sciences. 1-4 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.

## Epidemiology (EPDM)

### Courses

**EPDM 509. Principles of Epidemiology. 3 Units.**

Outlines principles and methods used to investigate distribution, determinants, and disease prevention strategies. Includes: measures of disease frequency, effect, and potential impact; comparison and contrast of study designs; methods to identify and control confounding; methods to improve validity, information, and selection bias; and, methods to assess causation, evaluate statistical significance, evaluate screening for latent disease, and interpret results. Prerequisite or concurrent: STAT 509 or STAT 521; or consent of instructor.

**EPDM 510. Epidemiologic Methods I. 3 Units.**

An intermediate-level course on epidemiologic concepts and methods. Topics include causation, measures of disease occurrence, measures of effect, study design, types of bias, assessment and correction for bias, confounding, and interaction. Prerequisite: EPDM 509; STAT 521; or consent of instructor.

**EPDM 511. Epidemiologic Methods II. 3 Units.**

Second course in the epidemiologic methods sequence. Advanced study designs and multivariable modeling of exposure-disease relationships. Includes: hybrid and incomplete designs; the model-building approach; generalized linear and multi-variate models; and, maximum likelihood theory. Prerequisite: EPDM 510; STAT 522; or consent of instructor.

**EPDM 512. Epidemiologic Methods III. 3 Units.**

Expands coverage of generalized linear models and time-to-event models. Covers contemporary advancements in epidemiologic methods in the analysis of observational data. Exercises focus on data analysis and written reports. Prerequisite: EPDM 511; STAT 522; or consent of instructor.

**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. Prerequisite: EPDM 509; STAT 509 or STAT 521.

**EPDM 520. Data Collection Methods. 3 Units.**

An overview of the principles and procedures of data collection as applied to the health sciences. Topics covered include: research designs; different research techniques (quantitative, qualitative, and mixed methods); modes of data collection; sampling methods; questionnaire development; sources of error in data collection; and ethical research. Students develop a data-collection instrument and perform data collection from initial conceptualization of the research topic.

**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. Prerequisite or concurrent: EPDM 509.

**EPDM 530. Disease Distributions and Determinants I. 3 Units.**

First of a two-course sequence on the distributions of common diseases and their determinants. Covers the epidemiology of cardiovascular disease, diabetes, obesity, and related risk factors that include nutritional and social epidemiology. Prerequisite: EPDM 509; or consent of instructor.

**EPDM 531. Disease Distributions and Determinants II. 3 Units.**

Second of a two-course sequence on the distributions of common diseases and their determinants. Covers the epidemiology of cancer, genetic and molecular epidemiology, environmental epidemiology, and related risk factors. Includes special topics. Prerequisite: EPDM 509; or consent of instructor.

**EPDM 544. Epidemiology of Infectious Disease. 3 Units.**

Applies epidemiologic concepts, methods, and principles to infectious diseases of public health significance. Addresses "old," changing, and emerging diseases. Discusses the role of surveillance systems in infection control and the potential of developing appropriate public health interventions within the context of prevention, control, and eradication programs. Prerequisite or concurrent: EPDM 509.

**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. Includes: medical care as a process; use of control charts in process improvement; measurement of quality of care; and, patient satisfaction. Addresses cost benefit, cost effectiveness, cost utility, and decision-tree analysis applied to medical care and public health. Prerequisite: EPDM 509 or EPDM 510.

**EPDM 567. Epidemiology of Aging. 3 Units.**

Presents global demographic trends, determinants, and measures of population-age structure. Includes: health, morbidity, disability, and mortality; mechanisms, biomarkers, and genetics of aging; chronic disease risk factors and prevention; research and clinical trials; ethics; economics; and, drug use. Prerequisite or concurrent: EPDM 509 or EPDM 510; STAT 509 or STAT 521.

**EPDM 588. Environmental and Occupational Epidemiology. 3 Units.**

Evaluates principles and 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. Epidemiologic analysis of selected and controversial environmental exposures that impact public health practice, disease morbidity, and mortality outcomes. Prerequisite: EPDM 509 or EPDM 510; STAT 509 or STAT 521.

**EPDM 610. Advanced Epidemiologic Methods. 4 Units.**

Provides in depth training in study designs and multivariable modeling of exposure-disease relationships. Uses model-building approaches, including causal diagrams, methods of variable selection and specification, confounding, interaction, and trend testing. Focuses on survival analysis concepts. Prerequisite: EPDM 509; EPDM 510; STAT 521; STAT 522; STAT 548.

**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. Prerequisite: EPDM 509.

**EPDM 635. Epidemiological Studies of Adventists. 1 Unit.**

Reviews and critically evaluates the epidemiological research conducted in Seventh-day Adventist populations. Examines the history, rationale, methods, findings, and scientific contributions of this research. Prerequisite: EPDM 509.

**EPDM 645. Epidemiology of Tobacco Use and Control. 2 Units.**

An epidemiological overview of the tobacco pandemic—global/national tobacco trends, socioeconomic impact, prevention/control issues, and multisectoral strategies. Describes tobacco's "hidden" burden relative to infectious diseases and adverse maternal-infant outcomes. Introduces basic tools to measure tobacco use, monitor tobacco policy implementation, conduct surveillance/evaluation of global/local tobacco control programs. Facilitates participation in ongoing field-based projects.

**EPDM 664. Epidemiology of Cardiovascular Disease. 2 Units.**

Examines both the descriptive and etiologic epidemiology of the major cardiovascular diseases, including hypertension, ischemic heart disease, congestive heart failure, and stroke. Covers the experimental designs and analytic techniques commonly used in cardiovascular epidemiology. Critically reviews the experimental and epidemiological evidence relating risk factors for cardiovascular diseases. Reviews the design and results of major cardiovascular disease intervention studies. Prerequisite: EPDM 509.

**EPDM 665. Epidemiology of Cancer. 2 Units.**

Examines both the descriptive and etiologic epidemiology of cancer. Examines recent statistics and historic trends for disease burden, incidence, survival, and mortality in the US and globally. Critically reviews the literature on the etiology, risk factors, and prevention of particular high-incidence/mortality cancers, with an emphasis on the role of lifestyle factors (tobacco, alcohol, diet, physical activity, and obesity). Prerequisite: EPDM 509.

**EPDM 668. Molecular Epidemiology. 2 Units.**

Provides an overview of basic concepts of molecular epidemiology, with a focus on applications of biomarkers in epidemiology. Covers technologies, tools, and design considerations for epidemiologic studies involving biomedical data. Includes a survey of standard techniques for statistical analysis in molecular epidemiology. Prerequisite: EPDM 509.

**EPDM 685. Preliminary Research Experience. 1,2 Unit.**

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 694. Research. 1-14 Units.**

Independent epidemiologic research program arranged with faculty member(s) involved. Written report and oral presentation required. Prerequisite: Consent of instructor responsible for supervision and of academic advisor.

**EPDM 697. Dissertation Proposal. 1-10 Units.**

Student develops the written dissertation proposal. Doctoral dissertation committee chairman works with the student on mutually agreed-upon objectives. Evaluation based on the accomplishment of these objectives. Culminates in a written and oral dissertation proposal defense and advancement to candidacy. Doctoral students only. Successful completion of comprehensive exams.

**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. Prerequisite: EPDM 697 and advancement to candidacy.

**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.

## Excellence in STEM Experiential Education (EXSD)

### Courses

**EXSD 504. EXSEED STEM Education. 3 Units.**

Individually and collaboratively investigate STEM/STREAMS initiatives and programs at all K-12 levels. Includes examination of state and Seventh-day-Adventist education standards, exploring an interdisciplinary approach to STEM/STREAMS education using a project-based learning approach through a mission-focused learning lens. Incorporates a blend of hands-on workshops, readings, and reflective discourse opportunities. Grant proposal writing will be considered a voluntary and enhancing component.

## Family Medicine (FMDN)

### Courses

**FMDN 599. Directed Elective Study. 1.5-18 Units.****FMDN 701. Family Medicine Clerkship. 1.5-9 Units.**

Presents concepts and practice of family-centered primary health care in family medicine. Includes: patient assessment; basic diagnosis and treatment; recognition of psychosocial problems; and, the practice of integrative and whole person care by assessing patient strengths and stresses within the context of family, community, support systems, and spiritual life.

**FMDN 821. Family Medicine Subinternship. 1.5-6 Units.**

A four-week rotation during which the senior subintern participates as a member of the family medicine inpatient service team. Provides experience in managing hospitalized patients and hospital follow-up, with emphasis on increasing decision-making skills. Increases students' knowledge about acute illnesses and treatment, and familiarizes students with management of patients over the period of transition from the inpatient to the outpatient setting.

**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.

## Geology (GEOL)

### Courses

**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.**

Study minerals and their occurrences 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.**

Introduction to classification and origin of igneous and metamorphic rocks. Study phase diagrams and processes controlling magma crystallization. Examine relationship of plate tectonics to the genesis and distribution of igneous and metamorphic rocks. Three class hours and one three-hour laboratory or field trip per week.

**GEOL 318. Sedimentary Petrology. 3 Units.**

Introduces the classification and origin of sedimentary rocks. Studies common constituents of sedimentary rocks, their classification systems, and analytical approaches, using hand samples and thin sections. One class period, and two three-hour laboratory sessions or a field trip per week. Prerequisite: GEOL 316; or consent of instructor.

**GEOL 416. Sedimentology and Stratigraphy. 6 Units.**

Focus on the sedimentary rock record through a study of rock types, depositional processes, and models. Stratigraphic nomenclature and approaches to correlation on local, regional, and 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. 5 Units.**

Theory of stress and strain and examination of rock deformation in a framework of plate tectonics. Examples presented in field settings.

**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, and biogeography of ancient fossil vertebrates, with emphasis on the origins of major groups.

**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 436. Low Temperature Geochemistry. 4 Units.**

Principles of the chemistry of systems that pertain to surface geological and environmental settings. Major topics include: water quality, mineral solubility, natural systems represented by chemical equations, carbonate equilibrium systems, mineral stability plots, and oxidation-reduction systems. Prerequisite: College chemistry; consent of instructor.

**GEOL 443. Historical Geology. 4 Units.**

Overview of salient geological and paleontological features in the geological record, explaining the way they are interpreted in the formulation of models of Earth's history.

**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 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. Science Communication Outreach. 1 Unit.**

Guided immersion into science communication outreach. Presentation of principles of communication outreach and small group work. Student teams participate in project that interacts with a specific, identified community. Undergraduate students will work with graduate students in small teams and engage collaborative planning to address a community need, then present, evaluate, and reflect on the experience. Cross-listing: ENVS 464.

**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 485. Seminar in Geology. 0.5 Units.**

Presentations and discussion of selected topics featuring recent developments. Members of all geology meet together.

**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.**

A didactic course in a specified area of earth science to cover time-sensitive subjects or topics on demand. Requires an independent study title request form that describes the specific area covered in the class and course requirements.

**GEOL 489. Readings in Geology and Paleontology. 1-4 Units.**

Focused readings and discussion of literature with course instructor in a seminar setting. Requires an independent study title request form that describes the specific area covered in the class and course requirements.

**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.**

Credit for supervised research activities, including activities related to completion of the senior thesis. Requires an independent study title request form that explains the research and evaluation criteria.

**GEOL 510. Orientation to Graduate Geology. 1 Unit.**

Provides a platform for introducing students to skills and strategies for successfully navigating through their graduate degree and for planning their future professional career development.

**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. 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 515. Sedimentology and Stratigraphy. 3 Units.**

Studies the weathering, transport, and deposition of sediments as well as the principles of stratigraphy and application of stratigraphic methods. Provides laboratory exercises and field projects to build experience with analysis of sedimentary structures and sequences, and analysis of stratigraphic relationships. Develops skills in illustrating and reporting sedimentological features observed in the field as well as stratigraphy relating to outcrops. Prerequisite: GEOL 318, 529; or consent of instructor.

**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 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 527. Earth Materials – Advanced Mineralogy. 4 Units.**

Examines mineral groups related to student research. Advances the study of crystallography, chemical variation, microstructures, deformation, and occurrences of minerals. Develops analytical skills using optical properties, SEM/EDS, XRD, gravimetric, and FTIR. Demonstrates competence with characterization of unknown minerals through portfolio projects. Three in-class hours, and one three-hour laboratory or field trip per week. Prerequisite: GEOL 316; or consent of instructor.

**GEOL 528. Earth Materials – Advanced Igneous Petrology. 4 Units.**

Provides advanced study of the igneous rocks, using whole-rock and mineral chemistry variation, microstructures and microtextures, deformation, and tectonic settings to address processes that affected their evolution in a regional/global geological framework. Develops analytical skills using petrographic and modeling techniques to place quantitative constraints on petrologic processes. Portfolio projects demonstrate competence in the development of petrogenetic models. Prerequisite: GEOL 316; or consent of instructor.

**GEOL 529. Earth Materials – Advanced Sedimentary Petrology. 3 Units.**

Analyzes, classifies, and describes sedimentary rocks. Uses qualitative and quantitative techniques to produce illustrated reports of texture, composition, diagenesis, and porosity. One class period, and two three-hour laboratory sessions or field trip per week. Prerequisite: GEOL 316; or consent of instructor.

**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 537. Field Geology Sedimentology and Stratigraphy. 2 Units.**

Develops field geology skills for sedimentary rock sequences as well as field measurements and descriptions of sedimentary lithologies, facies, and sequences. Applies stratigraphic approaches in the field as well as assembly and interpretation of geologic reports based on previously collected and new field data. Prerequisite or concurrent: GEOL 515; or consent of instructor.

**GEOL 538. Field Mapping and Geologic Report Writing. 4 Units.**

Teaches advanced geologic mapping of complex areas, with interpretation of their history. Explores the use of technology to collect and record field data. Explains how to incorporate published data and field measurements into figures, maps, and geologic reports. Prerequisite: GEOL 424; or consent of instructor.

**GEOL 539. Field Geology Structures and Igneous Rocks. 2 Units.**

Explores the study of structures and deformation to characterize pluton emplacement. Uses structural and petrographic data derived from systematic geological mapping, detailed petrographic descriptions, and structural characterization carried out in outcrops and rock thin sections—coupled with kinematic studies—in order to determine origin, emplacement conditions, and deformation phases of the rocks. Prerequisite or concurrent: GEOL 424; or consent of instructor.

**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 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 and Evaporite Geology. 4 Units.**

Advanced course on the geology of carbonate and evaporite rocks, including: petrography, depositional systems, diagenesis, and overview of current topics of research. Includes weekly laboratory experience in the analysis of carbonate and evaporite samples and a field trip to ancient carbonate sequences.

**GEOL 556. Paleoenvironments. 3 Units.**

Venue to learn skills to distinguish and reconstruct ancient depositional environments. Applies paleontologic, sedimentologic, and geochemical data and methods to interpretation of paleoenvironments, 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-based geology that integrates with GEOL 556, Paleoenvironments. Ten days spent visiting a variety of ancient and modern depositional environments. Published observations reviewed and relived to develop a regional context and collect primary field data.

**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. Prerequisite: GEOL 475.



**GEOL 565. Analysis of Sedimentary Rocks. 4 Units.**

Provides exposure to range of analytical tools used for assessment in sedimentary geology. Tools covered include: saws and grinders, photography through microscope, point counting with optical microscope, x-ray diffraction of bulk and clays, scanning electron microscopy with EDS, magnetic susceptibility, grain size analysis, acid insoluble residues, making thin sections, MP-AES, GPS, image analysis, and error analysis. Participants will use case studies to develop skill in project design.

**GEOL 566. Clastic Sedimentary Geology. 4 Units.**

Advanced course on the geology of clastic sedimentary rocks—including: petrography, depositional systems, diagenesis, and overview of current topics of research. Includes weekly laboratory experience in the analysis and description of clastic rock samples and a field trip to ancient clastic sequences.

**GEOL 567. Stratigraphy and Basin Analysis. 4 Units.**

Addresses vertical and lateral relationships of sedimentary units and facies in the context of the development and filling of sedimentary basins within a chronostratigraphic framework. Emphasis on the impact of tectonics, sea level variations, and autogenic processes and their expression as sequences with specific stratal geometries in different basin types. Both surface (field outcrop studies) and subsurface (well logs and seismic stratigraphy) approaches to basin analysis will be covered.

**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.**

A didactic course in a specified area of earth science to cover time-sensitive subjects or topics on demand. Requires an independent study title request form that describes the specific area covered in the class and course requirements.

**GEOL 594. Readings in Geology and Paleontology. 1,2 Unit.**

Focused readings and discussion of the literature with the course instructor in a seminar setting. Requires an independent study title request form that describes the specific area covered in the class and course requirements.

**GEOL 595. Readings in Limnogeology. 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.**

Presentations and discussion of selected topics featuring recent developments. Members of all geology programs meet together.

**GEOL 616. Research and Experimental Design. 2 Units.**

Concepts, methods, and tools of research, including experimental design and data analysis. Cross-listing: BIOL 616.

**GEOL 617. Proposal Writing and Grantsmanship. 2 Units.**

Develops skills in writing proposals and in acquiring funding for research. Increases understanding of the culture of research. Reviews the infrastructure of science funding and identifies individualized sources of potential funding. Presents successful proposal-writing strategies for both governmental and nongovernmental sources of funding. Emphasizes development of effective writing skills during preparation of the student's thesis or dissertation proposal.

**GEOL 618. Writing for Publication. 1 Unit.**

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 664. Science Communication Outreach. 1 Unit.**

Guided immersion into science communication outreach. Principles of communication outreach and small group work presented. Student teams devise project that engages a specific, identified community. Small teams collaboratively interact with community to address a need, present findings, evaluate impact, and reflect on experience. Cross-listing: BIOL 664.

**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.**

Credit for supervised research activities. Requires an independent study title request form that explains the research and evaluation criteria.

**GEOL 698. Thesis Research. 1-8 Units.**

Credit for supervised research activities and for writing of the master's thesis. Requires an independent study title request form that explains the research and evaluation criteria. Grade received does not indicate whether thesis is completed and approved.

**GEOL 699. Dissertation Research. 1-8 Units.**

Credit for supervised research activities and for writing the doctoral dissertation. Requires an independent study title request form that explains the research and evaluation criteria. 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 654. Therapeutic Interventions with Older Adults. 3 Units.**

Integrates theories and practice skills needed for effective interventions with older adults and their families. Considers the significance of the individual's bio-psychosocial-spiritual history within an environmental context while also recognizing the specific needs of older adults. Assessment and evidence-based clinical intervention methods that bridge health and mental health services are also examined along with service delivery and case-management systems.

**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. 1,4 Unit.**

Provides experiential learning in advanced criminal justice practice. Students complete 200 practicum hours and 20 hours of concurrent seminar over one or four quarters, depending on the program option.

## Global Health (GLBH)

### Courses

**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. Includes: approaches to preventing/controlling the epidemic; socioeconomic, political, and health impact of HIV/AIDS; and, related implications such as legal, ethical, and health-care management issues.

**GLBH 517. Cultural Issues in Health Care. 3 Units.**

Critical analysis of broad sociocultural and political forces that impact domestic and international health, and health-care access and delivery. Addresses how culture informs the understanding and experience of health and illness. Introduction to assessment of race relations and ethnocentric beliefs and attitudes that contribute to the gap between marginal populations and health-care providers. Presents sociocultural change strategies within the context of power and privilege.

**GLBH 524. Cultural Competence and Health Disparities. 2 Units.**

Introduces diversity and cultural responsiveness in public health and health care. Examines population diversity, health professions diversity, and cultural responsiveness in addressing and eliminating disparities in national and global health. Discusses biological inheritance, race and ethnicity identifiers, socioeconomic, socioenvironment, and health-care beliefs and behavior. Introduces cultural competency in public health and tenets for developing and applying cultural awareness.

**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. Prerequisite: GLBH 564, GLBH 565, GLBH 566, GLBH 567, GLBH 568, GLBH 569.

**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 564. Fundamentals of Global Health and Development I. 2 Units.**

Addresses the context and realities of global health as well as transformational development. Reviews the history of global health; analyzes the burden of disease at global, national, and local levels; examines cultural, social, economic, political, and environmental determinants of health; assesses vulnerable populations; reviews prevention strategies; and studies global pharmaceutical supplies. A low- or middle-income country is researched throughout the year.

**GLBH 565. Interventions in Community Health and Development I. 3 Units.**

First of three courses addressing methodological techniques and skills applicable to planning, implementation, and evaluation of primary health-care programs. Focuses on improvement of 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.

**GLBH 566. Fundamentals of Global Health and Development II. 2 Units.**

Addresses the context and realities of global health as well as transformational development. Analyzes roles of specific disease processes that have a major role in global health, such as non-communicable diseases, maternal and child health, disasters, violence, conflict and war, and mental health. Prioritizes problems of a country of interest and explores possible interventions.

**GLBH 567. Interventions in Community Health and Development II. 3 Units.**

Second of three courses addressing methodological techniques and skills applicable to planning, implementation, and evaluation of primary health-care programs. Focuses on improvement of 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. Prerequisite: GLBH 565.

**GLBH 568. Fundamentals of Global Health and Development III. 2 Units.**

Addresses context and realities of global health as well as transformational development. Analyzes public health systems at global, national, and subnational levels. Includes assessing health workforce, health financing, policies, and programs through non-governmental, United Nations, bilateral, and multi-lateral global health organizations as well as methods for monitoring and evaluating impact. Describes local health governance and diplomacy, and engagement in professional career development.

**GLBH 569. Interventions in Community Health and Development III. 3 Units.**

Third of three courses addressing methodological techniques and skills applicable to planning, implementation, and evaluation of primary health-care programs. Focuses on improvement of 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. Prerequisite: GLBH 565, GLBH 567.

**GLBH 575. Administration and Leadership of Health Systems and Services in Low Resource Settings I. 3 Units.**

First of three courses, introduces basic principles and practice of health systems and services in low-resource settings. Reviews health systems as well as administrative practices for health services. Presents theory and builds practice skills in the following subjects: governance and management; financial management and reporting; strategic marketing; and human resource management. During the quarter, students work with a hospital in a low-resource setting on a case study.

**GLBH 576. Administration and Leadership of Health Systems and Services in Low Resource Settings II. 3 Units.**

Second of three courses, introduces basic principles and practice of health systems and services in low-resource settings. Reviews principles of culturally competent and ethical health systems and services. Presents theory and builds practice skills in the following subjects: organizational culture, change management, ethical practices, and culturally competent leadership. During the quarter, students work with a hospital in a low-resource setting to apply concepts to a case study.

**GLBH 577. Administration and Leadership of Health Systems and Services in Low Resource Settings III. 3 Units.**

Third of three courses, introduces basic principles and practice of health systems and services in low-resource settings. Reviews community health and development as well as patient safety and quality management. Teaches theory and builds practice skills in the following subjects: hospitals as centers of health, social determinants, data use, patient safety, and performance/quality of care. During the quarter, students work with a hospital in a low-resource setting on a case study.

**GLBH 578. Integrated Health Systems and Services. 4 Units.**

Analyzes issues, challenges, resources, and strategies in leading and managing health systems and services in low-resource settings. Focuses on basic leadership and management needs of rural and urban health services. Taught from the perspectives of leadership, management, and governance principles as well as organizational change, cultural humility, self-reflection, and public health. Prerequisite: GLBH 564, GLBH 566, GLBH 568, GLBH 575, GLBH 576, GLBH 577; acceptance into global health major.

**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.

## 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 622A. Biomedical Science. 2 Units.**

Advanced, one-quarter course offered Fall Quarter annually. Includes an overview of immunology, developmental anatomy of the head and neck, TMD symptomology and treatment modalities, bacterial cytology, growth and metabolism, emerging infectious diseases with focus on HIV/AIDS and Hepatitis C, dental caries and caries risk assessment, antibiotics and their mechanisms of action and clinical application, viral diseases, and the connection between oral and systemic diseases.

**GRDN 622B. Biomedical Science. 2 Units.**

Advanced, one-quarter course offered annually Winter Quarter. Includes cell cycles, wound healing, surgical principles, oral principles, implants, and radiology. Prior basic knowledge in the various topic areas expected. Prerequisite: GRDN 622A.

**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 700. Advanced Dental Education Remediation. 1-8 Units.**

Outlines how deficiencies will be remediated and reassessed for the course in question.

## 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.**

Addresses normal and high-risk obstetrics and gynecology, women's health, reproduction, birth control, gynecological cancers, and gynecological pathology in a clinical setting. Includes examinations, diagnoses, procedures, deliveries, and surgeries.

**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 506. Fundamentals 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, and lease financing. Prerequisite: HADM 507 or equivalent.

**HADM 508. Accounting Fundamentals in Health-Care Management. 4 Units.**

Overview of basic health-care accounting principles including accounting cycle, balance sheets, income statements, ethics, internal controls, accounting for assets, current liabilities, and stockholder equity. In addition, fundamentals of managerial accounting topics will be explored using key financial and managerial accounting tools to assist in making informed health care decisions. Prerequisite: Introduction to accounting course.

**HADM 510. Health Policy Analysis and Synthesis. 3 Units.**

Introduces major approaches for understanding the health policy process. Explores how to identify and analyze the forces and interests involved in health policy issues, including stakeholder analysis. Examines how to write a policy brief and describes various techniques of advocating for health policy change.

**HADM 514. Health-Care Economics. 3 Units.**

Uses analytical tools of economics to describe the behavior of various agents in the health-care industry, including providers and patients, third party payers, the government, and the pharmaceutical industry. Explores the importance of health-care labor markets; analyzes the issue of equity, efficiency, and costs; and explores differences between health-care systems around the world.

**HADM 515. Managerial Epidemiology. 3 Units.**

Overview of epidemiological concepts including exploration, analysis, and interpretation of epidemiology data and statistical measures utilized in epidemiology studies. Considers how epidemiology is used to reinforce a population health-based approach in health management and service delivery.

**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 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. Applied Leadership Concepts in Health-Care Organizations. 3 Units.**

Enhances and applies leadership principles related to managing change process, building and strengthening teams, practicing skills in persuasion and resolution of conflicts, and developing innovative and skilled leaders. Uses case studies and interactive methods to create an innovative environment in which students can apply and enhance their knowledge of the health-care industry.

**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.**

Strategies for advancing health policy messages. Identifies various forms of public communication and provides techniques for communicating effectively with the mass media and stakeholders in the health system. Focus on critical thinking in addition to oral and written communication.

**HADM 545. Government Policy and Health Disparities. 3 Units.**

Overview of health disparities in framing health policy discussions. 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 how research is used in documenting disparities and evaluating interventions.

**HADM 555. Health-Care Delivery Systems. 3 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 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. Prerequisite: HADM 506.

**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 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.

**HADM 587. Health Policy Analysis 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. Explores the relationship between statistics, research, and public policy; and understanding policy development and the politics that inform 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. 3 Units.**

Explores leadership through reflection on and analysis of past experiences, readings in textbook and articles, discussion of contemporary leadership theories, and learning activities designed to apply this knowledge to the student's personal setting. Focuses especially on discussion of issues encountered in leading teams and organizations. Assesses leadership style as well as applied leadership, change theory, entrepreneurial skills, and innovative practice.

**HADM 594. Applied Health-Care Management Project. 2 Units.**

Development of an applied project for a health-care organization. Prerequisite: HADM 607; completion of 40 units of program requirements; program director approval.

**HADM 595. Leadership—Past, Present, and Future. 3 Units.**

Studies in depth 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. Quantitative Methods in Health-Care Management. 3 Units.**

Use of quantitative techniques to analyze processes and apply decision-making tools to optimize performance in health-care institutions. Includes forecasting, facility location and layout, resource allocation, workload management, productivity measurement, supply chain and inventory management, quality control and improvement, project management, and queuing theory. Prerequisite: STAT 509; or consent of instructor.

**HADM 604. Health Systems Strategic Planning. 3 Units.**

Describes strategic planning process and examines tools needed to analyze external factors and internal capabilities related to an organization. Includes: development of vision, mission, and goal statements; objectives; control mechanisms; human resource management; marketing; finance; and, impact of business, demographic, cultural, political, and regulatory decisions on long-term success.

**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 607. Orientation to Professionalism Seminar. 1 Unit.**

Prepares students for professional distinction in their careers through participation in a seminar series, resume preparation, self-assessments, and other activities. Serves as an orientation to either the 800-hour practicum series (HADM 724) or the applied project-based course (HADM 594).

**HADM 616. Health Systems and Population Health. 3 Units.**

Employs an economics framework to explore policy issues such as quality and cost within different sectors of health care. Uses a population health perspective to evaluate social determinants of health and considers health systems, community-based, and legal strategies for improvement.

**HADM 620. Health Policy Theories and Concepts. 3 Units.**

Introduces key theories, writers, and conceptual frameworks that influence contemporary health policy analysis and development. Reviews the evolution of health policy in the US. Examines the health policy development process, which includes problem identification, policy formulation, and implementation.

**HADM 625. Health Policy Advocacy and Civic Engagement. 3 Units.**

Matches students with public health—related agencies or coalitions to gain in-depth knowledge of agenda setting, power analysis, legislative research, and legislative advocacy in relation to specific health issues. Explains the impact of the political process and 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.

**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 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 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 697. Dissertation Proposal. 1-10 Units.**

Doctoral student develops a dissertation proposal and works in collaboration with the research adviser on mutually agreed-upon objectives that will provide the basis for evaluation. Culminates in a dissertation proposal. Prerequisite: Successful completion of comprehensive exams.

**HADM 698. Dissertation. 1-8 Units.**

Doctoral student prepares dissertation manuscript presenting results of the research study. Prerequisite: HADM 697 and advancement to candidacy.

**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. Prerequisite: Consent of department advisor and of instructors responsible for supervision.

**HADM 724A. Health-Care Administration Practicum. 2 Units.**

Provides experiential learning opportunities in health-care administration with an emphasis on student skill sets and interests, and organizational needs. Includes 100 clock hour practicum.

**HADM 724B. Health-Care Administration Practicum. 4 Units.**

Provides experiential learning opportunities in health-care administration with an emphasis on student skill sets and interests, and organizational needs. Includes 200 clock hour practicum.

**HADM 724C. Health-Care Administration Practicum. 6 Units.**

Provides experiential learning opportunities in health-care administration with an emphasis on student skill sets and interests, and organizational needs. Includes 300 clock hour practicum.

**HADM 724D. Health-Care Administration Practicum. 8 Units.**

Provides experiential learning opportunities in health-care administration with an emphasis on student skill sets and interests, and organizational needs. Includes 400 clock hour practicum.

# 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 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 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.**

Discusses theories and principles of traditional human resource management, as well as emerging trends and concepts. Explores hiring, training, personnel appraisal, task specialization, collective bargaining, compensation and benefits, and state and federal guidelines impacting human resources as well as assorted legal issues.

**HCAD 380. Writing for Health-Care Administrators. 3 Units.**

Expands upon entry-level writing coursework by teaching academic writing for the health-care environment. Develops information literacy, research, and writing skills through academic research and writing exercises.

**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.**

Use of geographic information system (GIS) methods to address key issues faced by managers responsible for health-care systems in government or private sector organizations. Focuses on geodesign; that is, the use of geotechnologies to find optimal solutions to geospatially defined issues. Introduces fundamentals of mapping, spatial query, pattern analysis, and spatial statistics. Emphasizes methods for modeling key processes in health care including suitability, movement, and interaction.

**HCAD 461. Portfolio for Health-Care Administration I. 3 Units.**

Part one of a two-course series preparing students for professional distinction in the field of health-care administration. Fosters personal and professional development through lectures, assessment, and related course activities. Student initiates an ePortfolio.

**HCAD 462. Portfolio for Health-Care Administration II. 3 Units.**

Part two of a two-course series preparing students for professional distinction in the field of health-care administration. Fosters personal and professional development through lectures, assessment, and related course activities. Completion of student ePortfolio. Prerequisite: HCAD 461.

**HCAD 491. Health-Care Administration Practicum I. 2 Units.**

Simulates professional practice experiences and assignments in health-care administration reflective of the junior year program curriculum topics. This first practicum experience includes virtual case studies, reflection pieces, and video-conference dialogues with industry professionals to simulate experiences students could have in various health-care environments. Combines written and oral reports of experience with classroom discussion.

**HCAD 492. Health-Care Administration Practicum II. 2 Units.**

Simulates professional practice experiences and assignments in health-care administration reflective of the senior year program curriculum topics. Includes advanced virtual case studies, reflection pieces, and video-conference dialogues with industry professionals to illustrate potential experiences in different health-care environments. Combines written and oral reports of experiences with classroom discussion. Prerequisite: HCAD 491.

**HCAD 498. Health-Care Policy and Strategy. 3 Units.**

Provides a comprehensive toolkit for health-care administrators to conduct policy and strategy development. Explores tools and techniques for internal and external environmental analysis and development of directional, adaptive, market entry, value-adding and other institutional strategies. Addresses action plans and strategy communication.

**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-Care Business and Leadership (HCBL)

### Courses

**HCBL 345. Project Management in Health Care. 3 Units.**

Evaluate, recommend, negotiate, and manage projects for health-care applications. Project management techniques that integrate resources and facilitate workflow to produce desired outcomes.

**HCBL 346. Legal and Ethical Environment in Health Care. 3 Units.**

Fundamentals of health-care law, confidentiality, and ethics. Topics include liability theories, patient consent, privacy and security, evidence and discovery, and risk management, and compliance.

**HCBL 434. Financial Management for Health Care. 3 Units.**

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. Cost benefits realization preparation.

**HCBL 471. Information Systems Management in Health Care I. 4 Units.**

Detailed analysis of information systems used to support patient care, with emphasis on system development life cycle and support of health information technologies. Focuses on information governance initiatives.

## Health Geoinformatics (HGIS)

### Courses

**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 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 522. Principles of Geographic Information Systems and Science. 2 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 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 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. Prerequisite: HGIS 522 or HGIS 524; or consent of instructor.

**HGIS 547. GIS for Public Health Practice. 2 Units.**

Community health assessment and planning, chronic disease prevention, public health, health disparities analysis, and immunization. Prerequisite: HGIS 522 or HGIS 524.

# Health Informatics (HLIF)

## Courses

**HLIF 510. Health-Care Information Systems. 4 Units.**

Development and diffusion of information systems in health care. Explores how data, information, and technology support quality patient care. Covers EHRs, consumer health informatics, HIE, health informatics ethics, regulatory movements, system theory, evidenced-based medicine, clinical decisions support, patient safety, and strategic planning for information systems. Introduces system architecture, data standards, data analytics, and health information privacy and security.

**HLIF 515. The U.S. Health-Care System. 4 Units.**

Analyzes health-care delivery in the U.S., including health-care organizations, health-care professionals, beliefs, values, access, medical technology, regulatory requirements, reimbursement methods, and cost control. Examines the health-care delivery system from the pre-industrial era to future projections. Studies regulatory, social, and ethical issues of privacy in health care, including HIPAA privacy rules and other regulatory issues with privacy.

**HLIF 520. Data Management: Modeling and Development. 3 Units.**

Explores the concepts of data and the criticality of appropriate data management to successfully model, develop, and implement health-care information systems. Specific topics include database management, data integrity, knowledge management, data mining, data integration, data visualization, data architecture, and data warehousing.

**HLIF 525. Management of Health-Care Data and Information. 2 Units.**

“Investigates and analyzes standardization movements and reimbursement systems in health informatics. Topics addressed include SDOs, HL7, federal standardization, ANSI, UMLS, EDI, SNOMED CT, and revenue cycle management.”

**HLIF 526. Quality and Performance Improvement for Health Care. 2 Units.**

Explores methods, design, and process for quality improvement within health-care organizations. Topics covered include workflow analysis, error prevention, problem detection, problem solving, change management, and systems evaluation.

**HLIF 530. Data Analytics and Decision Support. 3 Units.**

“Studies various data sources available for healthcare data analytics, along with direct application of software tools and techniques to extract, transform, analyze, visualize healthcare data. Review of strategies supporting decision support and knowledge management.”

**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. 3,4 Units.**

Examines organizational culture and the various structures, designs, and models as they relate to leadership. Specific topics include change management, personnel management, governance, ethics, group dynamics, and human factor in health informatics. Includes an exploration of dominant theories and methods impacting management and behavior of individuals, groups and organizations. Four units required of students under the 2020-2021 catalog.

**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 548. Human Computer Interactions. 2 Units.**

Critical analysis of the cognitive science and human factors related to EHRs, PHRs, and consumer informatics. Topics addressed include user needs, application design concepts, patient empowerment, and human-computer interaction.

**HLIF 550. Systems Security in Health Care. 2 Units.**

Regulatory, social, and ethical issues of privacy and security in health care information systems. HIPAA, breach legislation/reporting requirements, security requirements/defenses, business continuity planning, and other regulatory issues.

**HLIF 555. Health-Care Vendor and Project Management. 2,3 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. Three units required of students under the 2020-2021 catalog.

**HLIF 565. Technical Structures in Health Informatics. 3 Units.**

Examines the principles of computer science as related to the development and diffusion of technology supporting health-care information systems. Topics covered include technical infrastructure support of the following: business continuity, daily operations, wireless communication, security, EDI/HIE, networking protocols, system integration, programming languages, and system integration issues. Introduces students to computer programming and software development.

**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, service learning, and other items as developed during the program.

**HLIF 575. Capstone Project and Special Topics in Health Informatics. 2 Units.**

Summative evaluation based on completion of either a systems application business plan or a data-analytics project utilizing competencies gained in the program. Facility-based or theory-based projects. Preparation and presentation of a complete capstone project.

**HLIF 584. Professional Practicum and Seminar for Health Informatics. 2 Units.**

Experiential learning in health informatics. Students must satisfactorily complete 110 practicum hours. Second year standing in MSHI program; successful completion of all curriculum courses for the first 6 quarters of the program.

**HLIF 599. Health Informatics 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 Information Administration (HLIN)

## Courses

**HLIN 220. Health Information Science and the U.S. Health-Care System. 4 Units.**

Overview of U.S. health-care delivery, including the history of health-care institutions, external governance, regulations and standards, reimbursement methods, and the health-care organizations and professionals that provide services. Introduction to information management in health care.

**HLIN 248. Pathopharmacology for Health Information Management. 4 Units.**

Covers disease processes in human body systems, as well as drug interventions used in treatment and prevention of disease.

**HLIN 320. Health Information Science for Alternative Care Settings. 4 Units.**

Provides expanded concepts of information management in health care, including practical applications in information science, accrediting bodies, data management, documentation guidelines and requirements, and data integration standards. Includes practical applications of information governance in alternative health-care delivery systems. Prerequisite: HLIN 220.

**HLIN 334. Clinical Classification Systems. 4 Units.**

Overview of ICD-10-CM and PCS clinical classification systems. Internal and external auditing systems for coding compliance.

**HLIN 335. Advanced Classification Systems and Coding Compliance. 4 Units.**

Application of clinical classification systems and the guidelines for coding compliance. Managing physician query, severity of illness systems, and clinical documentation-improvement processes. Prerequisite: HLIN 334.

**HLIN 340. Seminar and Portfolio for Health Information Management. 3 Units.**

Students develop a portfolio that illustrates their acquisition of the knowledge and skills that prepare them for entry into the profession, as well as reflects on 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. Service learning requirements included.

**HLIN 344. Health-Care Informatics and Database Management. 4 Units.**

Study of computer system architecture and infrastructure: hardware, software, network topologies and components, networking and telecommunications, terminology, and concepts. Technology support for data collection, storage, analysis, and reporting—including database development and management for meeting user information needs. Construction of data manipulation, extraction, and reporting tools.

**HLIN 347. Advanced Information Privacy and Security. 4 Units.**

Compares requirements affecting the privacy, security, control, and disclosure of health information. In-depth analysis of legislation governing privacy and introduction to the components of the HIPAA Security Rule. Prerequisite: HCBL 346; or consent of instructor.

**HLIN 354. Professional Practice Experience. 3 Units.**

Simulated professional practice experiences and assignments in health information management and technology, during the Spring Quarter of the junior year; includes use of software-as-a-service systems. Written and oral reports of experience.

**HLIN 430. Quality Management and Performance Improvement in Health Care. 3 Units.**

Continuous quality improvement methodologies and processes applied to patient safety and satisfaction, internal and external regulatory requirements, risk management, evidence-based medicine, and utilization review to achieve optimum patient care.

**HLIN 435. Seminar and Portfolio for Health Information Management II. 4 Units.**

Students continue to develop a portfolio that illustrates the potential graduate's ability to meet the student learning outcomes set by Loma Linda University. Provides students with a format for demonstrating their acquisition of the knowledge and skills that prepare them for credentialing and entry into the profession. Prerequisite: HLIN 340.

**HLIN 437. Data Analytics and Visualizations for Health Care. 4 Units.**

Introduces data analytics in health care. Concepts of transforming data into useful information to support organizational decisions and outcomes management. Utilizes software tools for the manipulation, analysis, and visualization of data. Applies statistical methods with data extraction methodologies, data exploration, and mining.

**HLIN 438. Revenue Cycle Management for Health Care. 4 Units.**

In-depth analysis of the U.S. health-care reimbursement system. Addresses principles of revenue cycle management, payment methodologies, and associated data requirements.

**HLIN 439. Management in Health Care. 5 Units.**

Principles of management and human resources, including: human resource acquisition, training, development, and evaluation; productivity; benchmarking; problem solving, and decision making.

**HLIN 440. Leadership and Strategy Management in Health Care. 4 Units.**

Leadership theory and principles, including: communication skills; negotiating and influencing; team building and management; workflow optimization; strategy and vision planning; diversity and cultural influences. Reflection and evaluation assessment of personal awareness, strengths, and weaknesses.

**HLIN 454. Professional Practice Experience II. 4 Units.**

Provides supervised professional practice experience (120 hours) in health information management (virtual and in-person), with a minimum of 40 hours at an approved health-care or health-related facility. Combines written and oral reports of experience with classroom discussion. International experience may be available. Prerequisite: HLIN 354; or consent of instructor.

**HLIN 472. Information Systems Management in Health Care II. 4 Units.**

Advanced study of information system development, diffusion, and strategic application in health care and alignment with terminologies, vocabularies, and nomenclatures. System usability, regulatory compliance, advanced security, interoperability, and valuation examined. Health information organizations and operations, consumer and public health informatics, internal and external data integrity and validity. Prerequisite: HCBL 471.

**HLIN 483. Alternative Delivery Systems in Health Care. 4 Units.**

Focuses on health information management in delivery systems such as: long-term care, hospital-based and free-standing ambulatory care, hospice, home health, dialysis centers, veterinary medicine, consulting, correctional facilities, mental health, substance abuse, dental, rehabilitation, managed care, and cancer registry. Health record content, format, and regulatory requirements; the role of the HIM professional; data collection; risk and utilization management; and quality improvement areas.

**HLIN 484. Current Topics in Health Information Administration. 4 Units.**

Focuses on career planning, management skills, and professional development. Health information management professionals working in various health-care settings share their knowledge and experience with students. Includes preparation exercises for the national credentialing examination.

**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, and group dynamics.

**HLIN 494. Health Information Management II. 4 Units.**

Advanced study of topics relevant to management and leadership in the HIM profession, including leadership theory and strategies; ergonomics/workplace design; individual and organizational productivity; innovation and change management; labor legislation; emotional intelligence; cultural and workforce diversity; ethical and social responsibility; disaster preparedness; entrepreneurship; tactical and strategic planning; contemporary leadership issues.

**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 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 551. Master's Thesis I. 3 Units.**

Selection of research topic, evaluation of current literature on the subject, and construction of data collection instrument. Students can select this option in lieu of the HPED Capstone Project 1. Prerequisites: completion of the core courses in the MS degree program in Health Professions Education, and in consultation with the program director.

**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. Prerequisites: Successful completion of HPED 551 Master's Thesis I and consent of program director.

**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. Prerequisite: HPED 561 Leadership in the Health Professions I.

**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 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. Prerequisite: HPED 581.

**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 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 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 515. Mind-Body Interactions and Health Outcomes. 3 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. Prerequisite: Anatomy and physiology, biochemistry.

**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. Prerequisite: Anatomy and physiology, general chemistry, organic chemistry, biochemistry.

**HPRO 524. Child and Adolescent Health. 3 Units.**

Studies developmental and health problems unique to the child and adolescent periods of life. Focuses on special needs and public health programs designed to reach children and adolescents. Gives attention to special problems, such as social adaptation, juvenile delinquency, drug abuse, suicide, adolescent pregnancy.

**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. Prerequisite: Anatomy and physiology; or consent of instructor.

**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 529. Preventive and Therapeutic Interventions in Chronic Disease. 3 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 behavioral health and health education sciences. Application of research principles and techniques to quantitative research methods and surveys in health education. Includes: reading and use of published research; development of research questions; hypotheses testing; selection of research methods; data collection; causal inference; 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. Prerequisite: HPRO 531.

**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. Prerequisite: STAT 509.

**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. Prerequisite: HPRO 534A.

**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.**

First in a three-course sequence operationalizing qualitative research methods. Includes: conducting observational assessments, windshield surveys, and personal interviews; participating in focus groups; and, compiling secondary data for a community-needs assessment. Preparation for implementation and evaluation of health education programs.

**HPRO 537B. Community Programs Laboratory—B. 1 Unit.**

Student-designed marketing and evaluation plans for community-based health education program. Student implements and evaluates programs developed during HPRO 537A. Prerequisite: 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, models, and diagnostic techniques to design, deliver, and evaluate health promotion and education programs in community, occupational, educational, and health care settings. Presents steps in the health educational planning process. Includes: assessments; goals and objectives; intervention strategies; behavioral and educational theories; instructional delivery and designs; evaluation; and, reporting.



**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 541. Wellness Coaching I. 3 Units.**

Covers the fundamentals of the coaching structure and process, from coach preparation to program termination—including the legal and ethical implications. Explores specific components of the coaching process, with special attention given to coach/client relationship, empathetic communication skills, importance of client reflections, and goal setting. Introduces the Wellness Mapping 360 tool to lay the foundation for the coaching plan.

**HPRO 542. Wellness Coaching II. 3 Units.**

Reviews the wellness coaching process. Introduces students to effective methodology of motivational interviewing. Explores the techniques and theories associated with this coaching 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. Includes overview of positive psychology methods and theory. Prerequisite: HPRO 541.

**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 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 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. Includes, medical and social risk factors, and efficacy of early-intervention and survival strategies globally and locally. Examines legal, regulatory, and ethical issues.

**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 565. Tobacco Use: Prevention and Interventions. 3 Units.**

Second of three courses providing an overview of the underlying pathophysiology of the health impact of tobacco use on individuals, families, and society. Includes: smoking behavior; pharmacodynamics of nicotine delivery; mechanisms of nicotine addiction; and, individual, group, systems, and public intervention strategies. Incorporates principles of epidemiology, anatomy, physiology, immunology, endocrinology, and biochemistry.

**HPRO 570. Wellness Coaching Lab. 1 Unit.**

Provides a review of the wellness coaching process and introduces students to direct client interaction. Requires fifty sessions of wellness coaching practice in the field, offering students the creative opportunity to apply and integrate skills and knowledge gained in the preceding terms of the program. Requires students to use the learned skills and knowledge to schedule, coach, and educate individuals in client-centered individual sessions.

**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 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. Prerequisite: HPRO 573; and basic physiology.

**HPRO 580. Preventive Care Management. 3 Units.**

Prepares students for careers in preventive care. Covers three areas of preventive care: teaching, worksite wellness, and clinical practice. Enhances skills and tools needed in preventive care practice. Limited to doctoral candidates in preventive care.

**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 factors contributing to health behavior decisions. Theory and research relevant to individual, family, organization, and community behavior. Emphasizes critical-thinking, professional writing, and oral presentation. Application of theory to development of a basic research proposal. Limited to doctoral degree students. Consent of instructors for nondoctoral degree students. Prerequisite: HPRO 509; or equivalent.

**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 590. Worksite Wellness. 3 Units.**

Prepares students to enter the field of corporation wellness as leaders not only in developing, implementing, and evaluating wellness work-site programs; but also in decreasing the burden on corporation health, morale, budget, and performance caused by lifestyle-related diseases.

**HPRO 595. Community Project. 1-4 Units.**

Provides the student with an individual, hands-on experience to apply the principles learned in the didactic courses of the health education program. Students plan, implement, and evaluate a health education intervention based on the findings of the needs assessment. Programs consist of several sessions, individually planned and taught by the student. Minimum of thirty hours required for each unit of credit. A maximum of 4 units applicable. Prerequisite: Consent of instructor.

**HPRO 604. Research Seminar. 2 Units.**

Student develops and critiques doctoral project proposals, with peer review of research protocols. Limited to doctoral degree students. Prerequisite: PHCJ 600; consent of program director.

**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. Prerequisite: Minimum of 90 units of coursework toward Dr.P.H. (preventive care) degree.

**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 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 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. Prerequisite: Consent of instructor and of program advisor.

**HPRO 697. Dissertation Proposal. 1-10 Units.**

Doctoral student develops the written dissertation proposal and collaborates with doctoral dissertation committee chair on mutually agreed-upon objectives, which will serve as the basis for evaluation. Culminates in a written and oral dissertation proposal defense and advancement to candidacy. Prerequisite: Successful completion of comprehensive exams.

**HPRO 698. Dissertation. 1-14 Units.**

Student prepares a manuscript presenting results of the doctoral research study. Limited to doctoral degree candidates. Prerequisite: Advancement to Candidacy.

**HPRO 704A. Internship. 2 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. 4 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. 6 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. 8 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 (40 hours/week) field internship.

## 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 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.) degrees.

**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 their 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. Prerequisite: IDMT 541.

**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. Prerequisite: IDMT 521, IDMT 541, IDMT 542.

**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. Prerequisite: IDMT 521, IDMT 522, IDMT 541, IDMT 542.

**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. Prerequisite: IDMT 521, IDMT 522, IDMT 541, IDMT 542.

**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. Prerequisite: IDMT 521, IDMT 522, IDMT 541, IDMT 542, IDMT 581 and one IDMT elective.

## 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. 6 Units.**

The first quarter of a two-quarter sequence designed to give first-year graduate students an exposure to major core concepts of molecular and cellular biology.

**IBGS 512. Cellular Mechanisms and Integrated Systems II. 6 Units.**

The second quarter of a two-quarter sequence designed to give first-year graduate students an exposure to major core concepts of molecular and cellular biology.

**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. Prerequisite: IBGS 511, IBGS 512.

**IBGS 522. Cellular Mechanisms and Integrated Systems II Journal Club. 2 Units.**

A component of IBGS, taught in a journal-club format. Presents and discusses recent literature related to IBGS 512.

**IBGS 523. Cellular Mechanisms and Integrated Systems III Journal Club. 2 Units.**

Employs a journal-club format that explores contemporary topics of program-specific interest to class participants.

**IBGS 525. Translational Research Training. 2 Units.**

This is an interactive course that brings graduate students together with medical students, clinical residents and clinical fellows in a small group setting, where they learn to develop a translational research plan for addressing clinical problems and engage various components of the community to facilitate and foster translational research leading to improved patient care and healthier communities. This course has been approved as a service learning course.

**IBGS 537A. Special Topics in Biomedical Sciences. 1-4 Units.**

Current topics in biomedical sciences. Specific content varies from quarter to quarter. May be repeated for additional credit.

**IBGS 537B. Special Topics in Biomedical Sciences. 1-4 Units.**

Current topics in biomedical sciences. Specific content varies from quarter to quarter. May be repeated for additional credit.

**IBGS 537C. Special Topics in Biomedical Sciences. 1-4 Units.**

Current topics in biomedical sciences. Specific content varies from quarter to quarter. May be repeated for additional credit.

**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.

**IBGS 698. Thesis. 1-5 Units.**

Addresses development of a thesis document, presentation of results, and project defense. May coincide with completion of the degree but does not equate with degree completion.

**IBGS 699. Dissertation. 1-5 Units.**

Student produces a dissertation document describing the research project and its results, and defends the project from challenges offered by the members of their faculty dissertation committee. May coincide with completion of the degree but does not equate with degree completion, which requires submission of the final dissertation to the Faculty of Graduate Studies. Prerequisite: Successful completion of the written comprehensive examination.



## 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 826. General Clinics. 6 Units.**

Provides direct patient care experience in urgent care, pediatric, service learning, and screening settings.

#### **IDPC 827. General Clinics. 13 Units.**

Provides direct patient care experience in urgent care, pediatrics, service learning, and screening settings.

#### **IDPC 835. General Clinics. 19 Units.**

Includes direct patient care through rotations in urgent care, pediatric, service learning, and screening blocks.

#### **IDPC 836. General Clinics. 16 Units.**

Provides direct patient care experience in urgent care, pediatric, service learning, and screening settings.

#### **IDPC 845. General Clinics - Direct Patient Care. 18 Units.**

Includes direct patient care.

#### **IDPC 846. General Clinics. 16 Units.**

Provides direct patient care experience in urgent care, pediatric, service learning, and screening settings.

## International Dentist Program/General (IDPG)

### Courses

#### **IDPG 718. Communication Basics for the International Student. 1 Unit.**

Student develops interpersonal competencies in the various professional communication roles expected of a dentist. Topics include team building, cross-cultural communication, dental fears and phobias, mental illness, and behavior change.

#### **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.

## International Dentist Program/Oral Pathology (IDPO)

### Courses

#### **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 720. Oral and Maxillofacial Radiology for the IDP Program. 2 Units.**

Emphasizes the integral role played by the radiographic examination in the diagnostic process in dentistry, in conjunction with the clinical examination. Reinforces the basic principles of oral and maxillofacial radiology.

#### **IDPO 725. Patient Assessment and Data Management II. 2 Units.**

Builds on IDPO 723 by continuing 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. Fundamentals of 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 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. Periodontal Therapy. 2 Units.**

Presents variations in periodontal diseases related to various host conditions. Overview of roles, limitations, and effects of surgical periodontal procedures. Includes: surgery outcomes compared with short- and long-range effects of conservative therapies; the role of dental health-care providers in periodontal therapy; and, 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.**

Extends 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 761. Removable Prosthodontics I. 2 Units.**

Reviews the basic clinical and laboratory removable prosthodontic procedures involved in the fabrication of removable prosthesis. Includes a laboratory component.

**IDPR 762. Removable Prosthodontics II. 2 Units.**

Reviews the laboratory phases of diagnosing, planning treatment for CD, 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, 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 multiple unit fixed partial denture, tissue management, impression techniques, and temporary restorations—including single units and fixed partial dentures. 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.

## Marriage and Family (MFAM)

### Courses

**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 behavioral health test instruments. Cross-listing: COUN 501.

**MFAM 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 in a workshop format. Cross-listing: COUN 502.

**MFAM 515. Crisis Intervention and Client Advocacy. 3 Units.**

Presents basic counseling theory, techniques, crisis intervention, and client-centered advocacy in recovery-oriented practice environments. Includes confidentiality, interprofessional cooperation, working with consumers, professional socialization, and collaboration. Discusses suicide, substance abuse, domestic violence, incest, spousal abuse, rape, treating the severely mentally ill, and disaster and trauma response. 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 524. Psychopharmacology and Medical Issues. 3 Units.**

Introduces common physical and medical issues related 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 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.**

Introduction to mental health recovery-oriented care. Exploration of personal biases toward various cultures/ethnicities, and how poverty and social stress impact consumers. Reviews ethics developed by the Board of Behavioral Science, the American Counseling Association, and the American Association of Marriage and Family Therapists. Examines spirituality and client-centered advocacy as important processes. Explores the interface between MFTs, counselors, and other professionals.

**MFAM 536. Case Presentation and Documentation. 3 Units.**

Through observation of live cases, trains student in 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, documentation, and illness prevention.

**MFAM 537. Case Presentation. 3 Units.**

The third of six quarters of training work that the student will be expected to complete during the course of their on-campus practicum experience. Focuses on the development of a theoretical orientation as a way to develop, critique, and refine the personal and theoretical perspectives of the therapist. A clinically oriented seminar in which students are asked to prepare brief and focused presentations of individual, marital, or family cases.

**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 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. Cross-listing: COUN 547.

**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 current edition of the Diagnostic and Statistical Manual as a practical basis for diagnostics. Cross-listing: COUN 556.

**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 567. Treating the Severely and Persistently Mentally Ill and the Recovery Process. 3 Units.**

Addresses identification, treatment, and referral procedures for severely mentally ill consumers in diverse populations. Focuses on the recovery process and on evidence-based or agreed-upon approaches during treatment. Includes 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. Cross-listing: COUN 568.

**MFAM 584. Advanced Child and Adolescent Development. 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). Cross-listing: COUN 584.

**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. Examination of 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 child welfare, separation, and divorce law, and financial aspects of family maintenance. Includes case management, referrals, professional and client interactions, ethical and interprofessional relations, legal responsibilities, and confidentiality. Explores interactions among the practitioner's sense of self and human values, professional behavior, scope of practice, and ethics. Examination of impacts of culture, SES, poverty, social stress, and biology on the recovery process.

**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 behavioral health counseling. Cross-listing: COUN 624.

**MFAM 635. Case Presentation and Legal Issues. 3 Units.**

A clinically oriented course in which students prepare brief and focused oral and/or video presentations of individual, marital, or family cases with which they are currently working at their clinical placements that demonstrate an understanding of systems theory; as well as of legal, ethical, cultural, SES, spiritual, and developmental issues. Students discuss how cases support consumer advocacy.

**MFAM 636. Case Presentation and Client-Centered Advocacy. 3 Units.**

Examines the recovery process in relation to case write-ups. Ongoing individual, marital, and family cases formally presented by trainees discussing how consumer advocacy is supported; 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.

**MFAM 637. Case Presentation and Global Practices. 3 Units.**

Students receive case supervision and prepare for a final oral comprehensive examination that requires four videotaped segments of the case over a minimum of six sessions or six hours, depending upon the clinic site; a write-up of the case; an epistemology paper; and a vignette.

**MFAM 638. Substance Use Disorders, Relationships, and Recovery. 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. Cross-listing: COUN 638.

**MFAM 644. Child Abuse and Family Violence. 3 Units.**

Presents characteristics of physical and emotional abuse, neglect, sexual molestation, and family violence including offender and nonoffender traits. Focus on treatment including individual, group, and family therapy. Ethical and legal issues, community resources, and multidisciplinary approaches to child abuse. Examines cultural, SES, poverty and/or social stress impacts on mental health and recovery. Cross-listing: COUN 644.

**MFAM 645. Advanced Treatment Strategies – Substance Use Disorders. 3 Units.**

Explores contemporary treatment strategies in depth for substance use disorders with adults, adolescents, families, groups, and those with multiple diagnoses.

**MFAM 654. Practicum in Drug and Alcohol Counseling. 1 Unit.**

Practicum course in which students discuss with individuals and families and apply current theories and strategies for treating substance use disorders. Explores issues of multicultural competence, human diversity, and access to care. Prerequisite: Acceptance into the Drug and Alcohol Counseling certificate.

**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 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. Cross-listing: COUN 674.

**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 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 735. Case Presentation Extension. 0 Units.**

Provides a mechanism for students to earn clinical hours beyond those achieved in the "Case Presentation" course to fulfill California Marriage and Family Therapist licensure requirements.

**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.

## Maternal Newborn Child Health (MNCH)

### Courses

#### **MNCH 520. Maternal/Child Health: Policy and Programs. 3 Units.**

Examines national and global public health programs, problems, and policies—targeting infants, children, and childbearing women. Explores issues such as poverty, access to and utilization of health care, adolescence, disabilities, family planning, HIV, and AIDS within socioeconomic, political, and ethical frameworks. Emphasizes interdisciplinary delivery of services within a public health setting to improve the well-being of mothers, infants, and children.

#### **MNCH 567. Reproductive Health. 3 Units.**

Using the life-cycle approach, focuses on reproductive health as a human right for both men and women. Examines public health policy; programs; and, to some degree, clinical interventions at various points of the reproductive life cycle. Explores issues that affect health and fertility, including family-planning technologies; reproductive tract infections, including HIV; and the impact of violence on reproductive health. Draws on reproductive health programs.

#### **MNCH 614. Seminar in Maternal and Child Health Practice. 3 Units.**

Examines a variety of maternal, newborn, and child health topic areas addressing a wide range of health behaviors, environmental factors/conditions, health systems, and determinants of health that affect the health, wellness, and overall quality of life for these populations and their families. Analysis of issues—through input from experts, discussion, and student participation—of trends and current practices affecting maternal, newborn, and child health.

## Medical Education Services (MNES)

### Courses

#### **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 (MEDN)

### Courses

#### **MEDN 599. Medicine Directed Study. 1.5-18 Units.**

#### **MEDN 701. Medicine Clerkship. 1.5-12 Units.**

Provides knowledge in internal medicine and develops skills and attitudes necessary to care for the adult patient. One outpatient and two inpatient rotations allow students to experience different patient conditions and populations while exposing them to both acute and chronic medical illnesses.

#### **MEDN 821. Medicine Subinternship. 1.5-6 Units.**

Builds upon and expands the core knowledge established during the third-year clerkship. Student assumes more responsibility in patient care and, functioning essentially as the intern on the case, works closely with the senior resident and attending physician to provide optimal care that is evidence-based, cost efficient, and effective.

#### **MEDN 822. Medicine Intensive Care. 1.5-6 Units.**

A four-week service on a medical intensive care unit where students are expected to learn the foundations of care in the ICU. Students participate actively in the care of patients admitted to the ICU—integrating and applying their knowledge as they follow patients on a daily basis. Prerequisite: MEDN 701.

#### **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.

## Medicine/Application and Integration (MAPN)

### Courses

#### **MAIN 610. Application & Integration Block. 9.5 Units.**

Knowledge and skills from prior blocks will be collectively integrated to discriminate between variation, pathology, dysfunction, and disease. Basic and clinical science integration tools developed throughout the curriculum will be applied to better understand homeostasis states, and the transformation in function and structure that occurs in pathologic states. Forms the basis for practicing clinical reasoning, selecting diagnostic tests, and developing basic management plans.

## Medicine/Cardiovascular (MCVS)

### Courses

#### **MCVS 510. Cardiovascular Block. 9 Units.**

Develops multidisciplinary understanding of cardiovascular system, including normal and abnormal cardiac and vascular structure and function. Emphasizes self-directed learning and application of clinical reasoning to solve problems related to cardiovascular system.

## Medicine/Christian Physician Formation (MCPF)

### Courses

#### **MCPF 510. Christian Physician Formation. 4 Units.**

First in a three-year course sequence. Applies principles presented in RELR 701 to assist students in developing identities as physicians continuing the healing ministry of Jesus through co-led presentations by School of Religion and Medicine faculty and discussion in LIFE Communities. Professional identity building themes include spiritual formation, community engagement, resilience, professionalism, healthy habits and life-long learning. Prerequisite or concurrent: RELR 701.

#### **MCPF 610. Christian Physician Formation. 2 Units.**

Second in a three-year course sequence. Continues MCPF 510 with a focus on personal wellness. Assists students in developing identities as physicians continuing the healing ministry of Jesus through co-led presentations by School of Religion and Medicine faculty and discussion in LIFE Communities. Professional identity building themes include spiritual formation, community engagement, resilience, professionalism, healthy habits and life-long learning.



**MCPF 710. Christian Physician Formation. 3 Units.**

Third in a three-year course sequence. Continues MCPF 510 and MCPF 610 with a focus on integration. Assists students in developing identities as physicians continuing the healing ministry of Jesus through co-led presentations by School of Religion and Medicine faculty and discussion in LIFE Communities. Professional identity building themes include spiritual formation, community engagement, resilience, professionalism, healthy habits and life-long learning.

## 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.**

Introduction to management of a medical practice. Includes: business operations; financial, human resources, information, quality, and risk management; organizational governance; and, patient care systems.

**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 519. Foundations of Clinical Medicine. 17 Units.**

An integrative course consisting of interactive, patient-centered contextual learning; along with an organ system-based curriculum throughout the first year of medical school—emphasizing development of communication and physical examination skills, professionalism, mind-body interaction, pain management, end-of-life care, child and elder abuse, domestic violence, and sexuality. Introduces human development across the life cycle.

**MDCJ 520. Basis of Medical Genetics. 2 Units.**

First of two courses providing foundations in genetics and molecular biology, including mechanisms for genetic information and its flow in eukaryotic cells. Introduction to causes of genetic disorders and familial disease, and genetic components of common disorders. Preparation for transition to sophomore-year clinical applications and clinical case presentations.

**MDCJ 521. Applications of Clinical Genetics. 2 Units.**

Second of two courses expanding upon the genetic/molecular basis of human diseases. Preparation for clinical practice and offers tools for lifelong learning.

**MDCJ 527. Cell Structure and Function. 8.5 Units.**

Describes basic and organ system histology relative to cell biology, immunology, and general pathology, and applies this material to general pathology. Develops skills in use of the microscope, and in diagnostic and clinical problem solving.

**MDCJ 528. Evidence-Based Medicine and Information Sciences. 3.5 Units.**

Promotes acquisition of the five fundamental skills of evidence-based medicine. Includes: how to ask clinically relevant questions; how to acquire answers to questions commonly asked by physicians; how to critically appraise the medical literature; how to apply results of the medical literature to patients; and how to self-assess progress in the acquisition of the foregoing skills. Begins the process of self-directed, lifelong learning.

**MDCJ 530. Pathophysiology and Applied Physical Diagnosis. 11 Units.**

Introduction to pathophysiologic principles underlying mechanisms of disease. Applies pathophysiologic principles to a variety of new situations that require problem solving and synthesis in a clinical context. Promotes development of clinical skills and professionalism.

**MDCJ 538. Medical Neuroscience. 3.5 Units.**

Provides a broad-based foundation in neuroscience. Addresses basic normal neuroanatomy and neurophysiology of the human central and peripheral nervous systems. Employs neurologic examination to evaluate central and peripheral nervous systems. Presents how to accurately localize lesions of the central and peripheral nervous systems and use technologies that can diagnose neurologic conditions.

**MDCJ 539. Diseases of Neuroscience. 4 Units.**

Applies tools derived from the basic building blocks of neuroanatomy and neurophysiology to the clinical neurologic examination of patients with a broad array of neurologic diseases or conditions.

**MDCJ 560. Basis of Medical Genetics. 2 Units.**

Lays basic foundations in genetics and molecular biology, including mechanisms for genetic information and its flow in eukaryotic cells. Introduction to causes of genetic disorders and familial disease, and genetic components of common disorders.

**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 Population Health. 1.5-6 Units.**

Introduces clinical preventive medicine, quality improvement and patient safety, motivational interviewing, and care of the underserved in clinic and public health settings. Orientation to allied health professions, and complementary and alternative medicine.

**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.

## Medicine/Endocrine and Reproductive (MENR)

### Courses

**MENR 510. Endocrine & Reproductive Block. 9 Units.**

Develops understanding of endocrine and reproductive structure, function and dysfunction. Applies concepts in endocrine and reproductive cases to develop differential diagnoses, determine appropriate diagnostic testing, and formulate basic management plans.



## Medicine/Foundation (MFDN)

### Courses

#### **MFDN 511. Foundations I Block. 13.5 Units.**

Introduces knowledge, skills, values, and attitudes necessary to successfully become self-directed, life-long learners and Christian physicians. Presents foundational concepts in anatomy and embryology, biochemistry, molecular biology and genetics, cell structure and general pathology, evidence-based medicine, lifestyle and preventive medicine, microbiology, pharmacology, and physiology.

## Medicine/Gastrointestinal and Liver (MGLV)

### Courses

#### **MGIL 512. Foundations II – Gastrointestinal and Liver Block. 12.5 Units.**

Continues introducing foundational concepts in multiple subjects, followed by knowledge of normal structure and function of the gastrointestinal system. Mastery of mechanisms, etiology, and predisposing factors for pathologic conditions will be integrated into developing a clinical reasoning framework for assessing signs and symptoms, constructing a differential diagnosis, and developing management plans.

## Medicine/Hematology and Immunology (MHMI)

### Courses

#### **MHMI 514. Hematology and Immunology Block. 8 Units.**

Focuses on hematologic and immunologic processes. Compares normal structure and function with dysfunction and disease. Develops knowledge and skills necessary for evaluation of laboratory findings in normal, non-neoplastic and neoplastic hematologic and lymphoid conditions.

## Medicine/Musculoskeletal and Skin (MMSK)

### Courses

#### **MMSK 610. Musculoskeletal and Skin Block. 5 Units.**

Focuses on knowledge and skills specific to orthopedic, dermatologic and rheumatologic conditions. Integrates basic science disciplines in comparing normal structure, function, and dysfunction. Continues development of clinical reasoning and clinical application of disease mechanisms.

## Medicine/Neuroscience and Human Behavior (MNHB)

### Courses

#### **MNHB 610. Neuroscience & Human Behavior Block. 16 Units.**

Using foundational principles and focusing on knowledge and skills specific to neurologic and psychiatric conditions, the normal function of the central and peripheral nervous system is contrasted with dysfunction and disease. Neuroanatomy, neuropathology, neuroradiology and pharmacology are integrated with clinical presentation and basic management. Emphasis is placed on clinical reasoning skills as knowledge of disease mechanisms is applied to clinical problems.

## Medicine/Pulmonary (MPLM)

### Courses

#### **MPLM 510. Pulmonary Block. 6 Units.**

Integrates understanding of lung structure, function, and dysfunction. Applies concepts in treating pulmonary pathologies. Emphasizes self-directed learning and clinical reasoning skills.

## Medicine/Renal and Urinary (MRNU)

### Courses

#### **MREN 610. Renal and Urinary Block. 7 Units.**

Introduces relevant anatomy and histopathology, as well as physiology, biochemistry, genetics, imaging, microbiology, pharmacology, and pathology of the genitourinary tract. Integrates with physiologic concepts from previous blocks. Develops clinical reasoning and problem solving by emphasizing abnormalities related to blood pressure regulation, fluid and electrolyte balance, acid-base balance, and common diseases and conditions.

## Medicine/Selectives (MSEL)

### Courses

#### **MSEL 510. First-Year Selective. 2 Units.**

A two-week selective in an area of personal interest involving; reading, study, reflection and practice in a variety of settings. Students choose a topic from multiple facets of medical practice including, but not limited to, the art of health, transformative health care, the business of medicine, leadership, simulation, and ultrasound.

#### **MSEL 610. Second-Year Selective. 2 Units.**

A two-week selective in an area of personal interest involving reading, study, reflection and practice in a variety of settings. Students choose a topic from multiple facets of medical practice including, but not limited to, the art of health, transformative health care, the business of medicine, leadership, simulation, and ultrasound.

#### **MSEL 824. Fourth-Year Selective in Medicine. 3 Units.**

Provides exposure to the practice of internal medicine in a clinical setting. Prerequisite: Must pass all third-year courses.

#### **MSEL 825. Fourth-Year Selective in Surgery. 3 Units.**

Provides exposure to the practice of internal medicine in a clinical setting. Prerequisite: Must pass all third-year courses.

## 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. 6 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 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 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 547. Medical Microbiology. 4.5 Units.**

Covers basic biology of medically important microbial pathogens and mechanisms of their disease pathologies in the context of organ systems. Addresses pathologic mechanisms, signs and symptoms of major infectious diseases, developing differential diagnoses, and treatment and prevention of these diseases.

**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 624. Special Problems in Microbiology. 2-4 Units.**

Designed primarily for students enrolled in a coursework M.S. degree program who elect to work on a research problem.

**MICR 625. Independent Study in Microbiology Literature. 1-4 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 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 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 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.

## Neurology (NEUR)

### Courses

**NEUR 599. Directed Elective Study. 1.5-12 Units.**

**NEUR 701. Neurology Clerkship. 1.5-6 Units.**

Preparation to competently evaluate, document, localize, diagnose, and discuss treatment of adult patients exhibiting neurological symptoms. Addresses neurologic emergencies and chronic outpatient neurologic conditions.

**NEUR 891. Neurology Elective. 1.5-27 Units.**

Offers fourth-year medical students the opportunity to explore various areas of neurology, including research.

## Neurology and Psychiatry (NEPS)

### Courses

**NEPS 710. Neurology/Psychiatry Clerkship. 1.5-12 Units.**

Presents concepts and practice of neurologic and psychiatric conditions including in-patient and out-patient assessment, mental status and neurologic examination, indications for diagnostic studies of the central and peripheral nervous system, pharmacologic treatment, recognition of psychosocial problems, identification of suicide and homicide risk factors, and psychodynamic treatment options.

## Neurosciences, Systems Biology, and BioEngineering (NSBB)

### Courses

**NSBB 500. Foundations in Neuroscience. 4 Units.**

Overview of neuroscience with attention to current research and problems in the field. Includes basic neuroanatomy and neurophysiology of the human central and peripheral nervous systems. Prerequisite: Undergraduate-level biology, inorganic chemistry, organic chemistry, and general physics; previous experience with computer programming preferred but not required; a course in statistics preferred but not required.

**NSBB 504. Neuroscience Methods. 4 Units.**

Provides an in-depth overview of historical and current methods used to perform experiments focused on learning about neural circuits in the body, spinal cord, and brain. Emphasizes understanding of neuron labeling using dyes that can be seen in bright-field and fluorescent microscopy, recording methods for quantifying neuron activity, psychophysical experiments to assess neural function, behavioral assays, optogenetics, and the use of molecular markers. Prerequisite: NSBB 500.

**NSBB 506. Fundamentals of Electrophysiology. 4 Units.**

Presents fundamental theory and applications of electrophysiological methods in the context of neuroscience and biomedical research. Focuses on electrophysiological concepts and electrophysiological experiments in excitable tissues. Prerequisite: Undergraduate-level biology, inorganic chemistry, and general physics. Calculus preferred, but not required.

**NSBB 507. History of Neuroscience. 3 Units.**

Provides graduate and medical students with a detailed overview of the history of neuroscience from the classical Greek period through contemporary neuroscience research and clinical neurology/neurosurgery. Emphasizes experiments designed to provide current models of how the brain works. Emphasizes historical changes in treatment and clinical practice that inform current understanding of the nervous system. Prerequisite: Undergraduate-level biology and general chemistry; NSBB 500 recommended.

**NSBB 510. Cortical Circuits. 3 Units.**

Focuses on the development, function, and dysfunction of the cortex of the brain. Emphasizes understanding of neuronal proliferation, differentiation into circuits, and the resulting interaction of cortical circuits that generate motion and integrate touch, vision, and vestibular inputs to generate conscious perception, the network basis of learning and memory, and cortical oscillations (including cortical rhythmic networks). Prerequisite: NSBB 500.

**NSBB 515. Contemporary Neuroimaging. 3 Units.**

Provides an in-depth overview of historical and current imaging methods used to perform experiments focused on learning about the structure and function of neurons and the peripheral and central circuits they develop. Emphasizes understanding of neuron labeling using microscopy imaging techniques. Prerequisite: NSBB 500.

**NSBB 520. Neuroinflammation: Neuron-Glia Interactions. 3 Units.**

Provides graduate students with a current understanding of neuronal-glia interactions in the context of neuroinflammation and its relevance to neurological disorders. Develops competency in the fundamental concepts of cross-communication between disciplinary fields, and how they are applied to diseases of significant social, medical, and economic burden. Prerequisite: NSBB 500; Immunology (recommended).

**NSBB 526. Journal Club. 1 Unit.**

Provides students with the opportunity to survey current research literature in a specialized topic.

**NSBB 551. Systems Biology – A Practical Approach. 2 Units.**

Provides a general overview of systems biology approaches that enhance understanding of molecular mechanisms underlying the different phenotypes of living cells. Emphasize the most recent developments and future directions in this new and rapidly developing field, particularly focusing on genomics, epigenomics, and transcriptomics.

**NSBB 552. Data Analytics. 3 Units.**

Presents contemporary data analysis and visualization methods necessary for biomedical research and presentation. Uses Python and applies scientific libraries that extend the basic Python language to incorporate image, time series, spectral, and machine-learning analyses. Addresses data cleaning, visualization, management, and security. Prerequisite: NSBB 551; previous experience with computer programming and data analysis software (recommended).

**NSBB 553. Advanced Bioinformatics – Sequence and Genome Analysis. 4 Units.**

Explores ways in which computational techniques can be applied to help solve problems related to biology and biochemistry. Focuses on sequence and genome analysis with genomics and bioinformatics tools. Prerequisite: NSBB 551.

**NSBB 555. Genomics and Bioinformatics: Tools. 4 Units.**

Teaches students to create extremely useful programs using PERL to solve biological problems. Basics of Linux and scripting with PERL. Prerequisite: NSBB 551.

**NSBB 557. Integration of Computational and Experimental Biology. 4 Units.**

A multidisciplinary introduction to computational methods used to analyze experimental biological data. Introduces mathematical concepts needed to understand protein structure and dynamics, protein-protein interactions (structures and networks), gene regulatory networks, signal transduction networks, metabolic networks, and kinetic modeling of cellular processes. Also covers techniques used to derive experimental data. Prerequisite: MICR 515; NSBB 552; and programming experience.

**NSBB 571. Engineering Analysis of Physiological Systems. 3 Units.**

Provides basic engineering analytical tools for quantifying physiological systems behavior. Addresses several key systems, using engineering methodology to evaluate the system of interest for solving particular problems. Prerequisite: A first course in ordinary differential equations is essential; working knowledge of computer manipulation and programming (recommended).

**NSBB 572. Cellular and Molecular Engineering. 3 Units.**

Emphasizes engineering and biochemical/biophysical concepts intrinsic to specific topics at the cellular and molecular level. Includes receptor-ligand dynamics in cell signaling and function; DNA replication and RNA processing; cellular energetics and control of gene expression; membrane structure; transport and traffic; biological process; and mechanics of cell division and protein and cellular engineering approaches. Prerequisite: NSBB 570.

**NSBB 575. Orthopaedic Regenerative Engineering and Mechanobiology. 4 Units.**

Introduces advanced biomechanics and mechanobiology of skeletal tissues—including bone and cartilage—through an understanding of structure-function relationship in biological tissues. Focuses on bone and cartilage regenerative engineering approaches based on scaffolds, stem cells, and mechanotransduction. Prerequisite: PTGR 591, PTGR 592 (recommended); NSBB 579 (recommended); general biology.

**NSBB 579. Bioengineering Fabrication. 3 Units.**

Provides a foundational skill set for using 3D software; for computer numerical control (CNC) machining, 2D laser cutting, additive 3D printing, and data collection with Raspberry Pi and Arduino devices; and for understanding intellectual property. Students use campus resources and local maker-spaces to complete a project focused on a bioengineering application.

**NSBB 580. Medical Imaging Physics. 3 Units.**

Includes medical imaging science and the radiological modalities, basic radiation physics and the interaction of radiation with matter, the physics of X-ray production, computed tomography, magnetic resonance imaging, ultrasound and nuclear medicine, quality control, and safety; as well as clinical applications in each modality. Prerequisite: Undergraduate level physics course and biology course.

**NSBB 584. Medical Image Analysis. 2 Units.**

Introduces theory, processing, analysis, and high-level applications of commonly used digital image techniques. Presents common computer programs and tools for image analysis. Prerequisite: Undergraduate-level class in calculus and one of the following; introduction to programming, numerical analysis, computational statistics, or related topics; previous experience with computer programming highly recommended; course in statistics helpful but not required.

**NSBB 585. Radiation Detectors for Medical Applications. 4 Units.**

Provides students with a broad overview of radiation detectors for medical applications in general, with emphasis on scintillation detectors and their applications in positron emission tomography. Prerequisite: Undergraduate B.S. degree or equivalent in one of the following areas: physics or biophysics, chemistry or biochemistry, engineering or bioengineering.

**NSBB 587. Radiation Therapy Physics. 4 Units.**

Provides graduate and medical students with a broad understanding of the processing and analysis of basic physics in regards to applications within the context of radiation therapy. Designed to provide students with a basic understanding of basic physical sciences, with the necessary specialist knowledge required to develop a career in radiation therapy. Prerequisite: Undergraduate B.S. degree in the field of physics, chemistry, computer science, or engineering.

**NSBB 697. Research. 1-8 Units.**

The final and central requirement for research-related degrees within the neurosciences, systems biology, or bioengineering programs. Successful completion of this original, independent research project demonstrated through production of a written summary of the research project and approval by the student's mentor and/or research committee. NSBB 697 research units applicable to both the master's and Ph.D. degrees. Prerequisite: Successful completion of coursework leading to research.

**NSBB 699. Dissertation. 1-8 Units.**

Serves as final and central requirement for research-related doctoral degrees within the neurosciences, systems biology, or bioengineering programs. Successful completion of this original, independent research project is demonstrated through production of a written summary of the research project, and approval by the student's mentor and/or research committee. Prerequisite: Successful completion of coursework leading to 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 (NRSG)

### Courses

**NRSG 217. Psychiatric Mental Health Nursing. 6 Units.**

Focuses on the care of adult patients experiencing cognitive, mental, and behavioral disorders. Integrates concepts of crisis intervention, therapeutic communication, anger management, and coping skills throughout the course. Provides the student through clinical experience an opportunity to apply theoretical concepts and implement safe patient care to patients in selected mental health settings. Prerequisite: NRSG 232, NRSG 233.

**NRSG 224. Nursing Pathophysiology. 5 Units.**

Focuses on the altered processes of human physiology. Emphasizes exploration of changes of biological processes of the body and the effects of homeostasis. Studies alteration of health problems, along with the associated clinical manifestations and treatments. Builds foundations for understanding the rationale behind assessment, findings, and nursing intervention.

**NRSG 230. Principles of Professionalism, Clinical Reasoning, and Self-Care. 3 Units.**

Teaches personal and professional accountability and principles of self-care that enhance the student's ability to cope with stressors and succeed in the academic setting, as well as in the nursing profession. Teaches students to think in a systematic and logical manner that equips them to make sound clinical nursing judgments.

**NRSG 231. Foundations of Nursing. 3 Units.**

Provides an introduction to the profession of nursing and the roles of the nurse. Formation of the role of the professional nurse, including scope of practice and supporting guidelines. Explores current issues in health care and professional accountability of the nurse, including patient-centered care, safety; confidentiality; communication; and upholding regulatory, legal, and ethical principles. Applies nursing knowledge to an adult/aging individual in the community.

**NRSG 232. Fundamentals of Nursing. 7 Units.**

Expands on the roles of the nurse, and profession-related and patient-care concepts. Emphasizes physical, psychological, developmental, spiritual, and cultural aspects of whole-person care. Introduces basic nursing skills, the nursing process, and the decision-making framework to assist in developing effective clinical judgment skills. Prerequisite: NRSG 224, NRSG 230, NRSG 231, NRSG 233.

**NRSG 233. Health Assessment. 3 Units.**

Provides knowledge and skills to conduct whole-person health assessment of the adult patient. Emphasizes taking a basic health history, as well as performance of a complete physical examination—including physiological, psychological, sociocultural, and spiritual assessments. Skills laboratory experiences provide an opportunity to practice physical assessment skills. Corequisite: NRSG 231.

**NRSG 244. Strategies for Academic Success. 1 Unit.**

Assesses student needs, learning styles, strengths, challenges/barriers in order to provide 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. Prerequisite: Consent of instructor and the associate dean.



**NRSG 301. Adult Health Nursing I. 6 Units.**

Focuses on the care of adult and older adult patients with health alterations that require medical and/or surgical intervention. Introduces the care of older adults while focusing on their unique physiological and psychological needs. Emphasizes the care of patients with alterations in selected body functions. Integrates concepts of patient-centered care, cultural sensitivity, informatics, safe practice, and professionalism throughout the course. Prerequisite: NRSG 224, NRSG 232, NRSG 233, NRSG 305.

**NRSG 302. Adult Health Nursing II. 8 Units.**

Focuses on the care of adult patients with complex medical/surgical health problems. Emphasizes helping patients and their families cope with alterations in body functions. Integrates concepts of pharmacology, health promotion and education, evidence-based practice, and interdisciplinary collaboration throughout the course. Clinical experiences that provide the student an opportunity to apply theoretical concepts and skills to implement safe care to patients. Prerequisite: NRSG 301.

**NRSG 303. Adult Health Nursing III. 7 Units.**

Focuses on advanced concepts of nursing care as they relate to patients with complex, multisystem alterations in health. Emphasizes implementing time management and organizational skills while managing the care of patients with multiple needs and collaborating with interdisciplinary team. Integrates complex clinical skills; as well as priority setting, clinical judgment, and tenets of legal and theoretical practice throughout the course. Prerequisite: NRSG 302.

**NRSG 305. Nursing Pharmacology. 3 Units.**

Introduction to principles of pharmacology, including pharmacokinetics, pharmacodynamics, medication interactions, and potential adverse medication reactions. Emphasizes drug classifications and nursing care related to the safe administration of medication to patients across the life span. Prerequisite: NRSG 224.

**NRSG 314. Obstetrical and Neonatal Nursing. 5 Units.**

Provides an integrative, family-centered approach to the care of mothers and neonates. Emphasizes normal and high-risk pregnancies, normal growth and development, family dynamics, and the promotion of healthy behaviors in patients. Includes clinical experiences that provide the student an opportunity to apply theoretical concepts and implement safe patient care to mothers and neonates in selected settings. Prerequisite: NRSG 301.

**NRSG 315. Child Health Nursing. 6 Units.**

Provides an integrative, family-centered approach to the care of children from infancy through adolescence. Emphasizes normal growth and development, family dynamics, common pediatric disorders, and the promotion of healthy behaviors in patients. Includes clinical experiences that provide the student an opportunity to apply theoretical concepts and implement safe patient care to children in selected settings. Prerequisite: NRSG 302.

**NRSG 316. Wellness and Health Promotion. 3 Units.**

Introduces concepts of health, wellness, healthy lifestyle behaviors, and health promotion. Examines factors that influence health and health behaviors and the dynamics of behavior change, with an emphasis on motivational theory; exemplary behaviors in nutrition, physical activity, stress management, and tobacco cessation related to health and wellness; and, wellness for the student and practicing nurse. Prerequisite: NRSG 224, NRSG 231.

**NRSG 324. Nursing Informatics and Evidence-Based Practice. 3 Units.**

Provides an overview of nursing informatics as it relates to the provision of safe, quality, patient-centered care. Emphasizes the establishment and provision of evidence-based practice. Stresses the use of information management systems in the collection, management, and communication of patient data; as well as the maintenance of patient privacy and confidentiality.

**NRSG 337. Strategies for Professional Transition. 4 Units.**

Student assesses and strengthens the application of skills in communication, research, professional responsibility, teaching-and-learning process, management, nursing process, and individual empowerment. Additional skills include nursing informatics, orientation to LLU campus/University setting, assessment and development of learning objectives, critical thinking, and portfolio development. Prerequisite: Admission to RNBS program.

**NRSG 338. Essential Leadership Concepts for Nursing Licensure. 1 Unit.**

Management issues related to entry into nursing practice. For students who have a previous B.S./B.A. degree or LVN taking the 45 unit option and who wish to sit for boards at the end of the junior year. Course does not apply towards the bachelor's degree.

**NRSG 375. Introduction to Applied Biostatistics for Nursing. 3 Units.**

Introduces statistical methods of summarizing, analyzing, presenting, and interpreting health-related data. Includes normal and binomial distributions, probability, central limit theorem, and confidence intervals; hypothesis testing using t-tests, ANOVA, correlation, linear regression, and chi-square; and, introduction to multivariable analysis. Prerequisite: Competency in introductory-level mathematics.

**NRSG 375L. 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. Prerequisite or concurrent: NRSG 375.

**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. Prerequisite: NRSG 408.

**NRSG 404. Introduction to Epidemiology for Nursing. 2 Units.**

Explores disease occurrence in human populations. Includes: observation and interpretation in clinical decision-making; promotion of optimal patient outcomes; assessment and measurement of disease occurrence; prevention of illness; infection control; and evaluation of research that impacts delivery of care on local, national, and global levels. Prerequisite or concurrent\*: NRSG 375.

**NRSG 405. Home Care Nursing. 3 Units.**

Provides a holistic approach to care of clients transitioning across the health-illness continuum and health-care settings. Focuses clinical experiences on chronic disease management in post-acute settings. Addresses physiological and psychological needs and common health alterations of older adults, including end of life. Introduces community resources that facilitate continuity of care, and promote safety and optimal wellness. Prerequisite or concurrent\*: NRSG 303, NRSG 314, NRSG 315\*, NRSG 316.



**NRS 407. Complex Nursing Concepts of Health and Disease. 6 Units.**

Explores complex pathophysiological concepts across the life span, using a systems approach. Applies multifaceted alterations at the cell/system levels and functional changes to nursing practice. Uses etiology, pathogenesis, and clinical manifestations to investigate and understand common disease processes. Prerequisite: NRS 337.

**NRS 408. Critical Care Nursing. 8 Units.**

Focuses on advanced concepts of nursing care as they relate to critically ill patients. Emphasizes implementation of time management and organizational skills while managing the care of patients' multiple needs, and collaborating with the interdisciplinary team. Integrates complex clinical skills; as well as priority setting, clinical judgment, and tenets of legal and ethical practice throughout the course. Prerequisite: NRS 303, NRS 314, NRS 315, NRS 316.

**NRS 414. Management and Leadership for the Registered Nurse. 5 Units.**

View of the health-care agency or nursing unit as the core system, with lines of defense and lines of resistance. The management process as the set of interventions aimed at maintaining or restoring a state of equilibrium and order within the organization. The role of the first-line manager observed and some aspects experienced. Prerequisite: NRS 337; NRS 407.

**NRS 416. Public Health Nursing. 4 Units.**

Focuses on the optimal wellness of the community as client. Includes intervention strategies emphasizing primary, secondary, and tertiary prevention with micro- and macro-client systems; assessing factors influencing population health and the use of evidence-based practices in the delivery of spiritually and culturally appropriate interventions; and the role of the nurse as advocate for social justice. Prerequisite: NRS 404, NRS 405, NRS 408 (standard BS) or NRS 404, NRS 425 (RN to BS).

**NRS 416L. Public Health Nursing Clinical Laboratory. 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. Prerequisite or concurrent\*: NRS 404, NRS 416\*.

**NRS 418. Capstone Nursing Practicum. 6 Units.**

Provides student the opportunity to function as a contributing member of the interprofessional team, and to collectively apply the knowledge and practice the skills acquired in previous courses. Gives students the opportunity to provide care to a caseload of patients that is safe, evidence-based, patient-centered, and focused on promoting positive patient outcomes. Emphasizes demonstration of professional behaviors. Prerequisite: NRS 408.

**NRS 419. Capstone Nursing Leadership. 6 Units.**

Facilitates transition to the role of a professional nurse in the health-care system. Emphasizes contemporary issues and management concepts; development of the skills of delegation, conflict management, and leadership; legal and ethical issues with a focus on personal accountability and responsibility; and, analysis of health-care policy, fiscal responsibility, and standards of practice according to regulatory requirements and institution policies. Prerequisite or concurrent: NRS 408.

**NRS 424. Professional RN Capstone. 7 Units.**

Focuses on professional nursing development to promote wellness of individuals, families, and groups under diverse circumstances in clinical practice. Enhances interprofessional decision-making while exploring ethical, professional, and clinical issues. Prerequisite: NRS 337, NRS 407.

**NRS 425. Introduction to Epidemiology for RNs. 3 Units.**

Explores epidemiological investigation methods, evaluates study designs, and analyzes utilization of EBP nursing impacting delivery of care. In-depth exploration of interdisciplinary communication, collaboration, and development of nursing interventions impacting disease identification, control, and management. Focuses on assessment and measurement of disease occurrence, frequency and prevention of illness, IC practices, and evaluation of evidence-based research impacting nursing care. Prerequisite: Completion of statistics course.

**NRS 428. Health Promotion for the RN. 4 Units.**

Examines health promotion in relation to health models. Utilizes evidence-based practice to promote wellness and optimum health across life span. Examines role of lifestyle behaviors in health promotion and illness prevention. Applies strategies for health behavioral change to promote wellness. Prerequisite: NRS 337.

**NRS 429. Nursing Research. 3 Units.**

Promotes clinical decision making, based on evidence, through the exploration and integration of current scientific evidence, use of clinical reasoning, identification of patient preferences, and assessment of available resources. Provides the knowledge and understanding of qualitative and quantitative systems of inquiry. Focuses on analysis and synthesis of evidence to answer a clinical question relevant to nursing practice and patient-centered care. Prerequisite: NRS 324.

**NRS 434. Public Health Nursing Laboratory for the Working RN. 3 Units.**

The clinical application of public health with a focus on vulnerable populations. Intervention/strategies involve health promotion and disease prevention in the community. Clinical experiences include independent work in a variety of community workplace settings. Designed for the RN to B.S. student who is not seeking state certification as a public health nurse. Prerequisite or concurrent\*: NRS 337, NRS 416\*.

**NRS 497. Advanced Clinical Experience. 3-12 Units.**

An elective course open to students seeking clinical experience in nursing.

**NRS 499. Directed Study. 1-8 Units.**

Opportunity for clinical experience in a selected area of nursing. Prerequisite: Consent of instructor and the associate dean.

## Nursing—Graduate (NGRD)

### Courses

**NGRD 610. Master's Comprehensive Project. 2 Units.**

Comprehensive project based on a PICOT question as appropriate for focus area of study. Prerequisites: NGRD 651, NGRD 658; Completion of clinical courses required for concentration area.

**NGRD 621. Pharmacology in Advanced Practice I. 2 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. Addresses specific legal and ethical issues for advanced practice.

**NGRD 622. Pharmacology in Advanced Practice II. 3 Units.**

Focuses on specific major drug classifications, discussion of the therapeutic use of these drugs, and their application to medical conditions.

**NGRD 623. Neonatal Pharmacology. 3 Units.**

Advanced principles of neonatal pharmacotherapeutics, pharmacodynamics and pharmacokinetics. Additional overview of specific drug classifications within the neonatal population. Prerequisite: NGRD 621.

**NGRD 624. Advanced Health Assessment. 4 Units.**

Focuses on advanced health assessment skills and knowledge necessary to successfully conduct a comprehensive history and physical throughout the life span. Emphasizes a holistic plan of care, including health promotion strategies, while considering cultural and developmental variations of the patient.

**NGRD 625. Advanced Clinical Pathophysiology. 4 Units.**

Provides graduate students with an integrated understanding of normal human physiology and the most common pathological changes that occur throughout the life span. Focuses on using pathophysiological concepts to explain clinical observations and management.

**NGRD 626. Advanced Methods for Synthesis Science. 4 Units.**

Provides a detailed description and application of the systematic review process, discusses the strengths and limitations of the method, and provides step-by-step guidance on how to actually perform a systematic review based on a methodology developed by the Joanna Briggs Institute (JBI). Prerequisite: NGRD 658; or equivalent graduate-level research course.

**NGRD 629. Special Topics. 1-4 Units.**

Lecture and discussion of a current topic in graduate nursing 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.

**NGRD 650. Advanced Role Development and Collaboration. 4 Units.**

Focuses on transition to advanced practice and doctoral role. Topics include advanced practice nursing, theoretical bases, competencies, interprofessional collaboration, legal requirements, evidence-based practice, research, and professional writing.

**NGRD 651. Theoretical Foundations for Evidence-Based Practice. 4 Units.**

Focuses on the philosophical, theoretical, and scientific foundations of nursing practice and research. Examines evidence-based models and theories for use in clinical decision making, program development, and research design.

**NGRD 652. Health-Care Systems Leadership. 4 Units.**

Applies leadership theories and organizational models to complex professional and systems issues addressed by the advanced practice nursing leader. Focuses on development of leadership competencies for quality health care.

**NGRD 653. Health Systems Policy Development and Advocacy. 4 Units.**

Evaluates the impact of sociopolitical systems/processes within the context of current trends and issues affecting population health. Explores the impact of nursing on systems in the workplace, community, professional organizations, and government. Emphasizes strategic planning, policy formation, and advocacy.

**NGRD 654. Social Determinants of Health. 4 Units.**

Examines factors that contribute to disease prevention, health promotion, and well-being in vulnerable and diverse populations. Analyzes models, programs, and systems that address assessment, implementation, and evaluation for safe, equitable, culturally competent, and just health care.

**NGRD 655. Health Systems Finance. 4 Units.**

Focuses on health-care economics and finance—including evaluation of financial reports, business plans, and cost-benefit analyses of care-delivery systems. Explores strategies for optimizing fiscal resources to ensure safe patient care and best practices.

**NGRD 656. Outcomes Assessment for Strategic Planning. 4 Units.**

Examines and evaluates patient outcomes across the health-care system. Considers strategic planning, quality improvement, and information and technology systems that promote excellence in nursing practice and research.

**NGRD 657. Intermediate Statistics. 4 Units.**

Topics in intermediate statistics—including ANOVA, multiple regression, other multivariate statistical procedures, and interpreting computer output. Applies statistical analysis in translational research and research design.

**NGRD 658. Nursing Research and Translational Science. 4 Units.**

Provides a comprehensive understanding of scientific thinking, research methods, and translation science. Focuses on the research and evidenced-based practice (EBP) roles of scholarship for doctorally prepared nurse leaders. Prerequisite: NGRD 657.

**NGRD 659. Professional Writing for Nurse Leaders. 4 Units.**

Principles and methods of scholarly writing for research and evidence-based practice (EBP) dissemination.

**NGRD 660. Integrative Leadership Case Study. 1-6 Units.**

Focuses on integration of advanced concepts for DNP practice. Provides opportunity to extend learning from previous academic work to achieve the knowledge needed for the D.N.P. degree. Course may be processed as an IP but must be completed before beginning NGRD 667 DNP Proposal Development.

**NGRD 664. Advanced Statistics. 4 Units.**

Explains the different methods of multivariable analyses and other advanced statistical methods (multiple linear, multiple logistic regression, and survival analysis); and indicates reasons for choosing one method over another. Students required to perform an appropriate multivariable analysis on a data set, conduct an appropriate literature review for confounding variables, and present their findings within a specific time frame. Prerequisite: NGRD 657.

**NGRD 667. Introduction to the Doctor of Nursing Practice Inquiry Proposal Project. 3 Units.**

Examines the Iowa Model of Research in Practice (IMRP) guidelines and process to systematically develop an approach for implementing an evidence-based project to improve patient-care quality. Includes identification of the EBP question, the search for evidence, and steps for effective translation of the project into the specific practice setting.

**NGRD 669A. DNP Practice Inquiry Project. 4 Units.**

The first of six courses in the development of the DNP project. Student 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. Prerequisite or concurrent\*: NGRD 656, NGRD 657, NGRD 658, NGRD 667\*.

**NGRD 669B. DNP Practice Inquiry Project. 4 Units.**

The second of six courses in the development of the DNP project. Student comprehensively reviews and critiques relevant literature, works through the IRB approval process, and continues developing the DNP project paper and PowerPoint presentation. Prerequisite for concurrent\*: NGRD 667, NGRD 669A\*.

**NGRD 669C. DNP Practice Inquiry Project. 2 Units.**

The third of six courses in the development of the DNP project. Student pilots the project in the practice setting, and continues developing the DNP project paper and PowerPoint presentation. Prerequisite or concurrent: NGRD 669A, NGRD 669B.

**NGRD 669D. DNP Practice Inquiry Project. 2 Units.**

The fourth of six courses in the development of the DNP project. Student implements the change project using appropriate communication strategies with key personnel; and adapts change strategies appropriately, while continuing to develop the DNP project paper and PowerPoint presentation. Prerequisite: NGRD 667, NGRD 669A, NGRD 669B, NGRD 669C.

**NGRD 669E. DNP Practice Inquiry Project. 2 Units.**

The fifth of six 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. Student continues developing the DNP project paper and PowerPoint presentation. Prerequisite or concurrent: NGRD 669D.

**NGRD 669F. DNP Practice Inquiry Project. 2 Units.**

The last of six courses in the development of the DNP project. Student develops results for dissemination through publication and presentation, and completes the DNP project paper and PowerPoint presentation. Prerequisite or concurrent: NGRD 669E.

**NGRD 679. Writing for Professional Publication. 4 Units.**

Provides a review of fundamental writing skills appropriate for doctoral nursing students and a mentored writing experience that includes information, resources, and guidance to facilitate development of a publishable manuscript.

**NGRD 680. Strategies for Advanced 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. Prerequisite: NGRD 651.

**NGRD 681. 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.

**NGRD 683. 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). Acceptance into the Ph.D. degree program in nursing.

**NGRD 684. Quantitative Research Methods. 4 Units.**

Examines quantitative research methods applicable to advancing and developing nursing science. Topics range from the formulation of research problems and questions to discussing and identifying complex designs and methods. Guides the student in development of a quantitative research proposal that focuses on an area of study that may serve as the initial step in conducting independent dissertation research. Prerequisite: Minimum of one doctoral-level statistics course, or equivalent.

**NGRD 685. Qualitative Research Methods. 4 Units.**

Overview of qualitative research methods. Emphasizes selected qualitative and mixed research methodologies specific to social, clinical, and health services research. Topics 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.

**NGRD 686. Applied Psychometrics for Health Care. 4 Units.**

Advanced study of psychological tests and application in the health sciences. Includes review of basic statistics and an introduction to more advanced analyses important to test development and evaluation. Focuses on methods of test development, procedures for evaluating psychometric adequacy, and issues in the use and interpretation of test scores. Prerequisite: NGRD 657, NGRD 664.

**NGRD 688. 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. Prerequisite: Doctoral standing or consent of instructor.

**NGRD 689. Spiritual Care: Theory, Research and Practice. 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.

**NGRD 695. Advanced Qualitative Research. 4 Units.**

Builds upon NGRD 685 Qualitative Research Methods. Focuses on an in-depth exploration of descriptive qualitative methods, including coding, with expansion and application of the method for dissertation design. Prerequisites: NGRD 685.

**NGRD 696. Master's Thesis. 1-5 Units.**

Completion of the requirements of the master's thesis. Prerequisites: NGRD 657; NGRD 658; approval of advisor.

**NGRD 697. Dissertation Research. 1-8 Units.**

Development, conduct, analysis, and defense of dissertation research. IP may be applied as needed, depending on the progress of the work. Prerequisite: Satisfactory completion of the Comprehensive Examination.

**NGRD 699. Guided Study. 1-6 Units.**

Opportunity for intensive study in a selected area of nursing, under faculty direction.

## Nursing/Graduate Acute Care Nurse Practitioner (NGAC)

### Courses

**NGAC 501. Acute Care Advanced Pharmacology I. 2 Units.**

Principles of pharmacodynamics, pharmacotherapeutics, and pharmacokinetics. Overview of major drug classifications, discussion of therapeutic use of drugs, and application to acute medical conditions. Addresses specific legal and ethical issues for APRNs, including CA BRN Schedule 2 prescribing.

**NGAC 502. Acute Care Advanced Pharmacology II. 3 Units.**

Applies principles presented in NGAC 501 to medications commonly prescribed in the acute care settings. Overview of specific major drug classifications, discussion of the therapeutic use of drugs, and application to medical conditions. Focuses on transitioning the acute care patient to primary care and enhancing the transitional communication between providers. Prerequisite: NGAC 501.

**NGAC 533. Pediatric Acute Care Nurse Practitioner III. 6 Units.**

Prepares students to address physiologic and psychological needs of infants, children, and adolescents with acute, critical, chronic, and mental health conditions. Focuses on fundamental principles of advanced pediatric acute care management and most commonly affected systems. Prerequisite: NGPE 532.

**NGAC 534. Primary Care Pediatric Nurse Practitioner IV. 6 Units.**

Prepares students to address physiologic and psychological needs of infants, children, and adolescents with acute, critical, chronic, and mental health conditions. Focuses on fundamental principles of advanced pediatric acute care management and most commonly affected systems. Prerequisite: NGAC 533.

**NGAC 535. Pediatric Acute Care Nurse Practitioner V. 6 Units.**

Prepares students to address physiologic and psychological needs of infants, children, and adolescents with acute, critical, chronic, and mental health conditions. Focuses on increasingly complex conditions and the care of critical and end-of-life patients. Prerequisite: NGPE 534.

**NGAC 536. Pediatric Acute Care Nurse Practitioner VI. 7 Units.**

Emphasis on integrating prior learning and increasing clinical competence in the pediatric acute care settings caring for children from birth through 21 years of age. Focuses on integration and synthesis of knowledge and skills under the guidance of an expert preceptor with the goal of working towards independence and in collaboration with the health-care team in preparation for the national certification exam. Prerequisite: NGAC 535.

**NGAC 540. Acute Care Nurse Practitioner Skills Lab. 1 Unit.**

Builds on skills, professional responsibilities, and legal issues that impact and/or influence the clinical practice of the acute care nurse practitioner (ACNP). Enhances the focus on health-care concepts and skills essential for the ACNP with emphasis on care of emergent conditions, demonstration of assessment and development of a plan for an acute care patient, and psychosocial and spiritual care with a focus on the medically underserved. Prerequisite: NGAC 501, NGAC 502, NGRD 624, NGRD 625.

**NGAC 541. Adult Gerontology Acute Care Nurse Practitioner I. 6 Units.**

Introduces the role, professional responsibilities, and clinical practice of the adult-gerontology acute care nurse practitioner (AGACNP). Focuses on acute care health-care concepts related to health maintenance, promotion of optimal wellness and common, and acute illnesses across the life span. Prerequisite or concurrent: NGAC 540, NGRD 500.

**NGAC 542. Adult Gerontology Acute Care Nurse Practitioner II. 6 Units.**

Builds on the role, professional responsibilities and legal issues that impact and/or influence the clinical practice of the adult/gerontology acute care nurse practitioner (ACAGNP). Focuses on acute care concepts related to management of patients and families with acute and chronic conditions, with emphasis in pulmonary, cardiovascular, neurological, renal, gastrointestinal, musculoskeletal, immunological, endocrine, hematology, oncology, acute care and trauma, EKG, radiology, and lab testing. Prerequisite: NGAC 541.

**NGAC 543. Adult Gerontology Acute Care Nurse Practitioner III. 7 Units.**

Continues the focus on the AGACNP role of health promotion and management of patients with common chronic conditions across the adult life span. Focuses on acute health care concepts, promotion of optimal wellness, management of patients and families with acute and chronic conditions with emphasis on the following systems: pulmonary, cardiovascular, neurological, renal, gastrointestinal, musculoskeletal, immunological, endocrine, hematology, oncology, and trauma. Prerequisite: NGAC 542.

**NGAC 544. Adult Gerontology Acute Care Nurse Practitioner IV. 7 Units.**

Continues the focus on the AGACNP role of health promotion and management of patients with common chronic conditions across the adult life span. Focuses on acute health care concepts, promotion of optimal wellness, management of patients and families with acute and chronic conditions with emphasis on the following systems; pulmonary, cardiovascular, neurological, renal, gastrointestinal, musculoskeletal, immunological, endocrine, hematology, oncology, and trauma. Prerequisite: NGAC 543.

**NGAC 545. Adult Gerontology Acute Care Nurse Practitioner V. 8 Units.**

Focuses on integration and synthesis of knowledge and skills under the guidance of an expert preceptor with the goal of working towards independence in collaboration with the health care team and in preparation for the national certification exam. Prerequisite: NGAC 544.

## Nursing/Graduate Adult-Gerontology Nurse Practitioner (NGAG)

### Courses

**NGAG 500. Gerontological Health and Wellness. 2 Units.**

Begins development of the advanced practice role of health promotion, maintenance, and management. Focuses on fragile elders with acute and chronic conditions. Prerequisite: NGRD 621, NGRD 622, NGRD 624, NGRD 625.

**NGAG 501. Primary Care Adult-Gerontology Nurse Practitioner I. 5 Units.**

Introduces the role, professional responsibilities, and clinical practice of the primary care adult-gerontology nurse practitioner (AGNP). Focuses on primary health care concepts related to health maintenance and promotion of optimal wellness and common, acute illnesses of the adolescent to adult. Per week: lecture 3 hours, practicum 6 hours. Prerequisite: NGAG 500.

**NGAG 502. Primary Care Adult-Gerontology Nurse Practitioner II. 6 Units.**

Focuses on the AGNP role of health promotion and management of reproductive health and related conditions across the adolescent to adult life span. Per week: lecture 3 hours, practicum 9 hours. Prerequisite: NGAG 501.

**NGAG 503. Primary Care Adult-Gerontology Nurse Practitioner III. 8 Units.**

Continues focus on the AGNP role of health promotion and management of patients with common chronic conditions across the adult life span. Per week: lecture 4 hours, practicum 12 hours. Prerequisite: NGAG 502.

**NGAG 504. Primary Care Adult-Gerontology Nurse Practitioner IV. 8 Units.**

Focuses on health maintenance and management of patients with complex acute and chronic conditions across the adult life span. Per week: lecture 4 hours, practicum 12 hours. Prerequisite: NGAG 503.



**NGAG 505. Primary Care Adult-Gerontology Nurse Practitioner V: Practicum. 8 Units.**

Emphasizes integrating prior learning and increasing clinical competence in primary care settings. Includes discussion and on-line certification practice testing in addition to final practicum. Per week: lecture 1 hour, practicum 21 hours. Prerequisite: NGAG 504.

**NGAG 509. Primary Care Adult-Gerontology Nurse Practitioner: Skills Laboratory. 1 Unit.**

Focuses on kinetic learning and practice of primary care clinical skills and procedures. Prerequisite: NGAG 501.

## Nursing/Graduate Clinical Nurse Specialist (NGCN)

### Courses

**NGCN 551. Adult - Gerontology: CNS 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. Prerequisite: NGRD 621, NGRD 622, NGRD 625.

**NGCN 552. Adult - Gerontology: CNS 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. Prerequisite: NGRD 621, NGRD 622, NGRD 624, NGRD 625.

**NGCN 553. Adult - Gerontology: CNS 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. Per week: theory 2 hours, clinical 6 hours.

**NGCN 554A. Adult-Gerontology: CNS Clinical Practicum. 5 Units.**

Provides 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. Per week: clinical hours variable. Prerequisite: NGCN 551, NGCN 552, NGCN 553.

**NGCN 554B. Adult - Gerontology: CNS Clinical Practicum. 5 Units.**

Provides 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. Per week: clinical hours variable. Prerequisite: NGCN 554A.

**NGCN 554C. Adult - Gerontology: CNS Clinical Practicum C. 6 Units.**

Provides 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. Per week: clinical hours variable. Prerequisite: NGCN 554A, NGCN 554B.

**NGCN 561. Pediatrics: Clinical Nurse Specialist 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. Prerequisite: NGRD 621, NGRD 622, NGRD 625.

**NGCN 562. Pediatrics: Clinical Nurse Specialist 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. Prerequisite: NGCN 561.

**NGCN 563. Pediatrics: Clinical Nurse Specialist 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. Per week: theory 2 hours, clinical 6 hours. Prerequisite: NGCN 562.

**NGCN 564. Pediatrics: Clinical Nurse Specialist Clinical 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. Per week: clinical hours variable. Prerequisite: NGCN 561, NGCN 562, NGCN 563.

## Nursing/Graduate Family Nurse Practitioner (NGFP)

### Courses

**NGFP 510. Family Nurse Practitioner: Pediatrics and Adolescent. 5 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 6 hours.

**NGFP 511. Family Nurse Practitioner I. 5 Units.**

Introduces the role, professional responsibilities, and clinical practice of the primary care family nurse practitioner (FNP). Focuses on primary health-care concepts related to health maintenance and promotion of optimal wellness and common, acute illnesses across the life span. Per week: lecture 3 hours, practicum 6 hours. Prerequisite: NGFP 510.

**NGFP 512. Family Nurse Practitioner II. 6 Units.**

Focuses on the FNP role of health promotion and management of reproductive health and related conditions across the adult life span. Per week: lecture 3 hours, practicum 9 hours. Prerequisite: NGFP 511.

**NGFP 513. Family Nurse Practitioner III. 8 Units.**

Focuses on health maintenance and management of patients with complex acute and chronic conditions across the adult life span. Per week: lecture 4 hours, practicum 12 hours. Prerequisite: NGFP 512.

**NGFP 514. Family Nurse Practitioner IV. 8 Units.**

Focuses on health maintenance and management of patients with complex acute and chronic conditions across the adult life span. Per week: lecture 4 hours, practicum 12 hours. Prerequisite: NGFP 513.

**NGFP 515. Family Nurse Practitioner V: Practicum. 8 Units.**

Emphasizes integrating prior learning and increasing clinical competence in primary care settings. Includes discussion and on-line certification practice testing in addition to final practicum. Per week: lecture 1 hour, practicum 21 hours. Prerequisite: NGFP 514.

**NGFP 519. Family Nurse Practitioner: Skills Lab. 1 Unit.**

Focuses on kinetic learning and practice of primary care clinical skills and procedures. Prerequisite: NGFP 511.



# Nursing/Graduate Nurse Anesthesia (NGNA)

## Courses

### **NGNA 571. Advanced Role for the Nurse Anesthetist I. 2 Units.**

Examines advanced practice registered nursing roles, with an emphasis on the role of the nurse anesthetist, issues relevant to nurse anesthesia practice, and wellness.

### **NGNA 572. Advanced Role for the Nurse Anesthetist II. 2 Units.**

Examines the regulation of nurse anesthesia practice, ethical and legal aspects of nurse anesthesia practice, the business of anesthesia, and the various roles of the nurse anesthetist. Prerequisite: NGNA 571.

### **NGNA 573. Scientific Foundations of Nurse Anesthesia Practice. 4 Units.**

Focuses on the application of principles of chemistry and physics to the practice of anesthesia.

### **NGNA 574. Anesthesia Equipment and Technology. 2 Units.**

Examines various equipment and technology utilized in anesthesia practice. Prerequisite: NGNA 573.

### **NGNA 575. Advanced Clinical Anatomy for the Nurse Anesthetist I. 2 Units.**

Emphasizes the clinical significance of selected respiratory, nervous, vascular, and musculoskeletal system anatomical structures and associated functional aspects as they relate to the practice of anesthesia.

### **NGNA 576. Advanced Clinical Anatomy for the Nurse Anesthetist II. 2 Units.**

Emphasizes the clinical significance of selected respiratory, nervous, vascular, and musculoskeletal system anatomical structures and associated functional aspects as they relate to the practice of anesthesia.

### **NGNA 577. Advanced Physiology for the Nurse Anesthetist. 4 Units.**

Examines selected aspects of advanced cell biology and systems physiology that are related to homeostasis and foundational to the practice of anesthesia.

### **NGNA 578. Advanced Physiology and Pathophysiology for the Nurse Anesthetist I. 4 Units.**

Examines normal human physiology and the causes, processes, and clinical manifestations of disease. Focuses on pathophysiology of the cardiovascular, pulmonary, musculoskeletal, and neuromuscular systems, as well as the anesthesia management of patients with associated disorders. Prerequisite: NGNA 577.

### **NGNA 579. Advanced Physiology and Pathophysiology for the Nurse Anesthetist II. 4 Units.**

Examines normal human physiology and the causes, processes, and clinical manifestations of disease. Focuses on pathophysiology of the endocrine, gastrointestinal, hepatic, and renal systems, as well as the anesthesia management of patients with associated disorders. Also examines pediatric and obstetric physiology and pathophysiology relevant to the practice of anesthesia. Prerequisite: NGNA 577, NGNA 578.

### **NGNA 580. Advanced Health Assessment for Nurse Anesthetists. 4 Units.**

Focuses on health history and physical assessment as they relate to the perioperative patient population. Includes invasive and noninvasive systems assessment and diagnostic methods. Principles and application of health promotion strategies for the CRNA population.

### **NGNA 581. Advanced Pharmacology for the Nurse Anesthetist I. 6 Units.**

Applies principles of pharmacology to the practice of anesthesia, including the pharmacodynamics, pharmacokinetics, pharmacotherapeutics, and toxicology of inhalation anesthetics, intravenous anesthetics, opioid agonists and antagonists, non-opioid analgesics, neuromuscular blocking agents, and anesthetic adjuncts.

### **NGNA 582. Advanced Pharmacology for the Nurse Anesthetist II. 2 Units.**

Applies principles of pharmacology to the practice of anesthesia, including the pharmacodynamics, pharmacokinetics, pharmacotherapeutics, and toxicology of local anesthetics and anesthetic adjuncts. Prerequisite: NGNA 581.

### **NGNA 583. Advanced Pharmacology for the Nurse Anesthetist III. 2 Units.**

Applies principles of pharmacology to the practice of anesthesia, including the pharmacodynamics, pharmacokinetics, pharmacotherapeutics, and toxicology of autonomic agents and additional drugs of interest. Prerequisite: NGNA 582.

### **NGNA 584. 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, culminating in the creation and implementation of a simulated anesthetic plan of care.

### **NGNA 585. 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 cardiovascular, pulmonary, and neurological disorders. Culminates in the creation and implementation of an anesthetic plan of care, including the diagnosis and treatment of simulated altered physiological responses coincident to the provision of anesthesia services and cardiovascular and/or pulmonary complications. Prerequisite: NGNA 584.

### **NGNA 586. Principles of Nurse Anesthesia Practice III. 4 Units.**

Focuses on the individualized perianesthetic management of patients with various coexisting diseases across the life span, including neonatal, pediatric, obstetric, and geriatric patient populations. Prerequisite: NGNA 584, NGNA 585.

### **NGNA 587. Principles of Nurse Anesthesia Practice IV. 4 Units.**

Focuses on the perianesthetic management of special patient populations and surgical subspecialties. Prerequisite: NGNA 584, NGNA 585, NGNA 586.

### **NGNA 591. Clinical Practicum I. 2 Units.**

Introduces the clinical setting through preceptored experiences in the management of patients throughout the perianesthetic continuum. Prerequisite: NGNA 584, NGNA 585.

### **NGNA 592. Clinical Practicum II. 2 Units.**

Preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on basic principles of anesthesia, including preparation of the anesthetizing area and successful creation and implementation of an anesthetic plan of care. Prerequisite: NGNA 591.

### **NGNA 593. Clinical Practicum III. 2 Units.**

Preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on basic principles of anesthesia, emphasizing refinement of anesthetic management to improve patient safety and prevent iatrogenic complications. Prerequisite: NGNA 591, NGNA 592.

### **NGNA 594. Clinical Practicum IV. 2 Units.**

Preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on predicting and preventing anesthetic management issues in cases with increasing complexity. Prerequisite: NGNA 591, NGNA 592, NGNA 593.

**NGNA 595. Clinical Practicum V. 4 Units.**

Preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on basic and advanced principles of anesthesia through the introduction of specialty rotations. Prerequisite: NGNA 591, NGNA 592, NGNA 593, NGNA 594.

**NGNA 596. Clinical Practicum VI. 4 Units.**

Preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on refinement of anesthetic management skills through continued participation in specialty clinical rotations. Prerequisite: NGNA 591, NGNA 592, NGNA 593, NGNA 594, NGNA 595.

**NGNA 597. Clinical Practicum VII. 4 Units.**

Preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on the development and implementation of anesthetic care plans using all major techniques for all surgical specialties. Prerequisite: NGNA 591, NGNA 592, NGNA 593, NGNA 594, NGNA 595, NGNA 596.

**NGNA 598. Clinical Practicum VIII. 4 Units.**

Provides preceptored clinical experience in the full scope of nurse anesthesia practice. Focuses on refinement of decision-making with increased flexibility and speed. Prerequisite: NGNA 591, NGNA 592, NGNA 593, NGNA 594, NGNA 595, NGNA 596, NGNA 597.

**NGNA 599. Clinical Practicum IX. 4 Units.**

Culminating clinical course focusing on refinement and demonstration of requisite knowledge, skills, and competencies necessary for entry into practice. Prerequisite: NGNA 591, NGNA 592, NGNA 593, NGNA 594, NGNA 595, NGNA 596, NGNA 597, NGNA 598.

## Nursing/Graduate Nurse Educator (NGNE)

### Courses

**NGNE 500. Teaching and Learning Theory. 3 Units.**

Explores the components of the teaching-learning process, including traditional and current modalities. Provides opportunities for students to practice specific teaching strategies.

**NGNE 501. 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.

**NGNE 502. 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.

**NGNE 503. Educational Leadership. 2 Units.**

Focuses on development of leadership skills within the nursing education arena that facilitates quality education. Explores the processes of moving from a nurse faculty role to a leadership role with a perspective toward developing educational approaches that meet current and future needs of students and facilitate the development of nursing faculty. Learned leadership to advance nursing education by being involved with others, being authentic, and creating an environment for change.

**NGNE 504. Teaching Practicum. 3 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 0 hours, practicum 9-12 hours. Prerequisite: NGNE 500.

**NGNE 505. 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.

## Nursing/Graduate Nurse Leadership (NGNL)

### Courses

**NGNL 604. Nursing Administration Practicum. 1-8 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 3-30 hours. Prerequisite: NGRD 652; HADM 528.

**NGNL 611. Nurse Leadership Practicum I. 2 Units.**

Clinical focus on accounting principles as they relate to nursing leadership.

**NGNL 612. Nurse Leadership Practicum II. 2 Units.**

Clinical focus on human resource principles as they relate to nursing leadership. Prerequisite: NGNL 611.

**NGNL 613. Nurse Leadership Practicum III. 2 Units.**

Clinical focus on health policy and health system quality principles as they relate to nursing leadership. Prerequisite or concurrent: NGNL 612.

**NGNL 614. Nurse Leadership Practicum IV. 2 Units.**

Clinical focus on health-care finance principles as they relate to nursing leadership. Prerequisite or concurrent: NGNL 613.

**NGNL 615. Nurse Leadership Practicum V. 2 Units.**

Clinical focus on health-care legal and strategic planning principles as they relate to nursing leadership. Prerequisite or concurrent: NGNL 614.

**NGNL 616A. Nurse Leadership Practicum VI. 2 Units.**

Develops ongoing concepts in a nurse leadership-focused area of the student's choice. May include areas addressed in earlier practicum courses. Prerequisite or concurrent: NGNL 615.

**NGNL 616B. Nurse Leadership Practicum VI. 3 Units.**

Continues NGNL 616A. Prerequisite or concurrent: NGNL 616A.

**NGNL 616C. Nurse Leadership Practicum VI. 3 Units.**

Continues NGNL 616B. Prerequisite or concurrent: NGNL 616B.

## Nursing/Graduate Pediatric Nurse Practitioner (NGPE)

### Courses

#### NGPE 531. Primary Care Pediatric Nurse Practitioner I. 4 Units.

Focuses on basic primary health-care concepts of children from birth through 21 years of age related to health maintenance and promotion of optimal wellness. Emphasis on learning developmental milestones and childhood immunizations as well as assessment of physiological, psychological, sociocultural, developmental and spiritual variables. Introduces the role of a pediatric nurse practitioner in the primary care setting. Discusses health care issues related to ethics and culture. Prerequisite: NGAC 501, NGAC 502; NGRD 624, NGRD 625.

#### NGPE 532. Primary Care Pediatric Nurse Practitioner II. 6 Units.

Continues development of the pediatric nurse practitioner primary care role for children from birth through 21 years of age related to assessment and management of common and acute illnesses while incorporating health maintenance and prevention. Introduces principles of pharmaceutical management and prescription writing. Discusses the role of a pediatric nurse practitioner in the community. Prerequisite: NGPE 531.

#### NGPE 533. Primary Care Pediatric Nurse Practitioner III. 6 Units.

Continues development of the PNP primary care role in screening, assessment, and management of chronic diseases in children from birth through 21 years of age. Per week: theory 3 hours, practicum 9 hours. Prerequisite: NGPE 532.

#### NGPE 534. Primary Care Pediatric Nurse Practitioner IV. 6 Units.

Emphasizes assessment and management of children from birth to 21 years of age with complex chronic disorders, genetic syndromes and special healthcare needs. Introduces role of pediatric nurse practitioner in caring for children with special health care needs. Prerequisite: NGPE 533.

#### NGPE 535. Primary Care Pediatric Nurse Practitioner V. 6 Units.

Focus on screening, management, and referral of children from birth through 21 years with mental-health, developmental, and learning disorders. Prerequisite: NGPE 534.

#### NGPE 536. Primary Care Pediatric Nurse Practitioner VI: Practicum. 7 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. Includes discussion and certification practice testing in addition to final practicum. Prerequisite: NGPE 535.

#### NGPE 539. Primary Care Pediatric Nurse Practitioner: Skills Laboratory. 1 Unit.

Equips pediatric nurse practitioner students with common ambulatory care skills most often used in pediatric primary care clinics. Corequisite: NGPE 531.

## Nursing/Graduate Psychiatric Mental Health Nurse Practitioner (NGPM)

### Courses

#### NGPM 541. Psychiatric Mental Health Nurse Practitioner I. 4 Units.

Focuses on psychopharmacology principles and treatment in clinical management of psychiatric disorders and symptoms across the life span. Prerequisite: NGRD 621, NGRD 622, NGRD 624, NGRD 625.

#### NGPM 542. Psychiatric Mental Health Nurse Practitioner II. 6 Units.

Focuses on mental health promotion and assessment of psychiatric disorders occurring in children, adolescents, adults, and families across the life span. Prerequisite: NGPM 541.

#### NGPM 543. Psychiatric Mental Health Nurse Practitioner III. 6 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. Prerequisite: NGPM 542.

#### NGPM 544. Psychiatric Mental Health Nurse Practitioner IV. 6 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. Prerequisite: NGPM 543.

#### NGPM 545. Psychiatric Mental Health Nurse Practitioner V. 6 Units.

Focuses on modalities of evidence-based psychotherapies, as well as complementary and alternative approaches across the life span—with emphasis on select psychiatric disorders, community psychiatric populations, and brief solution-oriented psychotherapy. Prerequisite: NGPM 544.

#### NGPM 546. Psychiatric Mental Health Nurse Practitioner VI: Practicum. 7 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 mental health nurse practitioner courses and clinical experiences. Includes discussion and certification practice testing in addition to final practicum. Prerequisite: NGPM 545.

#### NGPM 549. Psychiatric Mental Health Nurse Practitioner VII: Skills Laboratory. 1 Unit.

Focuses on practice of psychiatric care clinical skills and procedures. Prerequisite: NGPM 546.

## 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 506. Nutritional Metabolism. 3 Units.

Macronutrient structure, chemistry and functions as well as their metabolic roles in human health, including the prevention and pathogenesis of various diseases. Topics will cover the fundamentals of macronutrient metabolism. Prerequisite: General and organic chemistry.

#### NUTR 508. Plant-Based Nutrition for Life Cycle. 2 Units.

Comprehensive study of nutritional and metabolic requirements throughout the life cycle and how these are supplied by plant-rich diets. Includes contemporary issues related to plant-based nutrition. Helps the learner evaluate current scientific literature and develop informed dietary guidance.

#### 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. Prerequisite: NUTR 504 or equivalent.

**NUTR 517. Advanced Nutrition I: Carbohydrates and Lipids. 4 Units.**

Provides advanced study of the nutrition, metabolism, and function of carbohydrates and lipids as related to health and disease. Prerequisite: NUTR 506; or biochemistry equivalent; or consent of instructor.

**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 520. Sustainable Food Systems. 3 Units.**

Introduces the concept of sustainable food systems in relation to nutrition. Discusses the evolution of the food system from historical to modern context and what challenges food systems pose to sustainability. Explains strategies to address these challenges, including plant-based diets and reducing food loss and food waste. Provides a foundation for understanding and commenting on contemporary issues in food systems sustainability.

**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 and development of group education lesson plans. Includes 1 unit of laboratory.

**NUTR 527. Assessment of Nutritional Status. 3 Units.**

Provides a foundation for understanding how to collect and interpret anthropometric, biochemical, clinical, and dietary data; and for understanding how to use such data in analyzing food and nutrient intake and needs in individuals, groups, and populations of varying health statuses. Includes 1 unit of laboratory.

**NUTR 529. Health Aspects of Vegetarian Eating. 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.

**NUTR 530. Dietary Assessment of Populations. 2 Units.**

Presents an overview of dietary assessment of populations. Discusses methodological issues in the context of the study population, research design, and data collection. Critically evaluates dietary assessment literature. Topics include: variation in diet, advantages and limitations of different dietary assessment techniques, study design, development of food frequency questionnaires, nutrient biomarkers, and assessment of anthropometric measures and physical activity. Prerequisite: Basic nutrition course.

**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.**

Laboratory focusing on the implementation and evaluation of strategies to address community health issues identified and analyzed in NUTR 531. Service learning course. Prerequisite: 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 556. Nutritional Applications in Lifestyle Intervention. 3 Units.**

Review of literature on the basic nutrients, protein, fat, carbohydrate, vitamins, minerals, and water. Develops skills to analyze, evaluate, and prescribe dietary intake for weight loss, weight maintenance, and weight gain. Reviews current dietary guidelines and pertinent food components relative to their health effects. Trains in skills, tools, and strategies for effective nutrition education. Practical training in nutritional assessment and education skills for lifestyle interventions.

**NUTR 557. Nutrition Care Process for Diabetes and Heart Disease. 2 Units.**

Knowledge, application, and practice applying the nutrition care process and terminology in assessing patients with diabetes and heart disease; and developing critical thinking skills in identifying and documenting information available in patients' medical chart. Includes 1 unit of laboratory.

**NUTR 564. Contemporary Issues of Vegetarian Diets. 2 Units.**

Introduces scientific and social issues of vegetarian diets. Provides background information on the history and rationale of vegetarianism, as well as data on the health benefits and risks of a vegetarian diet.

**NUTR 578. Exercise Nutrition. 3 Units.**

Nutritional needs of professional and recreational athletes. The role of macro- and micronutrients and of supplements as ergogenic aids. Presents overview of current research in the areas of exercise nutrition.

**NUTR 585. Topics in Global Nutrition. 3 Units.**

Discussion of current issues of importance in international nutrition.

**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. Prerequisite: Five graduate units in nutrition; or consent of instructor.



**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 617. Preventive Nutrition I: Carbohydrates and Lipids. 2 Units.**

Critically reviews the current scientific literature to discuss topics surrounding advances in macronutrient (CHO and lipid) metabolism, discusses the role of quantity and quality of carbohydrate and fat in disease prevention, and provides the rationale and science base of its application to practice. Prerequisite: NUTR 506, NUTR 518. or equivalent.

**NUTR 618. Preventive Nutrition II: Protein, Vitamins and Minerals. 2 Units.**

Advanced study of current knowledge in nutrition and the rationale and science base of its application to practice in the prevention of disorders. Focuses on the role of proteins, vitamins, and minerals. Prerequisite: NUTR 506, NUTR 517, or equivalent.

**NUTR 619. Preventive Nutrition III: Phytochemicals. 3 Units.**

Critically review of the current scientific literature to discuss topics surrounding advances in phytochemical metabolism and foods and food groups that are phytochemical rich; and to understand their role in disease prevention.

**NUTR 620. Advanced Topics in Nutrition. 3 Units.**

Lecture and discussion of an advanced topic in nutrition bearing on the theory or practice of one aspect of the discipline. Specific content varies from year to year. May be repeated for additional credit. Topics may include: nutrigenomics and epigenetics, environment and nutrition, microbiome and diet, etc. Limited to doctoral degree students.

**NUTR 634. Concepts of Nutritional Epidemiology. 3 Units.**

Overview of nutritional epidemiology. Includes: nutritional epidemiology literature; variations in diet; advantages and limitations of diet-assessment techniques; design, development; validation of food-frequency questionnaires; nutrient biomarkers; implications of total energy intake; and, measurement error and correction. Prerequisite: STAT 521 or PHCJ 615; consent of instructor.

**NUTR 639. Research Methods in Nutrition. 2 Units.**

Introduces students to the research process related to clinical/human nutrition investigation, familiarizing them with the steps to follow as they organize their research in a logical, focused and efficient way. Covers development of a research question, a research plan, and a study design. Gives consideration to subject selection, sample size, and ethical issues. Prerequisite: STAT 521.

**NUTR 643. Advanced Applications in Nutritional Epidemiology. 2 Units.**

Applies critical thinking to the development of nutritional epidemiology research. Includes: expansion and enhancement of nutrition databases; critical appraisal of self-reported exposure and outcome data; and, access to and exploration of AHS-2 databases. Prerequisite: NUTR 634.

**NUTR 664. Vegetarian Nutrition: Person, Population, Planet. 3 Units.**

Presents and discusses the scientific and social issues related to vegetarian diets. Provides background information on the history and rationale for vegetarianism, as well as evidence for the health benefits and risks of a vegetarian diet. A forum in which to discuss personal attitudes and lifestyle approaches to vegetarianism. For doctoral students only.

**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. 1,2 Unit.**

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 694. Research. 1-12 Units.**

Independent research for doctoral degree candidates and qualified master's degree students on problems currently being studied in the program, or in other programs(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.**

Preparation of 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 697. Dissertation Proposal. 1-10 Units.**

Doctoral student develops a written dissertation proposal and works in collaboration with the dissertation committee chair on mutually agreed-upon objectives that will provide the basis for evaluation. Culminates in a written and oral dissertation proposal defense and advancement to candidacy. Prerequisite: NUTR 697 and advancement to candidacy.

**NUTR 698. Dissertation. 1-14 Units.**

Student prepares manuscript presenting results of doctoral research study. Limited to doctoral degree students.

**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 501. Professional Foundations I. 3 Units.

Provides foundational understanding of the philosophical and historical underpinnings of the occupational therapy profession as well as the unique role and therapeutic use of occupation across multiple settings. Introduces 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. Prerequisite: AHCJ 510.

### 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 life span. 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. Prerequisite: OCTH 501.

### OCTH 503. Professional Foundations III. 1 Unit.

Explores service delivery models to meet societal health and participation needs. Includes basic business elements of occupational therapy practice, grant writing, and the teaching and learning process. Prerequisite: OCTH 501, OCTH 502.

### OCTH 504. Professional Foundations IV. 1 Unit.

Continues to explore foundational knowledge in occupational therapy practice. Includes basic elements of grant writing to support scholarship and program development in traditional and innovative areas.

### 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. Prerequisite: OCTH 506.

### OCTH 508. Splinting. 1 Unit.

Design and fabrication of splints, with reference to various populations across the life span. Emphasizes safety precautions and monitoring. Prerequisite: OCTH 505.

### OCTH 509. Design and Technology. 2 Units.

Introduces a broad spectrum of assistive technologies which address the gap in occupational performance. Examination and assessment of theoretical and societal issues, population and policy trends, scientific advances, environmental constraints, and funding opportunities. Explores principles of universal design and public policy that support engagement in 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. AHCJ 510.

### OCTH 511. Conditions in Occupational Therapy: Orthopedic. 4 Units.

Common orthopedic and rheumatological disorders, and the implications for participation in occupations across the life span. Introduces safety issues surrounding these disorders, as well as the influence of contexts. Prerequisite: AHCJ 510; OCTH 510.

### OCTH 512. Conditions in Occupational Therapy: Neuroscience. 4 Units.

Reviews common neurological disorders and the implications for participation in occupations across the life span. Examines guiding theories and evidence-based practice. Introduces safety issues surrounding these disorders, as well as the influence of contexts. Prerequisite: OCTH 506.

### OCTH 513. Professional Foundations III: Documentation. 1 Unit.

Introduces occupational therapy billing, codes, reimbursement, and documentation in traditional and non-traditional settings to prepare students for billable services in various settings. Prerequisite: OCTH 501, OCTH 502.

### 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 life span. 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 life span 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. Prerequisite: OCTH 510.

### 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. 3 Units.

Assesses common orthopedic conditions, including 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. 3 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: Neuroscience. 3 Units.**

Introduces assessment of clients with common neurological disorders such as changes in cognitive, visual/perceptual, balance, and coordination skills. Includes conditions' impacts on participation in occupations. Addresses safety and adaptation of tools, techniques, and the environment to client needs. Emphasizes treatment planning based on the synthesis of evaluation findings and safety considerations of clients' conditions and contexts.

**OCTH 524. Analysis and Intervention: Infants, Children, Youth. 3 Units.**

Introduces analysis and treatment planning for common diagnoses and conditions of infants, children, and youth. Emphasizes design and coordination of evidence-based, client-centered interventions. Design and coordination of groups and family-centered care. Applies wholistic approach in working with clients to promote health and participation in a variety of contexts. Prerequisite: OCTH 502.

**OCTH 527. Analysis and Intervention: General Medicine. 3 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 and to provide patient and family training; as well as ability to adapt tools, techniques, and environment.

**OCTH 530. Introduction to Neuro Theories and Techniques. 1 Unit.**

Includes evidence-based current rehabilitation trends and best practices 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. Prerequisite: OCTH 506.

**OCTH 534. Introduction to Sensory Processing. 1,2 Unit.**

Explores Ayres Sensory Integration theory and practice, assessment, and intervention to enable understanding and implementation of sensory integration and sensory processing through life span. Provides skill sets that occupational therapy practitioners use to promote roles and participation in areas of occupation such as activities of daily living, play, sleep, and education. M.O.T. students register for 2 units and O.T.D. students register for 1 unit.

**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. 2,3 Units.**

Provides an overview of current trends in the field of occupational therapy and health care. Topics may include issues related to health-care funding, policy, emerging practice areas, and health disparities. M.O.T. students register for 3 units and O.T.D. students register for 2 units.

**OCTH 551. Occupation and Wellness. 2 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. Preparation for national certification examination.

**OCTH 560. Occupational Therapy Advocacy and Leadership. 3 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. Introduces roles and responsibilities of leadership; and explores standards of practice, supervision, and advocacy options for populations and the profession.

**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 574. Critical Inquiry and 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 and 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 and Evidence-based Practice IV. 2,3 Units.**

Requires students to implement a scholarly research proposal by systematically analyzing data relevant to occupational therapy practice. Emphasizes synthesis of findings and writing a scholarly paper. M.O.T. students register for 3 units and O.T.D. students register for 2 units. Prerequisite: OCTH 574, OCTH 575.

**OCTH 580. Capstone Planning I. 1 Unit.**

Provides an overview of the capstone experience and project. Discusses the purpose and objectives of the capstone. Initiates the capstone proposal. Prerequisite: OCTH 516, OCTH 527. Corequisite: OCTH 721.

**OCTH 581. Capstone Planning II: Proposal. 1 Unit.**

Develops capstone proposal and alignment with program and profession. Identifies learning objectives and mentor. Prerequisite: OCTH 580, OCTH 721.

**OCTH 582. Capstone Experience & Project I. 3 Units.**

Develops capstone experience in an individualized area. Student initiates 14-week capstone experience. Prerequisite: OCTH 580, OCTH 581, OCTH 721, OCTH 722.

**OCTH 583. Capstone Experience & Project II. 6 Units.**

Develops capstone experience in an individualized area. Student initiates 14-week capstone experience. Prerequisite: OCTH 582.

**OCTH 585. Teaching and Learning Lab. 1 Unit.**

Applies concepts of education and teaching giving students opportunities to serve as teaching assistants and mentors as well as develop curriculum and engage in assessment. Supports future roles as fieldwork educators and faculty. Prerequisite or concurrent: OCTH 605.

**OCTH 586. Business & Entrepreneurship. 2 Units.**

Introduces business for occupational therapy practitioners, including financial statements and budgetary processes, marketing, management, and consultation. Provides foundational skills for entrepreneurship and private practice. Prerequisite: OCTH 560.

**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. Prerequisite: OCTH 601.

**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 632. Capstone I: Introduction to Theory & Research. 4 Units.**

Introduces theoretical foundations and designs for research. Emphasizes skills necessary to plan and develop an independent research study. Grant-writing instruction for funding of capstone projects. Students design their capstone experience with guidance from the primary course instructor: identification of a focus area, objectives, goals, outcomes, onsite instructor, faculty mentor, and time frame.

**OCTH 633. Capstone Proposal: IRB or Program Development. 4 Units.**

Reflective discussions of research interests and experiences; and, proposed research design, planning, conceptual framework, methodology, and data analysis as preparation for development and eventual implementation of a research proposal or capstone activity. Focus on Institutional Review Board training and successful proposal submission. Prerequisite: OCTH 632.

**OCTH 634. 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. Individual projects and activities vary.

**OCTH 635. Capstone III. 4 Units.**

Implements capstone approved in OCTH 634. Critical discussion of experiences and problem solving with classmates.

**OCTH 636. Capstone IV. 4 Units.**

Completes implementation aspects of capstone. Initiates preparation of a manuscript and participation in online critical discussions with classmates.

**OCTH 637. Professional Publication and Dissemination. 4 Units.**

A culmination course in which students reflect on their capstone experiences and complete their program development. Students prepare a professional manuscript to be submitted for publication. Critical discussion with peers regarding knowledge transference to impact individuals, society, the profession, and clinical practice. Prerequisite: OCTH 636.

**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 in Occupational Therapy Practice. 1 Unit.**

Explores philosophy of service and role of service learning to support student learning, reflection, sustainability, and community engagement. Encourages cultural competence and integrity in working with diverse populations. Explores community contexts and needs in regard to health, lifestyle, and wellness. Prerequisite: AHCJ 510.

**OCTH 702. Service Learning I. 3 Units.**

Service learning experiences utilize active learning strategies that involve students in experience, reflection, sustainability, and civic engagement. Emphasizes needs assessment. Encourages collaboration with community partners and addresses the needs of the community through the development of the service learning project. Develops critical thinking and team-based learning skills.

**OCTH 703. Service Learning II: Level I Fieldwork. 3 Units.**

Supervised psychosocial fieldwork experience building on the service-learning project. Emphasizes application of knowledge, intervention planning and implementation, and outcome assessment. Encourages collaboration with community partners, and addresses needs of the community through the development of a service learning project. Develops critical thinking and practice skills. Prerequisite: OCTH 702.

**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. 1 Unit.**

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. 1 Unit.**

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.**

Covers current topics in oral and maxillofacial surgery, and practice management during weekly seminars and monthly grand rounds by experts in their respective fields.

**OMFS 605. Integrated Orthodontic and Surgical Correction of Dentofacial Deformities. 1 Unit.**

Addresses preoperative diagnosis, planning, intraoperative procedures, and postoperative care of orthognathic patients. Includes: congenital and developmental deformities; surgical-orthodontics patient management; preoperative skeletal, dental, and soft-tissue analyses; and cephalometric analysis in treatment planning.

**OMFS 606. Applied Surgical Anatomy. 1 Unit.**

Applies anatomic principles involved in clinical diagnosis and in assessing clinical problem areas. Discusses anatomic consequences of surgical and treatment procedures and the anatomic aspects of emergencies occurring in practice. Emphasizes the vascular supply and neuroinnervation of structures of the oral cavity, and adjacent areas of the head and neck.

**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.**

Addresses oral and maxillofacial surgery with emphasis on 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.

**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.**

Expands critical decision-making skills in patient care. Reviews data gathering, treatment alternatives, treatment of complications, and outcome assessment analysis.

**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 their research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

**OMFS 698. Thesis. 1 Unit.**



## 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 756. Radiology III: Oral & Maxillofacial Radiology. 1.5 Unit.**

Presents an orderly and sequential approach to the formulation of a radiographic differential diagnosis. Establishes a working diagnosis based on the radiographic findings of patients affected by lesions or conditions involving the teeth, jaws and adjacent oral anatomy. A differential diagnosis is obtained by including or excluding certain lesions or conditions based on their radiographic manifestations and clinical presentation.

#### **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. Special Care Dentistry. 1 Unit.**

Instruction in the multidisciplinary medical and dental assessment and management of older adults. Includes clinical experience in a multidisciplinary team setting.

#### **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.

## 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. Speech, Language, Breathing, and Orofacial Myofunction. 1 Unit.**

Studies areas related to speech, language, breathing, and behavior affecting the orofacial complex and 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 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.

## 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 and 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 whole body considerations for the kinetic effects, including gait, ADL, occupational and recreational functions.

**ORPR 323. Economics, Business Management, and Entrepreneurship. 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.

**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 spinal anatomy, biomechanics, and pathology. Fabrication, fitting, and application of orthotics following critical and differential diagnoses. Application and proper fitting of halos and cervical, thoracolumbar, and lumbar devices. Special consideration of design, plaster casting techniques, and CAD measurements for management of scoliosis. Interpret standard radiographs, measure and interpret spinal deformities, and recommend appropriate orthotic management.

**ORPR 402. Pathology I. 3 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.

**ORPR 404. Materials Science in Orthotics and Prosthetics. 3 Units.**

Introduces the science of materials found in the body and those used to support the body. Includes the composition of common orthopedic and prosthetics materials. Overview of mathematics, physics, simple and complex movement, anatomy, physiology, and thermodynamics which create a rationale behind material and fabrication choices. Addresses chemical composition, stress-strain curves, fatigability, and other essential characteristics considered in orthotic and prosthetic design.

**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 their 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 414. Kinesiology I. 3 Units.**

Introduces advanced kinesiology topics, including movement science dealing with the behavioral basis of motor control and motor learning from an information-processing perspective. Kinesiology from an O&P perspective focusing primarily on the lower limbs, with some introduction to upper limb involvement.

**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.**

Etiology of transfemoral amputations. Surgical and immediate postoperative issues related to patient experience, prosthetic outcome, and potential for gait. Prosthetic component selection, socket interface, and suspension designs addressing ambulation levels and activities. Specialty applications. Mechanical, hydraulic, and electronic knee-motion control. Cost and efficiency calculations. CAD/CAM shape capture and fabrication considerations such as mechanical and electronic alignment capture.

**ORPR 425. CAD/CAM Technologies. 3 Units.**

Applications of CAD/CAM technologies used in clinical practice. Use of most common shape/image capture systems, manipulations, and interfaces with the various central fabrication methods. Includes use of CADs/CAMs in orthotics and prosthetics, including foot orthoses, spinal orthoses, cranial helmets and prosthetic limbs. Data storage and manipulation for use in the fabrication process with technical assistance.

**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 439. Computers and Electronics for O&P Clinicians. 3 Units.**

Basic theory of electricity, transistors, computer circuits, and computer programming. Discusses electrons, structure of the atom, resistance, capacitance, Ohm's law, and basic transistor theory. Windows programming. Includes laboratories and three programming assignments.

**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. 1.5 Unit.**

Introduces the scientific method in health science research. Focuses on 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 allied health fields, development of a research proposal, pilot testing, testing and data forms, and research implementation in a practice setting. Prerequisite: AHRM 471, AHRM 472.

**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 507. Anatomy for O and P Professionals. 2 Units.**

Explores anatomy related to skeletal, circulatory, nerve, and muscular systems of the human organism. Addresses anatomical concepts and terminology with relevant joint mechanics, motions, and palpations. Discusses medical effects of procedures and pathologies on body systems. Introduces anatomical considerations for the formulation and implementation of orthotic and prosthetic intervention. Corequisite: ORPR 508.

**ORPR 508. Physiology for O and P Professionals. 2 Units.**

Covers basic chemistry and cell structure, tissue types, and body systems, including skin, muscle, skeleton, nervous, cardiac, respiratory, digestive, and urinary systems, as well as the integration of these systems. Discusses relationships between body systems, and orthotic and prosthetic intervention. Introduces physiological considerations for the formulation and implementation of orthotic and prosthetic intervention. Corequisite: ORPR 507.

**ORPR 509. Pathology for O and P Professionals. 2 Units.**

Presents fundamental mechanisms of disease, including cell injury (inflammation, repair, regeneration, and fibrosis), and vascular, cardiac, respiratory, gastrointestinal, hepatobiliary, urinary, reproductive, endocrine, and integumentary pathologies. Emphasizes orthopedic, neurological, neuromuscular, vascular, and psychological disorders and diseases commonly encountered in orthotic and prosthetic practice. Prerequisite: ORPR 507, ORPR 508.

**ORPR 510. Advanced Clinical Rotations. 1 Unit.**

Clinical experience focusing on familiarization with specific orthotic and prosthetic services. Supervised experience providing comprehensive orthotic and prosthetic clinical care. Opportunities to report in clinical, professional, and private sector settings.

**ORPR 511. Spinal Orthotics. 2 Units.**

Examines spinal anatomy, biomechanics, pathology, clinical assessment, measurement, shape capture, fabrication, and fitting techniques for spinal orthotic intervention. Interprets radiographs for spinal deformities. Considers design, management, and treatment with scoliosis devices. Includes cranial remolding orthosis, facial fracture, and burn orthosis. Covers prefabricated, custom-fit, and custom-fabricated orthotic designs. Introduces CAD/CAM technologies for image capture and fabrication. Prerequisite: ORPR 507.

**ORPR 512. Spinal Clinical Training. 2 Units.**

Applies concepts addressed in ORPR 511 in a clinical setting to perform spinal orthotic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of spinal orthotic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to spinal orthotic devices. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Corequisite: ORPR 513. Prerequisite or concurrent: ORPR 511.

**ORPR 513. Spinal Technical Skills. 2 Units.**

Applies material and mechanical principles to designing and fabricating patient-specific devices. Addresses safety, alignment, and durability needs of spinal user. Utilizes multiple lab and technical skills (plaster modifications, vacuum forming, plastic smoothing, riveting, and metal bending). Expands knowledge of applied anatomy in fitting of spinal orthotics. Assesses device fit/function as well as effects on patient daily living activities. Implements CAD/CAM shape capture methods. Corequisite: ORPR 512. Prerequisite or concurrent: ORPR 511.

**ORPR 514. Clinical Affiliation. 8 Units.**

Establishes a clinical affiliation with a facility that complies with NCOPE residency standards and that has been approved by the Professional Development Committee and the 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 516. Orthotics and Prosthetics Materials Science and Technical Skills. 2 Units.**

Provides foundational knowledge in mathematics, physics, simple and complex movement, anatomy, physiology, and thermodynamics to create rationale behind material and fabrication choices associated with manufacture of custom orthotic and prosthetic devices. Examines the science of materials and safety practices of orthotics and prosthetics design, fabrication, and repairs.

**ORPR 517. Patient Assessment/Kinesiology. 2 Units.**

Expands on knowledge and techniques of applied anatomy, physiology, and kinesiology to assess a patient's need of orthotic and prosthetic devices. Identifies and practices essential elements of the patient evaluation process. Demonstrates procedures for collection of patient history, performance of physical examination, and administration of outcome measures. Introduces scope of practice and documentation methods for orthotics and prosthetics professionals. Corequisite: ORPR 507.

**ORPR 519. Biomechanical Evaluation and Gait Analysis. 2 Units.**

Covers basic biomechanical principles in the context of normal body mechanics. Establishes baseline knowledge for effective evaluation planning for orthotic and prosthetic care. Examines how interventions maximize healing, manage pain, and support movement and function to the whole body, while considering kinetic effects to gait. Contrasts advanced gait analysis of normal human locomotion with pathological gait to determine proper intervention.

**ORPR 522. Self-Care Portfolio and Community Outreach. 2 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 524. Psychosocial Aspects of Health Care. 2 Units.**

Addresses psychosocial topics which optimize therapeutic outcomes. Focuses on clinical competence and professional excellence involving health-care providers affected by pathology, impairment, functional limitation, and/or disability. Recommends roles and intervention strategies for health-care providers, including those practicing orthotics and prosthetics.

**ORPR 526. Prosthetics III. 3 Units.**

Focuses on upper and lower limb amputations and prosthetics. Etiology of hip and transcorporectomy amputations, surgical and immediate postoperative issues related to patient experience, prosthetic outcome, and potential for gait. Includes care of the extreme sports amputee, socket interface, suspension designs, skin and tissue physiology, and mechanical and hydraulic knee-motion control. Introduces CAD/CAM shape capture, and fabrication considering mechanical and electronic alignment capture.

**ORPR 527. Orthotics III. 3 Units.**

Advanced study of myoelectric and electronic control to upper extremity and lower extremity 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 528. Prosthetics IV. 3 Units.**

Reviews case presentations of transtibial and transfemoral amputations. Advanced and alternative socket designs, interface materials, suspension systems, and fabrication techniques; and, shape capture techniques, cast modification, socket fitting techniques, fabrication, static and dynamic alignment, alignment transfer, and observational gait analysis. Prerequisite: ORPR 340, ORPR 420, ORPR 526.

**ORPR 529. Practice Management. 2 Units.**

Studies business practices within the orthotic and prosthetic clinical environment relating to patient care, personnel, financial management, and law as they apply to health-care settings. Explores expectations of orthotists-prosthetists as professionals and their role within society—including scopes of practice and the Code of Professional Responsibility.

**ORPR 530. Patient Management and Documentation. 2 Units.**

Practices communication of treatment plan through ethical documentation, coding, prescription recommendations, compliance with regulatory accrediting agencies, and legal considerations surrounding patient care. Explores billing and coding procedures for federal, state, and third-party regulations associated with orthotic/prosthetic care. Studies professional issues such as scopes of practice, Code of Professional Responsibility, and the role of the orthotist-prosthetist on the health-care team.

**ORPR 531. Upper-Extremity Orthotics. 2 Units.**

Examines upper limb anatomy, biomechanics, pathology, clinical assessment, measurement, shape capture, fabrication, and fitting techniques for orthotic intervention. Considers function and purpose of static and dynamic thermoplastic and conventional upper-extremity orthotic interventions. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Prerequisite: ORPR 507.

**ORPR 532. Upper-Extremity Orthotics Clinical Training. 2 Units.**

Applies concepts addressed in ORPR 531 in a clinical setting to perform upper-extremity orthotic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of upper-extremity orthotic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to upper-extremity orthotic devices. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Prerequisite: ORPR 531. Corequisite: ORPR 533.

**ORPR 533. Upper-Extremity Orthotics Technical Skills. 2 Units.**

Applies material and mechanical principles to designing and fabricating patient-specific devices. Addresses safety, alignment, and durability needs of the upper-extremity orthotic user. Utilizes multiple lab and technical skills such as plaster modifications, vacuum forming, plastic smoothing, riveting, and metal bending. Expands knowledge of applied anatomy in the fitting of upper-extremity orthotics. Assesses device fit/function and effects on the patient's activities of daily living. Prerequisite: ORPR 531. Corequisite: ORPR 532.

**ORPR 535. Upper-Extremity Prosthetics. 2 Units.**

Studies etiology, anatomy, biomechanics, clinical assessment, measurement, shape capture, fabrication, fitting techniques, and component selection for upper-limb and forequarter amputations. Considers 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. Gives attention to the distinctions of functionality, efficacy, and cost. Prerequisite: ORPR 507.

**ORPR 536. Upper-Extremity Prosthetics Clinical Training. 2 Units.**

Applies concepts covered in ORPR 535 in a clinical setting to perform upper-extremity prosthetic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of upper-extremity prosthetic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to upper-extremity prosthetic devices. Compares body-powered and external-powered prosthetic control principles. Prerequisite: ORPR 535. Corequisite: ORPR 537.

**ORPR 537. Upper-Extremity Prosthetics Technical skills. 2 Units.**

Applies material and mechanical principles to design and fabricate patient-specific devices. Addresses safety, alignment, and durability needs of the upper-extremity prosthetic user, utilizing multiple lab and technical skills such as plaster modifications, vacuum forming, plastic smoothing, riveting, and lamination. Expands knowledge of applied anatomy in fitting upper-extremity prosthetics. Assesses device fit/function and the effects on the patient's activities of daily living. Prerequisite: ORPR 535. Corequisite: ORPR 536.

**ORPR 538. Biomechanics. 3 Units.**

Development of competencies in biomechanics. 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 541. Lower-Extremity Orthotics I. 2 Units.**

Teaches biomechanical orthotic interventions of the foot and ankle from an anatomical design. Covers criteria for orthotic design, material selection, fitting, and outcome measures for specific pathological applications of orthotic intervention. Gives awareness of implied benefits, risks, and effects of orthotic intervention for the foot and ankle to the kinematics and kinetic chain of the body. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Prerequisite: ORPR 507.

**ORPR 542. Lower-Extremity Orthotics I Clinical Training. 2 Units.**

Applies concepts addressed in ORPR 541 in a clinical setting to perform lower-extremity orthotic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of lower-extremity orthotic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to lower-extremity orthotic devices. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Prerequisite: ORPR 541. Corequisite: ORPR 543.

**ORPR 543. Lower-Extremity Orthotics I Technical Skills. 2 Units.**

Applies material and mechanical principles to design and fabricate patient-specific devices. Addresses safety, alignment, and durability needs of the lower-extremity orthotic user, utilizing multiple lab and technical skills such as plaster modifications, vacuum forming, plastic smoothing, riveting, and metal bending. Expands knowledge of applied anatomy in the fitting of lower extremity orthotics. Assesses device fit/function and the effects on the patient's activities of daily living. Prerequisite: ORPR 541. Corequisite: ORPR 542.

**ORPR 544. Applied Functional Neuroanatomy. 3 Units.**

Evidence-based coverage of the applied functional neuroanatomy of several common adult progressive and nonprogressive neurological diseases. Emphasizes motor control, stroke, traumatic brain injury, spinal cord injury, multiple sclerosis, Parkinson's disease, Guillian-Barre syndrome, amyotrophic lateral sclerosis, and vestibular pathology. Includes literature review, lecture, discussion, and laboratory sessions.

**ORPR 545. Lower-Extremity Prosthetics I. 2 Units.**

Studies etiology, anatomy, biomechanics, clinical assessment, measurement, shape capture, fabrication, fitting techniques and component selection for transtibial and partial foot amputations. Explains determination of functional level and justification for prosthetic components. Investigates socket design, interface materials, suspension systems, static and dynamic alignment, and observational gait analysis. Offers distinctions of functionality, efficacy, and cost. Prerequisite: ORPR 507, ORPR 519.

**ORPR 546. Lower-Extremity Prosthetics I Clinical Training. 2 Units.**

Applies concepts addressed in ORPR 545 in a clinical setting to perform lower-extremity prosthetic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of lower-extremity prosthetic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to lower-extremity prosthetic devices. Prerequisite: ORPR 545. Corequisite: ORPR 547.

**ORPR 547. Lower-Extremity Prosthetics I Technical Skills. 2 Units.**

Applies material and mechanical principles to design and fabricate patient-specific devices. Addresses safety, alignment, and durability needs of the lower-extremity prosthetic user. Utilizes multiple lab and technical skills such as plaster modifications, vacuum forming, plastic smoothing, riveting, and lamination. Expands knowledge of applied anatomy in the fitting of lower extremity prosthetics. Assesses device fit/function and the effects on the patient's activities of daily living. Prerequisite: ORPR 545. Corequisite: ORPR 546.

**ORPR 548. Pharmacology in Rehabilitation. 2 Units.**

Discusses principles of pharmacology 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.

**ORPR 551. Lower-Extremity Orthotics II. 2 Units.**

Teaches biomechanical orthotic interventions of the hip, knee, ankle, and foot from an anatomical design. Covers criteria for orthotic design, material selection, fitting, and outcome measures for specific pathological applications of orthotic intervention. Provides advanced study of knee-ankle-foot orthoses, knee orthoses, hip orthoses, reciprocating gait orthoses, and standing frames. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Prerequisite: ORPR 507, ORPR 519.

**ORPR 552. Lower-Extremity Orthotics II Clinical Training. 2 Units.**

Applies concepts addressed in ORPR 551 in a clinical setting to perform lower-extremity orthotic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of lower-extremity orthotic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to lower-extremity orthotic devices. Includes prefabricated, custom-fit, and custom-fabricated orthotic designs. Prerequisite: ORPR 551. Corequisite: ORPR 553.

**ORPR 553. Lower-Extremity Orthotics II Technical Skills. 2 Units.**

Applies material and mechanical principles to design and fabricate patient-specific devices. Addresses safety, alignment, and durability needs of the lower-extremity orthotic user, utilizing multiple lab and technical skills such as plaster modifications, vacuum forming, plastic smoothing, riveting, and metal bending. Expands knowledge of applied anatomy in the fitting of lower-extremity orthotics. Assesses device fit/function and the effects on the patient's activities of daily living. Prerequisite: ORPR 551. Corequisite: ORPR 552.

**ORPR 555. Lower-Extremity Prosthetics II. 2 Units.**

Studies etiology, anatomy, biomechanics, clinical assessment, measurement, shape capture, fabrication, fitting techniques, and component selection for tranfemoral, hip disarticulation, and hemipelvectomy amputations. Explains determination of functional level and justification for prosthetic components. Investigates socket design, interface materials, suspension systems, static and dynamic alignment, and observational gait analysis. Introduces CAD/CAM technologies. Prerequisite: ORPR 507, ORPR 519.

**ORPR 556. Lower-Extremity Prosthetics II Clinical Training. 2 Units.**

Applies concepts addressed in ORPR 555 in a clinical setting to perform lower-extremity prosthetic management. Analyzes impairments, functional limitations, and patient goals to determine biomechanical objectives. Demonstrates formulation and implementation of lower-extremity prosthetic care. Practices patient assessment, shape capture, fitting procedures, and patient management related to lower-extremity prosthetic devices. Prerequisite: ORPR 555. Corequisite: ORPR 557.



**ORPR 557. Lower-Extremity Prosthetics II Technical skills. 2 Units.**

Applies material and mechanical principles to design and fabricate patient-specific devices. Addresses safety, alignment, and durability needs of the lower-extremity prosthetic user, utilizing multiple lab and technical skills such as plaster modifications, vacuum forming, plastic smoothing, riveting, and lamination. Expands knowledge of applied anatomy in the fitting of lower-extremity prosthetics. Assesses device fit/function and the effects on the patient's activities of daily living. Prerequisite: ORPR 555. Corequisite: ORPR 556.

**ORPR 558. Clinical Rotation. 1 Unit.**

Assigns student to a weekly clinic, department, or specialty with a focus on familiarization with specific orthotic and prosthetic services. Students report to cohorts in a monthly didactic presentation during 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 559. Advanced Clinical Rotation. 1 Unit.**

Provides clinical experiences to familiarize students with specific orthotic and prosthetic services, as well as supervised experience with comprehensive orthotic and prosthetic clinical care. Gives opportunities to observe, participate in, and demonstrate entry-level competencies learned in didactic and clinical curriculum. Requires a monthly didactic student presentation during weekly grand rounds, which can include lectures from industry providers on the topic of choice.

**ORPR 560. Clinical Affiliation. 8 Units.**

Requires clinical experience (500 clinical contact hours) in a recognized NCOPE residency facility. Placement must be approved by the Professional Development Committee and the M.S.O.P. locally assigned site supervisor.

**ORPR 561. Statistics and Research for OP Professionals I. 2 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. Introduces students to appropriate descriptive statistics and graphs for the different levels of measurement, probability concepts, and the binomial and normal distributions.

**ORPR 562. Statistics and Research for OP Professionals II. 2 Units.**

Provides advanced conceptual frameworks, data analyses, and techniques in quantitative and qualitative research. Emphasizes process for obtaining and using evidence-based research in OP clinical practice. Prerequisite: ORPR 561.

**ORPR 564. Research Proposal. 2 Units.**

Introduces the scientific method in health science research. Focuses on 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 allied health fields, development of a research proposal, pilot testing, testing and data forms, and research implementation in a practice setting. Prerequisite: ORPR 561, ORPR 562.

**ORPR 565. OP Clinical and Technical Summative Review and ABC Board Prep. 2 Units.**

Reviews concepts of upper-extremity, lower-extremity, and spinal orthotics and prosthetics clinical and technical skills in preparation for the ABCOP national written simulation and clinical patient management (CPM) exams.

**ORPR 566. OP Theoretical Summative Review and ABC Board Prep. 2 Units.**

Reviews theoretical concepts of upper-extremity, lower-extremity, and spinal orthotics and prosthetics in preparation for the ABCOP national combined OP written multiple-choice exam.

**ORPR 575. Couples, Families, and Disabilities. 3 Units.**

Examines the effects disabilities have on couples and family systems, and contributions family members make to the rehabilitation process of individuals with disabilities. Looks at discourse patterns taking place within a person with a disability, within the person's family and social support system, and among the individual, family, and medical and rehabilitation providers. Addresses the issues of human sexuality, reproduction, and disability.

**ORPR 592. Research II. 1.5 Unit.**

Guides and equips students as they work toward completion of their capstone research thesis, which is presented at the annual Capstone Research Day. Includes data-collection review and completion, APA-style formatting rules, data analysis with application of appropriate statistics, graphing, write up of discussion and results.

**ORPR 593. Research III. 3 Units.**

Culminates all research-track courses in a project comprising a master's degree thesis, a research paper, a presentation, and a poster. Includes data analysis and statistical interpretation.

## 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 501. Anatomy and Pathology I. 4 Units.**

A systems-based approach to the study of human anatomy utilizing cadaver dissection, correlating gross and microscopic anatomy and associated pathologies.

**PATH 502. Anatomy and Pathology II. 4 Units.**

A systems-based approach to the study of human anatomy utilizing cadaver dissection, correlating gross and microscopic anatomy and associated pathologies.

**PATH 517. Human Systemic Pathology. 9.5 Units.**

Application of basic science principles to patient care. Introduction to important diseases and anomalies of each human organ system and their impacts on patients. Emphasizes etiologies, pathogeneses, macroscopic and microscopic morphologic features, pathophysiologies, biologic behaviors, and relevant laboratory findings. Addresses analytical thinking, productive skills of cooperation among team members, and appropriate use of laboratory testing.

**PATH 521. Anatomical Techniques I. 3 Units.**

Designed specifically for pathologists' assistant students. Comprehensive coverage of surgical and autopsy pathology techniques. Incorporates histology and medical terminology, including clinical and pathological correlations.

**PATH 522. Anatomical Techniques II. 3 Units.**

Designed specifically for pathologists' assistant students. Comprehensive coverage of surgical and autopsy pathology techniques. Incorporates histology and medical terminology, including clinical and pathologic correlations.

**PATH 524. Clinical Microbiology for Pathologists' Assistants. 3 Units.**

Studies of pathologically pertinent microbes and pathogenic mechanisms; overview of methods of identification and antibiotic sensitivities.

**PATH 534. Civic Engagement and Poverty: Service Learning. 1 Unit.**

Instructs students in working closely with community partners to examine local or international community resilience in response to poverty. Students reflect on how community members and society, as a whole, are affected and fight the effects of poverty, as well as on how a pathologists' assistant can serve a local community. Prerequisite: Matriculated Pathologists' Assistant Student, PGY 1.

**PATH 551. Disease Mechanisms I. 3 Units.**

Comprehensive study of mechanisms of disease and clinical correlations, based on Robbins' Pathologic Basis of Disease.

**PATH 552. Disease Mechanisms II. 3 Units.**

Builds on the basic courses in the pathologists' assistant curriculum. Requires students to use critical-thinking skills in the participatory discussion sessions. Prepares students for clinical practicum experiences.

**PATH 564. Biomedical Photography. 1 Unit.**

Investigates the use of digital cameras, scanners, Adobe®, photomicrography, and macrophotography. Examines fundamental processes applied in digital photography to a wide range of specimen types.

**PATH 581. Basic Pathologic Microanatomy. 2 Units.**

Designed specifically for pathologists' assistant students. Covers normal microanatomy, including clinical correlations and grossing techniques. Lectures enhanced by multihead microscopy sessions.

**PATH 582. Advanced Microanatomy. 2 Units.**

Designed specifically for pathologists' assistant students. Covers disease states in microanatomy, including clinical correlations. Lectures enhanced by multihead microscopy sessions.

**PATH 598. Clinical Laboratory Management. 2 Units.**

Laboratory organization and examination of principles and practices of laboratory management.

**PATH 599. Directed Study. 1.5-18 Units.****PATH 644. Clinical Pathology Seminar. 2 Units.**

Provides pathologists' assistant students with an overview of clinical pathology, relating clinical testing to disease processes.

**PATH 741. Pathology Review I. 2 Units.**

An intense review of clinical and anatomical pathology theory with assigned presentations and clinical cases.

**PATH 742. Pathology Review II. 2 Units.**

An intense review of clinical and anatomical pathology theory with assigned presentations and clinical cases.

**PATH 743. Pathology Review III. 2 Units.**

An intense review of clinical and anatomical pathology theory with assigned presentations and clinical cases.

**PATH 744. Pathology Review IV. 2 Units.**

An intense review of clinical and anatomical pathology theory with assigned presentations and clinical cases.

**PATH 761. Pathologists' Assistant Practicum I. 9 Units.**

Rotations in surgical and autopsy pathology to include forensics and pediatrics in a variety of clinical settings, such as academic health centers, community hospitals, and private laboratories.

**PATH 762. Pathologists' Assistant Practicum II. 9 Units.**

Rotations in surgical and autopsy pathology to include forensics and pediatrics in a variety of clinical settings, such as academic health centers, community hospitals, and private laboratories.

**PATH 763. Pathologists' Assistant Practicum III. 9 Units.**

Rotations in surgical and autopsy pathology to include forensics and pediatrics in a variety of clinical settings, such as academic health centers, community hospitals, and private laboratories.

**PATH 764. Pathologists' Assistant Practicum IV. 9 Units.**

Rotations in surgical and autopsy pathology to include forensics and pediatrics in a variety of clinical settings, such as academic health centers, community hospitals, and private laboratories.

**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 their 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 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.

## Pediatrics (PEDS)

### Courses

**PEDS 599. Pediatrics Directed Study. 1.5-18 Units.****PEDS 701. Pediatrics Clerkship. 1.5-12 Units.**

Provides core knowledge, skills, and attitudes unique to pediatricians. Includes skills of communication and examination of pediatric patients. Emphasizes principles of health supervision, including growth, development, routine health maintenance, and recognition and treatment of illnesses and conditions commonly affecting patients from infancy through adolescence.

**PEDS 821. Pediatrics Subinternship. 1.5-6 Units.**

Experience in independently collecting patient histories, performing physical examinations, and formulating differential and primary diagnoses. Includes: identifying the reason for admission, selection of diagnostic testing based on the chief complaint, providing a family-centered approach to patient care, and identifying the need for immediate supervising physician involvement.

**PEDS 822. Pediatrics Intensive Care. 1.5-6 Units.**

Addresses history taking in patients who are critically ill or unable to communicate, recognition of relevant physical examination findings, management of critically ill patients, interactions with family members, documentation of the admission H&P or daily progress notes, and preparation of orders. Presents criteria for continued ICU admission or transfer.

**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 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.**

Addresses administration of moderate, intravenous sedation as preparation to meet or exceed requirements for certification by the California Board of Dentistry. Meets requirements for accreditation by the Commission on Dental Accreditation of the American Dental Association.

**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 their research guidance committee (RGC) for approval. Multiple registrations may be needed to complete the publishable paper.

**PERI 698. Thesis. 1 Unit.****PERI 706. Fundamentals of Periodontal Surgery—Techniques and Instrumentation. 2 Units.**

Introduces rationale, fundamental techniques, and instrumentation of periodontal surgery. Close seminar and clinic instruction and direct “one-on-one” teaching and learning of the salient aspects of periodontal surgery, using patients receiving treatment.

**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 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.

## Pharmaceutical Sciences (RXPS)

### Courses

**RXPS 501. Pharmaceutical Calculations. 2 Units.**

Presents foundational mathematical principles concerned with the formulation, preparation and effectiveness of pharmaceutical dosage forms and dispensing of prescription medication commonly seen in a variety of practice settings.

**RXPS 502. Pharmaceutics I. 4 Units.**

Addresses the study and application of physical and chemical principles to the development, preparation, and stabilization of pharmaceutical dosage forms. Also included is a study of biological and physicochemical factors that influence availability of a drug from dosage form and subsequent disposition and response of the drug in the body.

**RXPS 503. Pharmaceutics II. 3 Units.**

Studies the mathematical, physicochemical, and biological principles involved in the design, preparation and effectiveness of pharmaceutical dosage forms employed for various routes of administration.

Prerequisite: RXPS 502.

**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. Prerequisite: RXPS 501. Corequisite: RXPS 502.

**RXPS 516. Pharmaceutics Laboratory II. 0.5 Units.**

Continues RXPS 515.

**RXPS 541. Foundations of Biomedical Science I. 4 Units.**

Foundational biological, chemical, physiological, and pharmacological principles related to drug action, wellness, and disease. Focuses on the roles that proteins play in enzymatic catalysis, gene regulation, pharmacogenomics, membrane transport, signal transduction, drug toxicity, and the physiology and pharmacology of neurons and myocytes.

**RXPS 542. Foundations of Biomedical Science II. 4 Units.**

Pharmacologic basis for drug treatment of diseases of the nervous, respiratory and endocrine systems. Addresses basic physiologic principles and the pathophysiology of key pathways of all three systems. Themes include: molecular and cell physiology, drug receptor physiology, transporters, asthma, ventilation-perfusion mismatch, lung function changes in obstructive and restrictive lung diseases, diabetes and hypothalamic and pituitary regulation of the endocrine organs.

**RXPS 543. Foundations of Biomedical Science III. 4 Units.**

Presents foundational principles of the pathophysiology of endocrine, cardiovascular, and renal system diseases. Focuses on the pharmacology of drugs used to treat endocrine, cardiovascular, and renal disorders.

**RXPS 544. Foundations of Biomedical Science IV. 4 Units.**

Presents foundational principles of the digestive system, the immune system, and infectious diseases. Focuses on the pharmacology of drugs used to treat digestive and immune disorders as well as bacterial and viral infections.

**RXPS 545. Foundations of Biomedical Science V. 4 Units.**

Provides foundational knowledge for understanding the pathophysiology of diseases that affect the central nervous system (CNS) and cancer—including cancer immunotherapy. Also covers the pharmacology of drugs used to treat CNS disorders and cancer.

**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. Prerequisite: Successful completion of all P1-level courses and P2; Autumn Quarter standing.

**RXPS 615. Learning and Memory. 2 Units.**

Introduces students to evidence-based, effective strategies to optimize learning and memory. Develops active learners with lifelong learning skills to promote success not only in school but also in the workplace.

**RXPS 616. Neuropsychopharmacology. 3 Units.**

Fundamentals of neuropsychopharmacology, including the functional organization of the brain, and the physiology and biochemistry of major neurotransmitters. Examines how medications and drugs of abuse affect the brain and alter behavior. Discusses common brain disorders with a focus on the mechanisms of action of drugs used for treatment.

**RXPS 617. Natural Products in Current Therapeutics. 2 Units.**

A journal club-style course in which students lead the discussion and dialogue. Explores specific cases of natural product-derived therapeutics from the history of discovery, synthesis, and biological activity to drug development and marketing. Students perform literature searches, read and summarize journal articles, present summaries of multiple articles on a similar topic, and prepare topical presentations for the class.



**RXPS 619. Nutrition and Culinary Arts. 2 Units.**

Develops basic nutrition and culinary arts skills for patient care. Addresses disease reversal, lifestyle-change programs, lifestyle medicine, culinary medicine, culinary prescription, and the whole-food plant-based diets. Includes: chronic disease classification, disease reversal research, label reading, portion size, nutrient comparisons, budgeted meal planning, and community health strategies.

**RXPS 630. Biochemical Aspects of the Obesity and Metabolic Syndrome. 2 Units.**

Explores biochemical factors related to obesity. Emphasizes the impact of these factors on currently available pharmacotherapeutic options and development of new therapies. Focuses on the role of pharmacist-guided lifestyle interventions on the treatment of obesity and metabolic syndrome.

**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. Prerequisite: RXPS 651.

**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. Prerequisite: RXPS 652.

**RXPS 710. Dietary Supplements. 2 Units.**

Introduces the use of herbals and other supplements in patient health. Topics include key regulatory and practical concerns; resources for supplement information; and evidence-based use and adverse effects of commonly used supplements for CNS, digestive, reproductive, immune, fitness, and other conditions.

**RXPS 719. Nutrition and Metabolic Syndrome. 2 Units.**

Introduces the role of nutrition, including dietary supplements, in patient health. Topics include the basics of nutrition and nutritional adequacy; vegetarian diets, including the Adventist Health Study; and nutritional considerations related to metabolic syndrome.

**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.**

Applies basic sciences to the selection of optimal pharmacologic and nonpharmacologic therapies. Introduction to fundamental principles of pharmacology, including pharmacodynamics and pharmacokinetics. Emphasizes drug mechanism of action, mechanism of side effects, patient-specific factors, and drug indications. Provides opportunities for self-directed learning, team building, and interdisciplinary team-based patient care.

**PHRM 554. Neuropharmacology. 4 Units.**

Systematically discusses drugs that affect primarily the nervous system, with major emphasis on mechanism of action.

**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 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 684. Special Problems in Pharmacology. 2-6 Units.**

Assignments in literature reviews and/or laboratory exercises.

**PHRM 697. Research. 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 500A. Professional Development. 1.5 Unit.**

A three-course sequence. Emphasizes professional knowledge, skills, abilities, behaviors, and attitudes required to produce a competent, practice-ready professional; and to develop a successful career in pharmacy. Focuses on well-being and professionalism/professional identity. Prerequisite: PY1 standing.

**RXRX 500B. Professional Development. 1.5 Unit.**

Continuation of RXRX 500A. Prerequisite: RXRX 500A.

**RXRX 501. School of Pharmacy Forum. 0 Units.**

Presents current topics affecting pharmacy, health care, and career paths from a multidisciplinary perspective. Offered on a weekly basis throughout the four-year program.



**RXXR 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. Prerequisite: Permission of the Office of Student Affairs; PY-1 Spring Quarter professional year standing.

**RXXR 600A. Professional Development. 1.5 Unit.**

A three-course sequence. Emphasizes professional knowledge, skills, abilities, behaviors, and attitudes required to produce a competent, practice-ready professional; and to develop a successful career in pharmacy. Focuses on health literacy. Prerequisite: PY2 standing.

**RXXR 600B. Professional Development. 1.5 Unit.**

Continuation of RXXR 600A. Prerequisite: RXXR 600A.

**RXXR 601. School of Pharmacy Forum. 0 Units.**

Presents current topics affecting pharmacy, health care, and career paths from a multidisciplinary perspective. Offered on a weekly basis throughout the four-year program.

**RXXR 700A. Professional Development. 1.5 Unit.**

A three-course sequence. Emphasizes professional knowledge, skills, abilities, behaviors, and attitudes required to produce a competent, practice-ready professional; and to develop a successful career in pharmacy. Focuses on interprofessional communication and team STEPPS. Prerequisite: PY3 standing.

**RXXR 700B. Professional Development. 1.5 Unit.**

Continuation of RXXR 700A. Prerequisite: RXXR 700A.

**RXXR 701. School of Pharmacy Forum. 0 Units.**

Presents current topics affecting pharmacy, health care, and career paths from a multidisciplinary perspective. Offered on a weekly basis through the third professional year. throughout the four-year program.

**RXXR 720. Dynamics of Power and Privilege. 1 Unit.**

Introduces the relationship between the concepts of identity, power, and privilege with structural and institutional discrimination in the United States.

**RXXR 721. Diversity, Equity, and Inclusion in Health Care. 1 Unit.**

Introduces the roles that diversity, equity, and inclusion play in health-care outcomes and disparities. Prerequisite: RXXR 720.

**RXXR 722. Diversity, Equity, and Inclusion Community Engagement Project. 1 Unit.**

Applies concepts of diversity, equity, and inclusion within the context of community engagement by the preparation of a proposal for a student-managed project addressing a health-care need within a community of the student's choice. Prerequisite: RXXR 720, RXXR 721.

**RXXR 730. Leadership in Pharmacy Education: Diversity, Equity, and Inclusion. 2 Units.**

Applies concepts of diversity, equity, and inclusion within the context of community engagement by preparation of a proposal for a student-managed project that addresses a health-care need within a community of the student's choice.

**RXXR 798. Independent Study with Faculty. 1-4 Units.**

Development of an individual research or project. Includes: description of the research or project; associated budget; and, assessment methods. May be repeated for 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, retrieval, and evaluation. Includes: forms of drug literature; primary, secondary, tertiary, and Internet resources; documentation of drug information requests; and, reporting adverse drug reactions. Discusses issues related to herbal medicine and alternative therapeutic options.

## Pharmacy Practice/Experiential Education (RXEE)

### Courses

**RXEE 580. Introductory Pharmacy Practice Experience—Community I. 3 Units.**

Introduction to pharmacy practice in a community setting. Focuses on pharmacist, technician, health-care provider, and patient interactions. Prerequisite: RXEE 690, and a valid pharmacist intern license.

**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 680. Introductory Pharmacy Practice Experience—Community II. 2 Units.**

Introduction to pharmacy practice in a community setting with emphasis on applying clinical knowledge to patient counseling and education on prescription and self-care medications. Addresses pharmacist, technician, other health-care provider, and patient interactions. Prerequisite: RXEE 580, and a valid pharmacist intern license.

**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. Prerequisite: P2 standing.

**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. Prerequisite: P3 standing.

**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 828. Advanced Pharmacy Practice Experience VIII. 6 Units.**

Immersion in clinical practice within inpatient settings. Addresses comprehensive pharmaceutical care plans within the Pharmacist Patient Care Process. Prerequisite: Successful completion of didactic courses; valid pharmacist intern license.

## Pharmacy Practice/Pharmaceutical Care (RXPC)

### Courses

**RXPC 561. Pharmaceutical Care I. 4 Units.**

First of three courses addressing pharmacy practice. Introduces the essence of being a professional and the challenges of applying these ideals. Includes: professionalism; practice philosophies; professional relationships; career paths; and, lifelong-learning in pharmacy. Incorporates study of 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 761. Pharmacy Practice I. 2 Units.**

First of three laboratory courses addressing pharmacy practice. Presents issues in contemporary pharmacy practice. Includes: roles of the pharmacist in drug-therapy management; drug-administration techniques, devices, and compounding techniques; evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management; application of appropriate communication and computer skills; and, the role of the pharmacist as a health educator.

**RXPC 762. Pharmacy Practice II. 2 Units.**

Second of three laboratory courses addressing pharmacy practice. Presents issues in contemporary pharmacy practice. Includes: roles of the pharmacist in drug-therapy management; drug-administration techniques, devices, and compounding techniques; evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management; application of appropriate communication and computer skills; and, the role of the pharmacist as a health educator.

**RXPC 763. Pharmacy Practice III. 4 Units.**

Capstone course that enhances students' skills and abilities in clinical application of knowledge, patient assessment, patient case presentation, and literature evaluation. Includes three activities that reinforce many of these skills.

## Pharmacy Practice/Therapeutics (RXTH)

### Courses

**RXTH 529. Strategies for Achieving a Successful Career in Pharmacy. 2 Units.**

Explores factors that determine job satisfaction and success in the pharmacy workplace, as well as contemporary changes in the pharmacist job market that directly affect pharmacist employability. Guides students in the development of strategies that will enable them to effectively compete in a highly competitive job market, optimizing their chances of achieving job satisfaction and success once employed.

**RXTH 560. Pharmacist-Guided Self Care. 5 Units.**

Introduces students to pathophysiology, pharmacologic, and nonpharmacologic management of conditions indicated for self-treatment. Enables students to provide patient-centered care through gathering pertinent information by patient interviewing, assessing the appropriateness of self-treatment or referral, recommending over-the-counter (OTC) products, and developing a patient-specific treatment plan—including patient education, counseling, and follow up.

**RXTH 570. Introduction to Disease Management. 2.5 Units.**

Introduces students to medical terminology, physical examination, interpretation of major diagnostic tests/laboratory results, and important patient safety considerations. Familiarizes students with various disease states—such as benign prostatic hyperplasia, urinary incontinence, glaucoma, gout, osteoarthritis, and rheumatoid arthritis. Prepares students to assess patients and determine the appropriate nonpharmacologic and pharmacologic treatment options for specific conditions.

**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 605. Advanced Diabetes Management. 2 Units.**

Advances students' knowledge and skills applicable to issues regarding personalized treatment of diabetes. Topics include lifestyle management, social issues, mental health issues, type 1 DM, type 2 DM, and diabetes management technology. Challenges students to use guidelines, literature, personalization, and professional judgment in approaching patient care.

**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 608. Viral Infections Evidence-Based Therapy. 2 Units.**

Introduces students to chronic hepatitis C virus (HCV) and human immunodeficiency virus (HIV) infections, focusing on evidence-based treatment of these viral infections. Students interpret clinical data for various available therapies that allow them to select patient-specific treatments based on evidence. Students examine issues of internal, external, statistical, and clinical validity as they relate to specific patient cases in HCV and HIV.

**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 615. Nuclear Pharmacy Concepts. 1 Unit.**

Provides an overview of nuclear pharmacy for P1, P2, and P3 students, including but not limited to: the history of nuclear medicine, an overview of radiation basics, production methods, the regulatory environment, applications of nuclear medicine, and industry direction.

**RXTH 619. Clinical Pharmacokinetic Dosing and Monitoring. 3 Units.**

Integrates the principles of pharmacokinetics—including factors affecting the absorption, distribution, metabolism, excretion, and binding of drugs—into the process of monitoring, evaluating, and adjusting a specific dosing regimen. Teaches students to interpret laboratory results, assess clinical findings, and apply pharmacokinetic principles to determine an individualized dosing regimen for a specific patient, based on drug serum concentrations and clinical circumstances.

**RXTH 671. Fluids and Electrolytes. 2 Units.**

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. Enables students to manage these disorders, establish and employ rational treatment, and provide parameters to monitor progress of recommended therapies.

**RXTH 674. Renal and Respiratory Diseases. 3.5 Units.**

Covers the pathophysiology, management, and drug therapy of conditions related to renal and respiratory diseases. Prepares students to manage renal and respiratory diseases, establish and employ rational treatment, and provide parameters to monitor progress of the regimens.

**RXTH 683. Endocrine. 3.5 Units.**

Introduces students to the pathophysiology and disease-state management of common endocrine disorders. Introduces students to pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of these common endocrine disorders. Prepares students to integrate their current knowledge and skills of therapeutics to formulate individualized therapeutic plan for patients. Prerequisite: Completion of all P1 and Autumn Quarter P2 courses.

**RXTH 684. Cardiovascular I. 3.5 Units.**

Teaches the pathophysiology, management, and drug therapy of hypertension, hyperlipidemia, and coronary artery diseases. Includes the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of these diseases. Emphasizes evidence-based medicine and national guidelines for the management of these diseases. Prepares students to determine the most appropriate treatments and monitoring parameters.

**RXTH 685. Cardiovascular II. 3.5 Units.**

Teaches the pathophysiology, management, and drug therapy of thromboembolic disorders, arrhythmia, stroke, transplantation, pulmonary hypertension, and heart failure. Includes the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of these diseases. Prepares students to determine the most appropriate treatments and monitoring parameters.

**RXTH 686. Cardiology Clinic Medication Reconciliations. 1 Unit.**

Teaches pharmacy students to conduct medication reconciliation to ensure that the medical team has a complete record and understanding of prescription and non-prescription medications taken by a patient during transition points of care (e.g., admissions, discharges, clinic visits, and moving between institutions or providers). Prerequisite: Third-year student.

**RXTH 701. Pediatric Pharmacotherapy. 2 Units.**

Expands the student's therapeutic knowledge regarding common pediatric disease states and prepares students to identify and address common drug-related problems in pediatric patients. Prerequisite or concurrent\*: RXTH 704\*, completion of winter quarter of PY3 year.

**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. Prerequisite: RXTH 771.

**RXTH 703. Advanced Topics in Critical Care. 2 Units.**

Presents disease states and treatments in critically ill patients in the clinical environment. Preparation for clinical rotations and inpatient pharmacy practice.

**RXTH 704. Special Populations. 3 Units.**

Introduces students to the core concepts involved in the care of pediatric and geriatric patients. Expands students' knowledge base of pharmacology, pharmacokinetics, and pharmacodynamics of drugs. Includes anatomy, physiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical trial evidence. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish the course outcomes.

**RXTH 708. Mental Health in the Movies. 2 Units.**

Evaluates the depiction of mental health conditions in various media, including books and movies.

**RXTH 709. Home Infusion Pharmacy. 1.5 Unit.**

Provides a comprehensive overview of the management of intravenous therapy to improve clinical competency and reduce the risk of negative outcomes for safely delivering care to patients outside of the hospital or clinic setting. Prerequisite: P3 standing.

**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 771. Central Nervous System II. 3.5 Units.**

Introduces students to management (evaluation, treatment, monitoring, and follow-up) of patients with neurological conditions (Table I).

Describes basic pathophysiology of common neurological conditions, along with pharmacokinetic and pharmacodynamic properties of the most common therapeutic agents. Provides practical experience in managing patients with neurological conditions, along with additional comorbid conditions, through case-based activities.

**RXTH 773. Central Nervous System I. 3.5 Units.**

Introduces students to management (evaluation, treatment, monitoring, and follow-up) of patients with psychiatric illnesses (Table I). Describes basic pathophysiology of common psychiatric illnesses, along with pharmacokinetic and pharmacodynamic properties of the most common therapeutic agents. Provides practical experience in managing patients with psychiatric illness, along with additional comorbid conditions, through case-based activities.

**RXTH 774. Gastrointestinal Disorders. 2.5 Units.**

Introduces students to the pathophysiology and management (assessment, evaluation, treatment, monitoring, and patient education) of common gastrointestinal disorders, liver diseases, hepatitis; and other topics such as stress ulcer prophylaxis. Covers the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of these diseases. Assimilates relevant literature and current guidelines into treatment plans.

**RXTH 775. Oncology. 2.5 Units.**

Introduces student pharmacists to the pathophysiology, pharmacology, and therapeutic management of common hematologic malignancies and solid tumors. Students gain an understanding of the management of adverse side effects due to chemotherapy. Provides an avenue for student pharmacists to practice critical-thinking skills and clinical decision making using interactive, case-based lecturing and recitation cases.

**RXTH 776. Infectious Diseases. 7 Units.**

Introduces pharmacology, pharmacokinetics, and pharmacodynamics of anti-infective agents, as well as the Pharmacists' Patient Care Process, to manage patients with common infections.

**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.

## Pharmacy/Social and Administrative Sciences (RXSA)

### Courses

**RXSA 545. Public Health and Lifestyles. 3 Units.**

Introduction to principles of public health and public health practice. Addresses how pharmacy practice interfaces with public health delivery in a variety of settings; identification and evaluation of public health education programs; and, how the pharmacist ensures conditions under which all people can be healthy.

**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 555. Epidemiology and Public Health. 3 Units.**

Examines the fundamentals of public health epidemiology. Addresses distribution and determinants of health and illness, factors contributing to health promotion and disease prevention, implementation of activities that advance public health and wellness, and immunization delivery.

**RXSA 600. Philippines Medical Mission Preparation. 1 Unit.**

Orientation to cultural, professional, and clinical experiences in the Philippines. Surveys geographical, cultural, and epidemiological history of the Batangas people. Reviews preparation of medications to be dispensed during the mission. Describes the pharmacist's scope of practice in the medical mission and provision of competent pharmacy care. Develops and implements mission responsibilities, tasks, and itineraries.

**RXSA 618. Writing for Publication. 3 Units.**

Addresses publishable, professional writing. Includes: pre-writing exercises, basic components of articles, journal style sheets, bibliographies, citing works within a text, and writing conventions such as mechanics, usage, and sentence formation.

**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. Prerequisite: Successful completion of all P1-level courses; P2; Autumn Quarter standing.

**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 650. Biostatistics. 3 Units.**

Exposure to commonly used descriptive and inferential statistical techniques. Addresses selection of appropriate parametric and non-parametric statistical tests for research and interpretation of findings in the literature. Includes presentation of statistical information in tabular and graphical formats.



**RXSA 743. Health Systems, Reimbursement, and Pharmacoeconomics. 3 Units.**

Explores health outcomes research and pharmacoeconomic analyses. Includes: cost-benefit analyses across drug treatments; resource allocation; practice guidelines for pharmacoeconomic evaluation; pharmacists' roles in the health-care system; and, drug and clinical pharmacy reimbursement in practice settings.

**RXSA 748. Advanced Topics in Pharmacy Law. 1 Unit.**

Exposes the student to current issues in pharmacy law and regulation both at the federal and state levels. Introduces pending legislation at both the state and federal levels. Assigned legal articles and pending legislation read and presented during class allow the student to become familiar not only with the issue(s) being presented, but also to analyze and present the issues' impact on the practice of pharmacy in general and on the student's personal practice of pharmacy.

**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 public health, health education, preventive health, health promotion, and pharmacological practice. Includes patient and needs assessments.

**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. Prerequisite: Completion of RXDI 664 and RXSA 640 with a grade of B- or better.

## Philosophy (PHIL)

### Courses

**PHIL 616. Seminar in the Philosophy of Science. 2 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.

## Physical Education Activity (PEAC)

### Courses

**PEAC 110. Independent Activities. 1 Unit.**

Develops an appropriate fitness/activity program in conjunction with the instructor. 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. Prerequisite: Students must have beginning swimming ability as determined by the instructor.

## Physical Medicine and Rehabilitation (PMRH)

### Courses

**PMRH 891. Physical Medicine and Rehabilitation Elective. 1.5-27 Units.**

Offers fourth-year medical students the opportunity to explore various areas of physical medicine and rehabilitation, including pain management and research.

## 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 I. 3 Units.**

Introduces general medical conditions, including pathology and management of medical problems: diseases of the body systems—including cardiovascular, urinary, digestive, nervous, endocrine, and musculoskeletal systems. Theoretical principles and practical application of respiratory techniques, exercises, and postural drainage. CPR certification required prior to the end of the term. Prerequisite: PTAS 201.

**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 Biophysical Agents. 3 Units.**

Introduction to administration and practice of physical therapy biophysical agents including heat and cold applications, hydrotherapy, massage, aquatic therapy, physiology and control of edema, standard precautions, sterilization techniques, and pain management. Lecture and laboratory. Prerequisite: PTAS 201.

**PTAS 234. General Medicine II. 1 Unit.**

Introduces equipment, lines, tubes, and procedures for interventions in acute/inpatient settings by the physical therapist assistant. Mobilization, functional mobility, exercise, and transfers within the acute care setting. Identifies the roles of multidisciplinary team members managing critical care patients. Prerequisite: PTAS 212, PTAS 224.

**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 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. Prerequisite: PTAS 203.

**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 293. Physical Therapist Assistant Clinical Experience 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. Combined total of eighteen weeks—including PTAS 293, 294, 295—of clinical experience prepares the student for entry-level performance.

**PTAS 294. Physical Therapist Assistant Clinical Experience 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. Combined total of eighteen weeks—including PTAS 293, 294, 295—of clinical experience prepares the student for entry-level performance.

**PTAS 295. Physical Therapist Assistant Clinical Experience III. 6 Units.**

The terminal, six-week assignment completed during the final quarter of the program. Exposes students to a variety of clinical settings. Forty clock hours per week of supervised clinical experience. The combined total of eighteen weeks—including PTAS 293, 294, 295—of clinical experience prepares the student for entry-level performance.

## Physical Therapy (PHTH)

### Courses

**PHTH 501. Neurology I. 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, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcome measurements.

**PHTH 502. Neurology II. 3 Units.**

Physical therapy management of individuals with neurological disorders (including stroke, traumatic brain injury, multiple sclerosis, Parkinson's disease) resulting in impairments, functional limitations, and disabilities. Emphasizes 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, Guillain-Barre Syndrome, and Amyotrophic Lateral Sclerosis 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 504. Neurology IV. 1 Unit.**

Capstone experience assessing critical thinking and clinical application of previously learned content supporting neurologic physical therapy practice.

**PHTH 505. Integrated Clinical Experience. 1 Unit.**

A year-long course that provides the students—assisted by faculty and clinical therapist—experience with mock and real patients. Emphasis is on critical thinking related to assessment, safety, and treatment progression. Course incorporates didactic education into practical application.

**PHTH 506. Exercise Physiology. 3 Units.**

Addresses physiologic, metabolic, circulatory, and structural adaptations, responses, and interactions that occur during acute and chronic exercise. Includes body fat analysis and risk of disease in the obese client. Applies tests and measures to concepts and applications of exercise prescriptions.

**PHTH 508. PT Communication and Documentation. 2 Units.**

Introduces principles and dynamics of professional verbal and written communication, including use of electronic health records and the ICF model. Emphasizes skills required in a clinical setting for effective communication with third-party payors, health-care professionals, and patients. Includes quality and legal considerations in documentation of evaluations, progress notes, daily notes, discharge summaries, and letters of justification.

**PHTH 509. Biophysical Agents. 3 Units.**

Fundamental principles, physiological effects, and application techniques in the use of biophysical agents, including thermotherapy, cryotherapy, hydrotherapy, ultrasound, and electrotherapy procedures. Manual modalities, including massage techniques, myofascial and trigger point release. Lecture and laboratory.

**PHTH 510. Kinesiology. 3 Units.**

Fundamental principles of joint and muscle structure and function related to the development of treatment strategies for the physical therapist. Analyzes and applies the biomechanics of normal and pathological movement of the human body. Functional anatomy of the musculoskeletal system, including palpatory techniques for bone, ligament, and muscle.

**PHTH 511. Clinical Orthopaedics. 2 Units.**

Addresses the physical therapist's management of patients with functional impairments stemming from orthopaedic pathologies in all body regions. Introduces patient/client management; including, examinations, evaluations, diagnoses, prognoses, interventions, and outcomes. Emphasizes postoperative rehabilitation to enhance outcomes following orthopaedic procedures.

**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 516. Histology. 2 Units.**

Surveys fundamental tissues (epithelial, connective, muscle, and nervous) and the histopathology of selected diseases, including changes in bone and cartilage.

**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.**

Basic and advanced observational analysis of normal and abnormal human locomotion in adults. Compares differences in gait impairments at each joint and at different stance/swing phases. Use of assessment tools and clinical reasoning in the attributes and interventions of normal and abnormal gait characteristics. Basic pathological and soft tissue impairments to gait cycle. Correlates energy expenditure to gait.

**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 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 526A. Cardiopulmonary I. 3 Units.**

Anatomy and physiology of the cardiovascular system as applied to patient management. Physical therapy management of patients diagnosed with cardiac diseases and complications. Identifies disease processes, including definition, etiology, pathophysiology, clinical presentation, and the clinical course of cardiac conditions. Analyzes and examines ECGs of various forms with basic interpretation. Includes lecture and laboratory.

**PHTH 526B. Cardiopulmonary II. 3 Units.**

Normal anatomy and physiology of the pulmonary system as applied to physical therapy management. Medical and physical therapy management of patients diagnosed with pulmonary diseases and complications. Analyzes arterial blood gases in a systematic manner and relates findings to the disease and ventilatory process. Discusses PFTs for obstructive and restrictive diseases. Includes lecture and laboratory.

**PHTH 528. Therapeutic Exercise I. 3 Units.**

Introduces basic exercise techniques used in the practice of physical therapy. Techniques include, ROM, stretching/flexibility, joint mobilization, muscle performance (including strength, power, and endurance), and aquatic rehabilitation.

**PHTH 530. Therapeutic Exercise II. 3 Units.**

Formulation and implementation of exercise prescriptions based on impairments and protocols. Opportunities to design treatment progressions for the extremities. Emphasizes spinal stabilization approaches for the axial skeleton.

**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 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 539. Integrative Physiology. 4 Units.**

Physiology of the human body, including integumentary, skeletal, muscular, neuronal, cardiovascular, respiratory, endocrine, digestive, urinary, and reproductive physiology.

**PHTH 540. Concepts of Acute Care. 2 Units.**

Presents procedures, equipment, lines and tubes, medications, and treatments used while treating adult and pediatric patients in the acute care setting. Covers ICU, NICU, and CCU using current research on mobilization and improving function. Identifies roles of multidisciplinary team members managing critical care patients.

**PHTH 555. Medical Screening. 2 Units.**

Emphasizes information gathering from history taking, review of systems, and directed questioning—combined with a focused examination to establish a working diagnosis. Emphasizes clinical pattern recognition for both musculoskeletal and nonmusculoskeletal disorders. Students learn strategies to differentiate between musculoskeletal and nonmusculoskeletal disorders. Highlights knowledge and skills related to screening for medical pathology.

**PHTH 557. Pediatrics I. 3 Units.**

Examines typical sequential human development observed throughout prenatal, infant, toddler, and childhood periods, in the context of physical therapy; and provides an introduction to atypical development. Emphasizes observation of motor development and learning, and identification and documentation of movement for both the typically and atypically developing child.

**PHTH 558. Pediatrics II. 3 Units.**

Discussion, demonstration and practice of physical therapy assessment and treatment of pediatric clients with developmental disabilities. Select diagnoses will be studied including cerebral palsy, spina bifida, muscular dystrophy and torticollis, as well as other common impairments. Specific treatment interventions will be practiced including pediatric NDT, sensory processing, orthotic assessment, positioning and handling for the treatment of the pediatric client.

**PHTH 559. 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 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 563. Research I. 2 Units.**

Introduction to research methods and measurement principles, applied to assessing and interpreting information sources to support patient/client management decisions fundamental to evidence-based practice.

**PHTH 564. Research II. 1 Unit.**

Assessment and interpretation of information sources, evaluating outcomes related to a specific clinical question for purpose of writing an evidenced-based practice literature review.

**PHTH 565. Research III. 1 Unit.**

Assessment and interpretation of information sources, evaluating outcomes related to a specific clinical question for purpose of developing professional poster and oral presentations.

**PHTH 566. Pathology. 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.

**PHTH 568. Integrative 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, models, and exercises.

**PHTH 569. Clinical Neurology. 2 Units.**

Introduces the practice of neurologic physical therapy. Emphasizes neurologic disorders routinely encountered by physical therapists and their clinical manifestations. Presents components of the neurologic physical therapy examination.

**PHTH 571. Short Clinical Experience I. 2 Units.**

Four-week, forty clock hours per week, supervised short clinical experience (SCE) that introduces students to a variety of physical therapy practice settings, and allows them to begin applying and utilizing physical therapy clinical and professional skills learned during the first year of the DPT curriculum.

**PHTH 572. Short Clinical Experience II. 2 Units.**

A four-week, forty clock hours per week, clinical education experience. Students apply and practice knowledge and skills learned in general medicine, neurologic, orthopedics, and preventive care/wellness as they relate to patients across the life span. Supervision by a licensed physical therapist. Includes direct patient care, as well as possible participation in specific site team conferences, demonstrations, special assignments, and observation.

**PHTH 573. Physical Therapy Practicum III. 1.5 Unit.**

Third in a series of three practica. Provision of direct patient care during full-time clinical placement and participation at acute, outpatient, neurorehabilitation, orthopedics, geriatrics, pediatrics, sports medicine, or wellness/preventive care settings. Offered Summer quarter of the third academic year.

**PHTH 575. Orthopaedics IV. 1 Unit.**

A three-quarter course that integrates examination procedures taught in the orthopaedic curriculum. Culminates in 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 586. Orthotics and Prosthetics. 2 Units.**

Clinical reasoning in the attributes and interventions of normal and abnormal gait characteristics based on the field of orthotics and prosthetics. Instruction with various types of orthotics and prosthetics in order to collaborate with O&P clinicians and patients in locomotion rehabilitation.

**PHTH 587. Pharmacology. 2 Units.**

Introduction to general principles of pharmacology, including actions of commonly used medications on physiological processes related to physical therapy.

**PHTH 595. Clinical Imaging. 3 Units.**

Covers the various types of imaging used in clinical practice. Educates the future practitioner on the strong and weak points of each type of imaging, what that type of imaging is used for, and how the process is completed start to finish. Covers conventional x-ray, CAT scan, MRI, and MSK ultrasound. Laboratory portion familiarizes the student with MSK ultrasound, including its application and the general interpretation of the image produced.

**PHTH 596. Orthopaedics V. 3 Units.**

Presents the newest evidenced-based clinical evaluation and treatment applications over the spectrum of the patient population in the field of physical therapy. Emphasizes the specialized area of orthopedic physical therapy.

**PHTH 597. Specialized Interventions in Physical Therapy. 2 Units.**

Provides advanced study opportunities to pursue, in greater depth, various topics related to current trends in physical therapy and development of advanced clinical skills, where appropriate. Topics include: women's/men's health, lymphedema, wound care, and other specialized areas in physical therapy.

**PHTH 701. Long Clinical Experience I. 5 Units.**

Ten-week, full-time (40 hours/week average) clinical education assignment for D.P.T. students completed in an affiliated clinic with an emphasis in any of a variety of settings including: acute care, outpatient orthopedics, neurological rehabilitation, geriatrics, pediatrics, sports medicine, and preventive care/wellness.

**PHTH 702. Long Clinical Experience II. 5 Units.**

Eleven-week, full-time (40 hours/week average) clinical education assignment for D.P.T. students completed in an affiliated clinic with an emphasis in any of a variety of settings including: acute care, outpatient orthopedics, neurological rehabilitation, geriatrics, pediatrics, sports medicine, and preventive care/wellness. This is the second of three required affiliations in the final year of the program.

**PHTH 703. Long Clinical Experience III. 5 Units.**

Ten-week, full-time (40 hours/week average) clinical education assignment for DPT students completed in an affiliated clinic with an emphasis in any of a variety of settings including: acute care, outpatient orthopedics, neurological rehabilitation, geriatrics, pediatrics, sports medicine, and preventive care/wellness. This is the final of three required affiliations in the final year of the program.

**PHTH 736. Residency Level Clinical Experience. 1 Unit.**

Clinical mentorship under the supervision of a master clinician. Didactic instruction that draws upon a variety of strategies, including case reviews, 1:1 patient mentoring, experiential video analysis and feedback, activities that involve scientific inquiry, and interpretation of the literature and/or clinical experiences.

## Physical Therapy—Graduate (PTGR)

### Courses

**PTGR 500. 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.

**PTGR 501. Advanced Orthopaedic Specialty Tracks I. 3 Units.**

Presents the newest clinical treatment applications over the spectrum of the patient population in the field of orthopaedic physical therapy. Emphasis on the cervicothoracic spine and the shoulder girdle.

**PTGR 502. Advanced Orthopaedic Specialty Tracks II. 3 Units.**

Presents the newest clinical treatment applications over the spectrum of the patient population in the field of orthopaedic physical therapy. Emphasizes the thoracolumbar and the lumbopelvic regions.



**PTGR 503. Medical Documentation and Billing. 3 Units.**

Emphasizes expanded skills in medical documentation and communication in the clinical setting. Includes 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 related to physical therapy.

**PTGR 504. Science and Biomechanics of the Fascia and the Art of Myofascial Release. 3 Units.**

Bridges the science and art of myofascial release to learn clinically and anatomically based approaches to myofascial release. Focuses on how the fascia and muscle create dysfunction in the human body and increase stress to the system, leading to the occurrence of symptoms encountered clinically in the form of common musculoskeletal pathologies.

**PTGR 505. Orthopaedic Intervention: Regional Interdependency of the Cervical Spine & Upper Extremities. 3 Units.**

Advanced clinical assessment, treatment, and management of orthopaedic disorders of the upper extremities. Emphasis on regional interdependency. Includes biomechanics, examination, and intervention of the cervical spine and shoulder complexes, emphasizing refinement of the cervico-thoracic spine and upper-quarter screen and evaluation. Includes lecture and laboratory.

**PTGR 506. 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 hand-on techniques.

**PTGR 507. Advanced Pediatric Clinical Practice. 3 Units.**

Physical therapy management of the pediatric patient. Emphasizes observation and analysis of typical development, common movement dysfunctions, and evidenced-based interventions and treatment techniques for the developmentally delayed child.

**PTGR 508. Current Topics in Neurological Rehabilitation. 3 Units.**

Presents evidence-based physical therapy treatment applications for neurologically impaired patients across the life span. Evaluation and treatment of patients with acquired brain injury, stroke, spinal cord injury, vestibular disorders, diabetic neuropathies, and amputations. Emphasizes designing treatment plans, integrating family training, and maximizing independence using the International Classification of Functioning, Disability and Health (ICF) model.

**PTGR 509. 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 hands-on sessions focused on mastery of manual therapy application.

**PTGR 510. Neurologic Upper Extremity Management. 3 Units.**

Evidenced-based course that covers physical therapy practice relevant to adult neurological rehabilitation. Emphasizes a PNF perspective with a focus on 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.

**PTGR 511. Advanced Clinical Practice I: Orthopaedic Rehabilitation. 3 Units.**

Student demonstrates and practices advanced examination, assessment, and treatment of the lumbar spine, pelvic girdle, and lower extremities. Lecture and demonstration.

**PTGR 512. Advanced Clinical Practice II. 3 Units.**

Physical therapy management of individuals with vestibular disorders resulting in dizziness and postural instability. Emphasizes application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement. Learner-centered pedagogy requiring considerable weekly preclass preparation.

**PTGR 513. 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.

**PTGR 514. Professional Systems in Management I. 3 Units.**

Administering the academic department: personnel selection, development, and evaluation; finance; team development; and leadership theories.

**PTGR 515. Cardiopulmonary Approaches to Assessment, Wellness, and Disease. 3 Units.**

Review of pathology, etiology, and clinical manifestations of cardiopulmonary disorders encountered by physical therapists. ECG interpretation and assessment. Management of patients/clients at risk for chronic vascular disease. Overview of the epidemiology, risk factors, assessment, and interventions which address risks and negative health effects of metabolic syndrome. Emphasizes evidence-based research to guide the development of assessment, prevention, and intervention strategies.

**PTGR 516. Movement Science of the Upper Quarter. 3 Units.**

Presents pathomechanics of spine and upper extremity injuries. Explores the role of muscular imbalance in the pathogenesis of orthopaedic disorders of the upper quarter, and how faulty biomechanics contribute to injuries. Diagnosis, analysis, and evaluation of normal and abnormal movement patterns. Development and design of specific interventions aimed at changing movement dysfunctions of the upper quarter.

**PTGR 517. Movement Science: Lower Quarter Biomechanical Relationships. 3 Units.**

Presents pathomechanics of lumbar spine and lower extremity injuries. Explores the role of muscular imbalance in the pathogenesis of common orthopaedic disorders of the lower quarter and how faulty biomechanics can contribute to injuries. Diagnosis, analysis, and evaluation of normal and abnormal movement patterns. Development and design of specific interventions aimed at changing movement dysfunctions of the lower quarter.

**PTGR 518. 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.).

**PTGR 519. Home Health Physical Therapy for the Post-Acute Patient. 3 Units.**

An in-depth course for physical therapy students interested in the home health setting. Special emphasis on Medicare guidelines and the requirements necessary to excel in this progressive and growing setting.



**PTGR 520. Cervical Spine. 3 Units.**

Evaluation and treatment of patients using best practices and advanced orthopedic skills for the cervical spine. Differentiates clinical conditions and enhances clinical decision making. Integrates manual therapy into patient care. Links clinical practice guidelines to the International Classification of Functioning, Disability, and Health for impairment and function-based diagnosis, examination, and intervention.

**PTGR 521. Lumbar Spine. 3 Units.**

Evaluation and treatment of patients using best practices and advanced orthopedic skills for the lumbar spine. Differentiates clinical conditions and enhances clinical decision making. Integrates manual therapy into patient care. Links clinical practice guidelines to the International Classification of Functioning, Disability, and Health for impairment and function-based diagnosis, examination, and intervention.

**PTGR 522. Assessment and Management of the Knee. 3 Units.**

Evaluation and treatment of patients using best practices and advanced orthopedic skills for musculoskeletal conditions of the knee. Differentiates clinical conditions and enhances clinical decision making. Integrates manual therapy into patient care. Links clinical practice guidelines to the International Classification of Functioning, Disability, and Health for impairment and function-based diagnosis, examination, and intervention.

**PTGR 523. 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.

**PTGR 524. 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.

**PTGR 525. 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.

**PTGR 526. Health-related Quality of Life and Health Satisfaction in Health Care. 3 Units.**

Involves students in the incorporation of Loma Linda University's motto, "To make man whole," as a critical aspect of improving quality of life. Emphasizes ways to improve quality of life in aging and disabled populations. Uses quality-of-life and health-satisfaction instruments and outcomes to inform students' decision making and patient care across the life span and as an indicator of successful aging. Students develop a quality-of-life intervention program.

**PTGR 527. Skilled Nursing Facility Physical Therapy Practice, Interventions and Outcomes. 3 Units.**

Orientation to the skilled nursing clinical setting. Topics include, Medicare, Medicaid/Medi-Cal, and private insurance billing and regulations; resource utilization groups; common patient populations; treatment strategies; and, outcome measurements. Discussion and integration of evidence-based practice maximizing outcomes, compliance, and patient satisfaction.

**PTGR 528. Residency Level Advanced Seminars. 1 Unit.**

Accurate interpretation of emerging evidence with applications to physical therapy conditions. Contextually incorporates traditional classroom instruction, group activities and projects, case presentations, live demonstrations, case-based problem-solving sessions, and role-play activities into the clinical setting. Preparation for specialization certification by the American Board of Physical Therapy Specialists.

**PTGR 529. Integumentary and Lymphatic Systems: Evaluation and Intervention. 3 Units.**

Provides physical therapists with knowledge and skills to identify patients at risk for development of integumentary and lymphatic complications; to prescribe preventive measures to promote skin and lymphatic integrity; and to treat conditions once they develop.

**PTGR 531. Advanced Orthopaedic Procedures I. 3 Units.**

Student demonstrates and practices advanced examination and treatment of the lumbar spine, pelvic girdle, and lower extremities.

**PTGR 532. Advanced Orthopaedic Procedures II. 3 Units.**

Student demonstrates and practices advanced examination and treatment of the cervical spine, shoulder girdle, and upper extremities.

**PTGR 533. Advanced Orthopaedic Procedures III. 3 Units.**

Student demonstrates and practices advanced examination and treatment of the lumbar spine, thoracic spine, and rib cage.

**PTGR 534. Sensory Integration Disorders. 3 Units.**

Exploration of sensory integration disorders—including nystagmus, fluid abnormalities of the inner ear, and physical therapy management of individuals with chronic motion sensitivity and cervicogenic dizziness. Course emphasizes application and integration of theoretical constructs and evidenced-based practice. Prerequisite: PTGR 512.

**PTGR 535. Sensory Integration Disorders II. 3 Units.**

Explores sensory integration disorders and clinical applications. Emphasizes fluid abnormalities of the inner and middle ear, cervicogenic dizziness, theoretical constructs, and evidence-based practice. Learner-centered hybrid course pedagogy includes three on-line and two face-to-face classes. Prerequisite: PTGR 534.

**PTGR 536. Sensory Integration Disorders III. 3 Units.**

Explores sensory integration disorders and clinical applications. Emphasizes the neurophysiology of nystagmus, push-pull system, Ewald's laws, and dynamic visual acuity testing. Learner-centered hybrid-course pedagogy that includes three on-line and two face-to-face classes. Prerequisite: PTGR 534.

**PTGR 550. Introduction to Psychoneuroimmunology: The Science of Whole Person Care. 3 Units.**

Studies the effect of the neurological system on physical health, with a focus on psychoneuroimmunology. Summarizes 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 immune system function, and wellness.

**PTGR 551. Clinical Translation of Pain Science. 3 Units.**

Overview of pain science; including, chronic pain, the neurobiology of pain, pain mechanisms, psychological and cognitive aspects of pain, and measurement and assessment of pain. Examines neuropathic pain and its contribution to the "centralized pain" component and cognitive behavioral therapies. Discusses pharmacology concepts that help "retrain the brain" in patients suffering acute pain, while preventing the progression to chronic pain.

**PTGR 552. Pain Science: Interactions of the Brain and Body. 3 Units.**

Study of the transition from acute to chronic pain states. Distinguishes among peripheral neurogenic, central, and somatic pain mechanisms, and provides a foundation for the management of pain disorders through clinical decision-making. Utilizes functional MRI and neurocognitive function to recognize relationships among the brain, personality disorders, and acute and chronic pain.

**PTGR 553. Clinical Reasoning and Critical Thinking in Physical Therapy. 3 Units.**

Examines aspects of the “cognitive engine” related to evaluation, management, and decision-making for orthopaedic physical therapy patients. Develops use of goal-directed thinking, and analytical and evaluative questioning. Supports data gathering and interpretation, evaluation methodology, treatment planning and execution, and prognosing. Provides support for defending, justifying, and rationalizing clinical decisions.

**PTGR 554. Writing for the Physical Therapy Professional and Educator. 3 Units.**

Develops clear, precise, and audience appropriate writing skills. Links practical applications to common writing situations found in the health professions and education, ranging from intradisciplinary written communication to preparing abstracts and manuscripts for submission.

**PTGR 555. Grant Writing for Health Professionals. 3 Units.**

Addresses proposal-writing skills essential for acquiring competitive grant funding from government agencies and private foundations. Includes content knowledge, writing proficiency, research skills, originality, creativity, alignment with agency guidelines, and development and submission of a compelling proposal.

**PTGR 556. Research and Journal Club Seminars. 1 Unit.**

Presents novel and developing topics in the field of rehabilitation and medicine. Provides interactions with well-established and emerging investigators. Encourages state-of-the-art approaches and thinking in rehabilitation scholarship, with emphasis on physical therapy research and innovations.

**PTGR 557. Doctoral Dissertation Seminar. 1 Unit.**

A year-long course that assists doctoral students with development of dissertation chapters through the oral defense of the dissertation. Emphasis on the literature review, research design, committee formation, institutional review board training, time and project management, framing of chapters, dissertation format standards, and dissertation defense etiquette.

**PTGR 570. Muscle Energetics and Biochemistry. 3 Units.**

Surveys biochemistry and metabolic pathways related to muscle function during exercise and at rest. Includes muscle biochemistry, glycolysis, gluconeogenesis, beta oxidation, protein metabolism, and nutritional requirements of the cell. Emphasizes metabolic, cardiac, pulmonary, and neurological disorders that limit optimal muscle function and development of physical therapy protocols to minimize limitations. Covers prerequisites in organic and cellular chemistry.

**PTGR 571. 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.

**PTGR 572. 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.

**PTGR 573. Pathokinesiology of Gait. 3 Units.**

Advanced observational analysis of normal and abnormal human locomotion, with comparison of pathological differences.

**PTGR 574. Current Issues in Basic Science. 3 Units.**

Studies the current issues in basic science, as related to physical therapy. Topics may include current advances in biomechanics, cell and molecular biology, tissue engineering and transplants, pharmacology, and presentation of basic science research. Content includes scientific literature reviews and participation in a wet lab activity that includes development of a question or hypothesis and experimental plan, possible execution of the plan, and interpretation of results.

**PTGR 577. Pharmacology in Physical Therapy. 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.

**PTGR 578. Medical Screening for Physical Therapists. 3 Units.**

Screening for nonneuromusculoskeletal origins for the musculoskeletal complaints of patients who commonly seek rehabilitation in the physical therapy setting. Particularly emphasizes components of the history and physical examination that suggest medical pathology requiring a medical referral. Knowledge and skills related to screening for medical pathologies of the 11 body systems in patients with musculoskeletal complaints of the thorax, pelvis, spine and extremities.

**PTGR 579. Clinical Imaging for Physical Therapist. 3 Units.**

Explores modern imaging techniques used to assess musculoskeletal disorders and cardiovascular pathologies. Includes radiographs, CAT scans, MRIs, bone densitometry, PET scans. Emphasizes clinical ultrasound imaging as used in physical therapy.

**PTGR 580. Movement Science: Bio-control. 3 Units.**

Emphasizes application and discussions of the contemporary knowledge of motor control and learning to individuals with movement dysfunctions.

**PTGR 584. Functional Magnetic Resonance Imaging. 3 Units.**

Introduces students to the techniques applied in functional magnetic resonance imaging and their applications. Covers the theoretical basics of MRI, different types of techniques and software used for processing, group analysis, and interpretation of results.

**PTGR 585. Three-dimension Medical Imaging Quantitation. 3 Units.**

Introduces basic principles of medical imaging as they relate to volumetrics and 3D rendering. Topics include: concept of the voxel, 3D image generation, multiplanar reformat measurements, segmentation, and data presentation. Hands-on experience with 3D imaging software that teaches common toolsets for 3D processing. Prerequisite: PTGR 584.

**PTGR 586. MATLAB. 3 Units.**

Discusses general programming concepts; different ways to plot, visualize, and explore data; and typically used toolboxes and functions in MATLAB.

**PTGR 590. 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. 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.

**PTGR 591. Biomechanics I. 3 Units.**

Reviews classic concepts in biomechanics at the tissue, joint, and whole body level. Provides a basic understanding of classic and current biomechanical research and how to interpret/synthesize this research. Explores topics related to muscle and tendon function/dysfunction, joint lever biomechanical demands and function, and whole body analysis of human movement. Facilitates the development of theoretical framework for biomechanical research questions.

**PTGR 592. Biomechanics II. 3 Units.**

Reviews methodologies related to the biomechanics of human movement. Areas of focus include kinematics, kinetics, energetic, inverse dynamics, data processing and interpretation, and muscle force measurements. Focuses on the interpretation of kinematic, kinetic, and energetic data and appropriate measures to quantify movement. Facilitates the development of methods to test biomechanical research questions and apply biomechanical concepts to the clinical environment. Prerequisite: PTGR 591.

**PTGR 594. Evidence-Based Practice in Physical Therapy. 2 Units.**

A structured overview of evidence-based practice (EBP) for the advancement of physical therapy practice as well as research-supported strategies for implementing EBP in real world clinical settings.

**PTGR 599. Comprehensive Examination. 0 Units.**

Required written examination to be completed at the end of the second didactic year for the Doctor of Science degree and the Doctor of Philosophy degree in physical therapy science. Comprehensively evaluates student's knowledge in four domains without the assistance of outside resources: education, research, clinical practice/science, and ethics/professionalism. Successful completion required for continuation in the program. Prerequisite: AHCJ 599; AHRM 581, AHRM 582.

**PTGR 690. 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.

**PTGR 693. Research and Statistics III: Development and Approval of Research Topic and Questions. 3 Units.**

Research-topic selection, development of research questions, literature review, oral defense of research topic, questions and proposed research design, and approval. Prerequisite: AHRM 582.

**PTGR 694. Proposal Development and Institutional Review Board Approval. 3 Units.**

With oversight by the research guidance committee, student develops a written research proposal that describes the problems to be investigated, the hypotheses and assumptions to be developed, and the proposed experimental design; and that subsequently is submitted to the Office of Sponsored Research for Institutional Review Board approval. Prerequisite: PTGR 693.

**PTGR 695. Research and Statistics V: Data Collection. 3 Units.**

Research data planning, setup, standardization of procedures, collection, electronic data capture, management, and storage leading to dissertation.

**PTGR 696. Research and Statistics VI: Data Analysis. 3,6 Units.**

Individual arrangements for doctoral students to work with their research guidance committee on analysis and presentation of research data. Student prepares manuscript presenting results of doctoral research study.

**PTGR 699. Research and Statistics VII - 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.

## Physicians Assistant (PAST)

### Courses

**PAST 501. Anatomy for Physician Assistants I. 2 Units.**

First of three courses in anatomy for physician assistants. Study of the anatomical structure of the human body by organ system. Includes dissection of cadavers and preserved specimens; and, histology, anatomic relations, and the anatomical basis for disease, injury and dysfunction.

**PAST 502. Anatomy for Physician Assistants II. 2 Units.**

Second of three courses in anatomy for physician assistants. Study of the anatomical structure of the human body by organ system. Includes dissection of cadavers and preserved specimens; and, histology, anatomic relations, and the anatomical basis for disease, injury and dysfunction. Prerequisite: PAST 501.

**PAST 503. Anatomy for Physician Assistants III. 2 Units.**

Third of three courses in anatomy for physician assistants. Study of the anatomical structure of the human body by organ system. Includes dissection of cadavers and preserved specimens; and, histology, anatomic relations, and the anatomical basis for disease, injury and dysfunction. Prerequisite: PAST 501, PAST 502.

**PAST 504. Primary Care Pediatrics. 3 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. 3 Units.**

Common problems encountered in caring for women; management of these problems. Etiology, pathophysiology, clinical presentation, and diagnostic work-up.

**PAST 511. Pharmacology for Physician Assistants I. 2 Units.**

The first of three parts of a continuum of courses that study the basic concepts of pharmaceuticals used in the diagnosis, prevention, and treatment of diseases—including a systematic presentation of pharmacology and the therapeutic value of the drugs used in medicine. Related topics include drug legislation, routes of administration, adverse effects, drug interactions, and drug toxicity, with special consideration to pediatric and geriatric pharmacology.

**PAST 512. Pharmacology for Physician Assistants II. 2 Units.**

The second of three parts of a continuum of courses that studies the basic concepts of pharmaceuticals used in the diagnosis, prevention, and treatment of diseases—including a systematic presentation of pharmacology, and the therapeutic value of the drugs used in medicine. Related topics include drug legislation, routes of administration, adverse effects, drug interactions, and drug toxicity, with special consideration to pediatric and geriatric pharmacology. Prerequisite: PAST 511.

**PAST 513. Pharmacology for Physician Assistants III. 2 Units.**

The third of three parts of a continuum of courses that studies the basic concepts of pharmaceuticals used in the diagnosis, prevention, and treatment of diseases—including a systematic presentation of pharmacology and the therapeutic value of the drugs used in medicine. Related topics include drug legislation, routes of administration, adverse effects, drug interactions, and drug toxicity, with special consideration of pediatric and geriatric pharmacology. Prerequisite: PAST 511, PAST 512.

**PAST 516A. Physician Assistant Professional Issues. 1 Unit.**

A history of the physician assistant (PA) profession and current trends and issues. Includes the PA's role in health-care delivery, political, legal, and intraprofessional factors that affect PA practice, and the PA's role in relation to physicians and other health-care providers. Addresses professional responsibility and biomedical ethics, professional organizations, program accreditation, graduate certification and recertification, employment consideration.

**PAST 516B. Physician Assistant Professional Issues. 1 Unit.**

Continues PAST 516A. Prerequisite: PAST 516A.

**PAST 530. Diagnostic Techniques for Physician Assistants I. 1 Unit.**

Introduces laboratory investigations and imaging techniques used to confirm or exclude probable diagnoses. Acquire and apply knowledge, skills and medical reasoning required to select both screening and confirmatory tests in a medically sound, cost-effective manner.

**PAST 531. Diagnostic Techniques for Physician Assistants II. 1 Unit.**

Introduces and applies laboratory investigations and imaging techniques used to confirm or exclude probable diagnoses. Acquire and apply knowledge, skills and medical reasoning required to select both screening and confirmatory tests in a medically sound, cost-effective manner. Prerequisite: PAST 530.

**PAST 532. Diagnostic Techniques for Physician Assistants III. 1 Unit.**

Introduces and applies laboratory investigations and imaging techniques used to confirm or exclude probable diagnoses. Acquire and apply knowledge, skills and medical reasoning required to select both screening and confirmatory tests in a medically sound, cost-effective manner. Prerequisite: PAST 530, PAST 531.

**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 551. Normal and Pathologic Physiology for Physician Assistants I. 2 Units.**

Exploration of normal physiological function from a systems-based medical perspective which serves as a foundation for understanding the process of disease. Includes etiology, pathogenesis, and clinical manifestations of medical disorders.

**PAST 552. Normal and Pathologic Physiology for Physician Assistants II. 2 Units.**

Exploration of normal physiological function from a systems-based medical perspective which serves as a foundation for understanding the process of disease. Includes etiology, pathogenesis, and clinical manifestations of medical disorders. Prerequisite: PAST 551.

**PAST 553. Normal and Pathologic Physiology for Physician Assistants III. 2 Units.**

Exploration of normal physiological function from a systems-based medical perspective which serves as a foundation for understanding the process of disease. Includes etiology, pathogenesis, and clinical manifestations of medical disorders. Prerequisite: PAST 551, PAST 552.

**PAST 554. Clinical Skills for Physician Assistants. 4 Units.**

Introduces the basic skills and knowledge needed to evaluate and treat common illnesses and injuries. Safety, aseptic technique, ACLS, airway management, wound care, local anesthesia, injections, suturing, casting, splinting, use of various tubes and drains, basic emergency medicine skills, and basic surgical skills for physician assistants are covered. Includes participation in clinical simulations for enhanced skill development.

**PAST 556. Preventive Medicine and Health Promotion. 2 Units.**

Selected topics dealing with disease prevention. Includes relevance of statistics, epidemiology, research designs, and clinical trials; and, disease trends and lifestyle modification. Examines the roles of physical activity, nutrition, immunization, and public health as approaches in communicable disease prevention. Addresses clinical preventive services leading to tailored health maintenance plans for individual patients.

**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 571. Integrative Spanish 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. Includes interactive language lab using Spanish-speaking subjects. Students perform a mock OSCE capstone in Spanish at quarters end.

**PAST 572. Culture and Community for Physician Assistants. 3 Units.**

Emphasizes health and medicine. Obtain cross-cultural experience while interacting with non-English-speaking patients, and gaining a greater understanding of patient culture. Requires completion of a community-based service project and immersion within local community.

**PAST 575. Clinical Correlation for Physician Assistants I. 1 Unit.**

Addresses critical thought process needed for diagnosis and management of clinical problems.

**PAST 576. Clinical Correlation for Physician Assistants II. 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. Prerequisite: PAST 575.

**PAST 577. Clinical Correlation for Physician Assistants III. 1 Unit.**

Emphasizes critical thought process needed for diagnosis and management of clinical problems. Prerequisite: PAST 575, PAST 576.

**PAST 578. Clinical Correlation for Physician Assistants IV. 1 Unit.**

Emphasizes the critical thought process needed for diagnosis and management of clinical problems. Prerequisite: PAST 575, PAST 576, PAST 577.



**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. Prerequisite: PAST 581.

**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. Prerequisite: PAST 582.

**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). Prerequisite: PAST 583.

**PAST 591. Clinical Medicine for Physician Assistants I. 3 Units.**

Introduction to common medical disorders encountered in primary care and management of these disorders. Includes, clinical presentation, etiology, pathophysiology, diagnostic work-up, and management of the conditions studied. Based upon NCCPA blueprint standards.

**PAST 592. Clinical Medicine for Physician Assistants II. 3 Units.**

Second of four courses that study common medical disorders encountered in primary care, as well as the management of these disorders. Includes the clinical presentation, etiology, pathophysiology, diagnostic work-up, and management of the conditions studied. Course objectives and specific learning objectives based on NCCPA blueprint. Prerequisite: PAST 591.

**PAST 593. Clinical Medicine for Physician Assistants III. 3 Units.**

Third of four courses that study common medical disorders encountered in primary care, as well as the management of these disorders. Includes the clinical presentation, etiology, pathophysiology, diagnostic work-up, and management of the conditions studied. Course objectives and specific learning objectives based upon NCCPA blueprint. Prerequisite: PAST 591, PAST 592.

**PAST 594. Clinical Medicine for Physician Assistants IV. 2 Units.**

Fourth of four courses that study common medical disorders encountered in primary care, as well as the management of these disorders. Includes the clinical presentation, etiology, pathophysiology, diagnostic work-up, and management of the conditions studied. Course objectives and specific learning objectives based upon NCCPA blueprint. Prerequisite: PAST 591, PAST 592, PAST 593.

**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.**

Application of evidence-based medicine to the development of a literature review on a selected topic in physician assistant practice. Begins in Winter Quarter with completion in the Summer Quarter. Preparation for the Capstone project. Prerequisite: PAST 601.

**PAST 603A. Capstone. 1 Unit.**

Investigation of topic related to area of interest within primary care or PA profession using evidence-based approach. Includes completion of capstone project and personal portfolio reflective of university values. Prerequisite: PAST 602.

**PAST 603B. Capstone. 1 Unit.**

Continues PAST 603A. Prerequisite: PAST 603A.

**PAST 701. Rotation I. 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 rotations through a medical or surgical service of choice.

**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 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). Prerequisites: PHSL 506.

### **PHSL 519. Medical Physiology. 7.5 Units.**

Physiological basis of normal and selected pathological conditions, modern concepts of homeostasis, and negative feedback control systems.

### **PHSL 526. Medical Physiology. 7.5 Units.**

Examines the physiological function and regulation of major organ systems, and the integration and interaction of these systems with one another. Includes cardiovascular, respiratory, gastrointestinal, renal, endocrine, reproductive systems, and exercise physiology. Presents essential levels of organization from cellular and molecular to tissue and organ systems. Emphasizes mechanistic and integrative functions that enable adaptation and survival in the face of changing needs and resources.

### **PHSL 537. 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.**

Prerequisite: Organic chemistry and one of the following: biochemistry, molecular biology, or cell biology. Physics desirable. Prerequisite: Organic chemistry and one of the following: biochemistry, molecular biology, or cell biology. Physics desirable.

### **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 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 life span. 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 694. Special Problems in Physiology. 2-4 Units.**

### **PHSL 697. Research. 1-8 Units.**

### **PHSL 699. Dissertation. 2-4 Units.**

### **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.**

Explores the history and theoretical underpinnings of play therapy. Gives attention to the explanatory nature of theories as informing methods and techniques used in assessment and the healing processes. Emphasis on professional ethics and legal guidelines. Introduces child centered play, cognitive-behavioral play, and Gestalt play therapies. Prerequisite: Completion of theory courses required in respective degree area; 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 coursework.

### **PLTH 547. Play Therapy Approaches for Treating Developmental and Behavioral Disorders. 2 Units.**

Explores developmental play therapy theory, methods, and techniques that provide children with experiences essential to physical and social-emotional growth and secure attachment in child-parent relationships. Emphasizes sensory integration, self-regulation, and adaptations for children with developmental delays. Explores adjunctive resources. Prerequisite: Completion of foundational play therapy courses.

### **PLTH 548. Child Psychosocial Play Therapy. 2 Units.**

Provides advanced strategies and methods used to help children and families address environmental and life/stress adjustment issues. Includes child and family support that enhances wellness through self-regulation toward improved. Prerequisite: Completion of foundational play therapy courses.

### **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. Cross-listing: PLTH 549.

**PLTH 550. Trauma Focused Play Therapy. 3 Units.**

Covers play therapy techniques, therapies, and models which help children prevent or resolve psychosocial challenges following trauma, and achieve optimal growth and development. Introduces principles of intervention and ethical/legal guidelines for the assessment and treatment of traumatized children.

**PLTH 650. Play Therapy with Adolescents and Adults. 3 Units.**

Emphasizes advanced play therapy with adolescents and adults. Includes 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. Prerequisite: Completion of foundational play therapy courses.

**PLTH 700. Practicum in Play Therapy. 2 Units.**

Provides supervised practice in play therapy assessment, diagnosis, and intervention techniques with children and their parents. Applies toward 45 hours of practicum experience. May be completed in up to five quarters. Prerequisite: Completion of foundational play therapy courses.

## Polysomnography (RSPS)

### Courses

**RSPS 210. Foundation of Polysomnography and Sleep Medicine. 2 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 216. 3- and 12-Leads ECG Interpretation. 2 Units.**

Reviews 3-leads interpretation with advancement to 12-leads ECG. Reviews cardiac anatomy and physiology, underlying pathophysiology, and basic rhythm recognition with an overview of related treatments. Emphasizes skills needed by the bedside practitioner to differentiate between benign and life-threatening cardiac dysrhythmias. Includes principles of application and interpretation of the 12-lead system. Emphasizes recognition of the acute myocardial infarction.

**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. 2 Units.**

Addresses preparation of sleep study patients and use of electroneurodiagnostic equipment in the polysomnography laboratory. Includes electrode placement; principles of the conduction system, signal derivation, and amplification; signal processing, filter, and sensitivity; calibration; and, AC/DC instrumentation.

**RSPS 234. Polysomnography Patient Education and Safety. 1 Unit.**

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. 2 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. Prerequisite: RSPS 210, RSPS 216, RSPS 230.

**RSPS 274. Polysomnography Diseases. 3 Units.**

Recognition of sleep disorders and their pathophysiologies. Includes adult and pediatric obstructive sleep apnea, hypopneas, respiratory effort-related arousals, central apneas, complex sleep apnea, and Cheyne-Stokes. Introduces CPAP and titration methods, bilevel ventilation, oxygen therapy, and surgical interventions as treatments. Addresses nonrespiratory sleep disorders, such as narcolepsy, hypersomnia, insomnia, seizures, and epilepsy. Prerequisite: RSPS 210, RSPS 227.

**RSPS 286. Polysomnography Case Study. 2 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.**

Introduction to sleep center facilities, working hours, documentation, and personnel. Practice in patient assessment, obtaining patient history, complete set up, data acquisition, and reporting processes. Includes waveform interpretation, sleep study scoring, and patient monitoring. Application of interventional modalities to relieve relative sleep disorders. Prerequisite: RSPS 210, RSPS 216, RSPS 227, RSPS 230.

**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. Prerequisite: RSPS 210, RSPS 216, RSPS 227, RSPS 230, RSPS 295.

**RSPS 510. Sleep Neurophysiology and Pathologies. 3 Units.**

First course in a three-course series. Case study-based analysis covering sleep disorders that involves various normal and abnormal sleep patterns and respiratory drive. Discusses common sleep pathologies and pharmacological interventions and treatment.

**RSPS 511. Methodologies in Sleep Disorder Assessment and Intervention. 3 Units.**

Second course in a three-part series. Introduces foundations of patient preparation for polysomnogram evaluation. Discusses physical principles employed in acquiring and interpreting cardiac, neurological, and respiratory diagnostics. Reiterates components of a PSG, cardiac diagnostics (including 3/12-lead ECG), and neurodiagnostics relevant to evaluation of sleep disorders.

**RSPS 512. Advanced Polysomnography Practicum. 3 Units.**

Clinic-based practicum in which students perform a variety of sleep assessments including patient set up, observation/monitoring, data acquisition, evaluation, and scoring. Applies interventional modalities, such as CPAP or bi-level therapy, with appropriate titration to relieve respiratory-related sleep disorders. Opportunities to perform advanced clinical procedures in the sleep center and to perform complete polysomnographs independently. Prerequisite: RSPS 510, RSPS 511.

# Population Medicine (PMED)

## Courses

### PMED 521. Population Medicine I. 4 Units.

Teaches how to formulate a strategy to control risks or hazards in a defined population. Includes risk assessment, risk management, and risk communication. Project incorporates experiences applied to the student's own field of practice.

### PMED 522. Population Medicine II. 4 Units.

Explains how to design a multifaceted preventive approach to address a complex health issue. Includes approaches for communicable and non-communicable diseases on an individual and population level. Project incorporates experiences applied to the student's own field of practice.

### PMED 523. Population Medicine III. 4 Units.

Shares how to create a leadership strategy to manage the health of a population. Includes multiple dimensions of health-care delivery and quality. Project incorporates experiences applied to the student's own field of practice.

### PMED 551. Population Medicine in Public Health I. 4 Units.

Equips students with foundational knowledge and skills in the practice of population medicine. Develops progressive competency in professionalism, medical knowledge, and practice-based learning and improvement. Focuses on commonly used study designs, concepts of disease frequency and rates, and review and interpretation of epidemiologic literature.

### PMED 552. Population Medicine in Public Health II. 4 Units.

Equips students with foundational knowledge and skills in the practice of population medicine. Develops progressive competency in professionalism, medical knowledge, and practice-based learning and improvement. Focuses on concepts of disease risk, appropriate statistical analysis, and review and interpretation of epidemiologic literature.

### PMED 553. Population Medicine in Public Health III. 4 Units.

Equips students with foundational knowledge and skills in the practice of population medicine. Develops progressive competency in professionalism, medical knowledge, and practice-based learning and improvement. Focuses on risk assessment, risk management, and risk communication; features of primary, secondary, and tertiary prevention; and effective leadership strategies.

### PMED 554. Population Medicine in Public Health IV. 4 Units.

Empowers students to set learning and improvement goals in the practice of population medicine. Develops progressive competency in professionalism, medical knowledge, and practice-based learning and improvement. Focuses on the medical professional's role in the surveillance of disease, review and interpretation of epidemiologic literature, and integrating evidence into one's professional practice.

### PMED 555. Population Medicine in Public Health V. 4 Units.

Empowers students to set learning and improvement goals in the practice of population medicine. Develops progressive competency in professionalism, medical knowledge, and practice-based learning and improvement. Focuses on population-based metrics, review and interpretation of epidemiologic literature, and developing an individualized plan for well-being.

### PMED 556. Population Medicine in Public Health VI. 4 Units.

Empowers students to set learning and improvement goals in the practice of population medicine. Develops progressive competency in professionalism, medical knowledge, and practice-based learning and improvement. Focuses on opportunities and barriers in the prevention of disease and injury, review and interpretation of epidemiologic literature, and leadership for one's professional practice.

### PMED 699. Research. 1-10 Units.

Independent research with a population medicine focus. Arranged with faculty member(s).

# Preventive Medicine (PRVM)

## Courses

### PRVM 517. Lifestyle and Preventive Medicine. 4 Units.

Provides students with a broad foundation in epidemiology and biostatistics skills as it contributes to the organ system curriculum in the second year. Students formulate effective and evidence-based preventive medicine strategies in preparation for treating individual patients and communities. Utilizes a combination of lecture, case-based learning, online self-directed modules, and active learning modules to teach current preventive medicine approaches.

### PRVM 791. Applied Preventive Medicine. 2 Units.

Longitudinally integrated course. Improves students' ability to identify and apply key concepts in preventive medicine and public health through practical application to patient cases, specifically focusing on literature analysis, preventive services selection, and motivational interviewing. Submitted work included in a portfolio that demonstrates growth in the discipline.

### 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 their 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 526. Psychopathology. 4.5 Units.**

Covers mental status examinations. Includes: basic tools for gathering psychiatric information; advanced exposure to psychiatric disease and diagnosis; and, implementation of the DSM-V which involves mood, anxiety, psychotic, trauma, childhood, somatic, personality and sexual disorders. Addresses common comorbidities and psychopharmacologic and psychodynamic treatment options for each disorder.

**PSYT 599. Psychiatry Directed Study. 1.5-18 Units.****PSYT 701. Psychiatry Clerkship. 1.5-9 Units.**

Six-week clerkship paired with a four-week neurology clerkship. Includes a one-week addiction medicine rotation and two- and three-week rotations working with child, adolescent, and adult populations. Includes a clinical OSCE with a focus on diagnosis of mental illness, development of patient rapport, and identification of risk factors for suicide and homicide. Addresses the identification of ongoing issues of interpersonal transference toward patients and conflict management in patient care.

**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 101. Introduction to Psychology. 4 Units.

A general overview course focusing on the scientific study of both the behavioral and mental processes of human beings and animals. Covers history of psychology and scientific thought, biological basis of behavior, research methodology, sensation and perception, states of consciousness, memory, language and intelligence, developmental psychology, learning, personality, and abnormal psychology.

### PSYC 204. Introduction to Behavioral Health. 2 Units.

Introduces programs, services and professions that constitute the field of behavioral health. Includes an orientation to the skills, knowledge, and legal/ethical considerations needed to work with various client populations. Addresses recovery/resiliency model, and an overview of clinical modalities used in the treatment of various conditions. First level certification in mental health first aid is provided. Prerequisite: Acceptance into the summer Behavioral Health Academy required.

### PSYC 226. Life-Span Development. 4 Units.

Life-span course emphasizing the physical, mental, emotional, social, and religious/moral development from conception through adulthood, aging, and death.

### 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. Prerequisite: General psychology.

### 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. Corequisite: PSYC 511.

### 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. Prerequisite: PSYC 501, PSYC 511; must be a Psychology student; or consent of instructor.

### PSYC 503. Advanced Multivariate Statistics. 4 Units.

Applies linear (matrix) algebra to maximum likelihood estimation using multivariate statistical techniques. Includes multivariate analysis of variance, multivariate regression, path analysis and structural equations causal modeling, log-linear models, and time series analysis. Evaluates alternatives to maximum likelihood estimation. Prerequisite: PSYC 501, PSYC 502, PSYC 511; must be a Psychology student; or consent of instructor.

### 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 WAIS-III, 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. Prerequisite: PSYC 511. Corequisite: PSYC 571.

### 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. Prerequisite: PSYC 512, PSYC 512L, PSYC 571.

### 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. Prerequisite: PSYC 571.

### PSYC 516. Neuropsychological Assessment. 2 Units.

Presents administering, scoring, interpreting, and report writing relevant to adult and child neuropsychological instruments. Considers empirical reliability and validity data for each instrument. Focuses on the use of flexible test collections tailored to assess neuropsychological disorders and neurological disorders. Emphasizes neuropsychological test integration, case conceptualization, and diagnostic inference. Prerequisite: PSYC 512, PSYC 512L, PSYC 571.

### 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. Prerequisite: PSYC 512, PSYC 512L.



**PSYC 524. History, Systems, and Philosophy of Psychology. 2 Units.**

Addresses the history and systems of psychology. Focuses on how approaches to psychology have defined the field, topics and information they have considered as a part of psychology, and acceptable mechanisms and criteria for advancing the field. Examines current trends and 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 537. Applied Behavioral Medicine. 3 Units.**

Provides students with a set of applied tools for use in the practice of behavioral medicine/health psychology in integrated settings, including: assessment and treatment of health behaviors such as use of substances, sleep, diet, and physical activity; relaxation training; motivational interviewing; behavioral pain management; and time-limited therapeutic interventions. Prerequisite: PSYC 721.

**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 550. Clinical Interventions with Service Members, Veterans, and Families. 2 Units.**

Provides multi-disciplinary understanding of military culture and skills and application of evidence-based clinical treatments that foster resilience and provide relief to service members, veterans and their families. Attention to issues of diversity, ethics, and use of self are included throughout clinical case discussion. Clinical issues specific to this population are discussed along with individual, family, and community interventions. Prerequisite: PSYC 721 or SOWK 757C. Cross-listing: COUN 550, SOWK 550.

**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 visuocognitive 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 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 565. Psychology of Religion. 3 Units.**

Psychology-based study of religion and spirituality. Focus on the five major world religious traditions, as well as atheism.

**PSYC 566. Cultural Psychology. 4 Units.**

Examines cross-cultural variations in psychological processes and human behavior. Focuses on cross-cultural research, theory, and interventions which address cross-cultural variations and the universality of psychological knowledge in a multicultural society and interdependent world. Includes personality, developmental, and social psychology in 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. Emphasizes effects of culture, ethnicity, and socioeconomic factors upon working with ethnic minorities, and mainstream individuals and groups. Examines the role of diverse cultural and socioeconomic factors in psychological processes, psychopathology, psychological assessment, and intervention.

**PSYC 568. Health Disparities and Inequalities. 3 Units.**

Examines health disparities based on social structural, cultural, psychological, behavioral, and biological factors relevant to health outcomes for diverse patient populations. Analyzes causal determinants of health disparities from the perspectives of patients and the communities in which they live, the health-care professional, and the health-care system. Special attention is given to the role of culture and how it influences health behaviors. Prerequisite: PSYC 554.

**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 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 574. Pediatric Health Psychology. 2 Units.**

Provides students with an understanding of the interdisciplinary area of pediatric psychology, including emotional and behavioral concerns related to a number of specific diseases and conditions across health-care settings. Reviews evidence-based assessment and treatment approaches used by pediatric psychologists working with children and adolescents with various medical conditions. Prerequisite or concurrent\*: PSYC 547.

**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. Prerequisite: PSYC 571, PSYC 721; or consent of instructor.

**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 child and family aspects of the integrated biopsychosocial-spiritual therapy model. Prerequisite: PSYC 571, PSYC 721.

**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 phenomenological and couple aspects of the integrated biopsychosocial-spiritual model. Prerequisite: PSYC 582, PSYC 571, PSYC 721; or consent of instructor.

**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. Prerequisite: PSYC 571, PSYC 721; or consent of instructor.

**PSYC 584L. Evidence-Based Psychological Practice IV. 1 Unit.**

Supervised experience observing and/or engaging in laboratory assignments. Prerequisite: PSYC 571. Corequisite: PSYC 584.

**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. 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 604A. Advanced Topics in Multivariate Analyses I. 2 Units.**

First of a two-part rotating selection of advanced topics in statistical analysis and research methods in psychology. Topics vary by quarter and include, for example, multilevel modeling and structural equation modeling. Prerequisite: PSYC 501 or CFS 601; or other previous experience with introductory statistics and regression analysis.

**PSYC 604B. Advanced Topics in Multivariate Analyses II. 2 Units.**

Second of a two-part rotating selection of advanced topics in statistical analysis and research methods in psychology. Topics vary by quarter and include, for example, multilevel modeling and structural equation modeling. Prerequisite: PSYC 503, PSYC 604A.

**PSYC 654. Behavioral Neurology. 2 Units.**

Examines the intersection of the fields of neurology and neuropsychology. Focuses on the pathophysiology, assessment, diagnosis, and treatment of various adult and child brain disorders. Covers material useful for neuropsychological test integration, case conceptualization, and diagnostic decision-making; as well as information necessary for the neuropsychologist to function as a member of a clinical team.

**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 681. Clinical Supervision and Consultation. 2 Units.**

Addresses competency-based clinical supervision approaches, and basic models and theories of supervision. Presents professional, ethical, and legal parameters related to supervision. Includes principles, methods, and techniques of individual, group, and live supervision. Emphasizes consultation and 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 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. 3 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 687. Mindfulness Interventions and Stress Management. 2 Units.**

Teaches mindfulness—deliberately paying attention to one's present moment experience with openness, curiosity, and a willingness to be with the experience as it is. Includes instruction and guided practice of both formal mindfulness meditation and "daily life" mindfulness practices. Also covers the stress response and effects of trauma as well as research on the neuroscience and benefits of mindfulness.

**PSYC 688. Modular Cognitive Behavioral Therapy for Children and Adolescents. 3 Units.**

Provides a foundation for delivering an evidence-informed modular approach to cognitive behavioral therapy for children.

**PSYC 689. Dialectical Behavior Therapy Skills Training. 2 Units.**

Provides overview and basic training in Dialectical Behavior Therapy (DBT) involving emotion dysregulation. DBT is a comprehensive treatment including several modes (e.g. individual psychotherapy, group skills training, etc.), specifically designed for multi-problem, difficult-to-treat clients and based on three systems of thought, each integral to successful treatment.

**PSYC 694. Seminar in Advanced Topics in Psychology. 1-4 Units.****PSYC 695. Spirituality Integration Seminar. 1 Unit.**

Integration of faith, religion, and/or spirituality with social sciences. Clinical and theoretical applications, scientific studies.

**PSYC 696. Psy.D. Doctoral Research. 1-4 Units.**

Requires involvement of clinical psychology Psy.D. students in doctoral research in the context of a faculty member's lab. Students meet weekly as a group with a faculty instructor to discuss theoretical, conceptual, and practical issues related literature review, research design, the IRB application process, data collection, data analysis, and dissemination of results through peer-reviewed presentations consistent with the practitioner-scholar model. Prerequisite: PSYC 502, PSYC 505; and admission to Psy.D. degree program.

**PSYC 697. Ph.D. Doctoral Research. 1-4 Units.**

Requires involvement of clinical psychology Ph.D. students in doctoral research in the context of a faculty member's lab. Students will meet weekly as a group with a faculty instructor to discuss theoretical, conceptual, and practical issues related to literature review, research design, the IRB application process, data collection, data analysis, and dissemination of results through peer-reviewed publications/presentations consistent with the scientist-practitioner model.

**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. Prerequisite: PSYC 571.

**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. Prerequisite: PSYC 571, PSYC 721.

**PSYC 782. External Practicum. 4 Units.**

Provides a pre-internship level of clinical psychology training through intensive, extensive, and continuous clinical psychology experience. Includes, access to practicing psychologists and role models; experience in psychological assessment, diagnostic conceptualizations, and scientifically based treatment regimens; and exposure to ethical, legal, and professional standards in clinical psychology. Prerequisite: PSYC 781.

**PSYC 795. Directed Clinical Experience. 1-3 Units.**

Serves as elective course for students desiring to obtain supplemental clinical experiences beyond those required for degree completion (internal practicum, external practicum, pre-internship, and/or internship).

**PSYC 798. Pre-Internship. 4 Units.**

Clinical experience for students who have successfully completed the practicum year. Prerequisite: PSYC 782.

**PSYC 799A. Internship. 5 Units.**

A one-year internship completed at either an APA- or APPIIC-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. Prerequisite: PSYC 798.

**PSYC 799B. Internship. 10 Units.**

A one-year internship completed at either an APA- or APPIIC-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. Prerequisite: PSYC 798.

## Public Health—Conjoint (PHCJ)

### Courses

**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 600. Overview of Research Methodologies. 3 Units.**

The basis and limits of science. Enhances understanding of the basic elements of observational, quantitative, qualitative, mixed methods, and policy analysis methods in scientific and evaluation research. Critically evaluates published research. Considers the multiple levels of analysis (individual, group, organization, community and population). For doctoral students only. Prerequisite or concurrent: STAT 509.

**PHCJ 606. Public Health Fundamentals. 4 Units.**

Provides an overview of three areas of public health: health behavior, environmental health, and public health policy. Introduces key health behavior-change theories and psychosocial determinants of health behaviors. Introduces rural and urban environmental factors that affect human-health status, enjoyment of the quality of life, and human survival. Introduces concepts of the health policy process and factors that impact health and access to health care. Open to Non-MPH degree students only.

**PHCJ 607. Professional Leadership. 3 Units.**

An applied course that exposes students to leadership styles and applications within public health and health-care settings, and in which students explore and develop their personal leadership attributes.

**PHCJ 608A. Doctoral Seminar for Public Health. 1 Unit.**

Provides a venue for reviewing, appraising, and writing scientific literature; enhancing skills in critical thinking and professional presentations; and interacting with faculty, peers, and public health practitioners in the discussion of scientific papers and professional development.

**PHCJ 608B. Doctoral Seminar for Public Health. 1 Unit.**

Provides a venue for reviewing, appraising, and writing scientific literature; enhancing skills in critical thinking and professional presentations; and interacting with faculty, peers, and public health practitioners in the discussion of scientific papers and professional development. Students enroll the during the Fall, Winter, and Spring quarters of their first year in the doctoral program for a total of 3 units.

**PHCJ 608C. Doctoral Seminar for Public Health. 1 Unit.**

Provides a venue for reviewing, appraising, and writing scientific literature; enhancing skills in critical thinking and professional presentations; and interacting with faculty, peers, and public health practitioners in the discussion of scientific papers and professional development. Prerequisite: PHCJ 608A, PHCJ 608B.

**PHCJ 609. Building Healthy Individuals. 3 Units.**

Uses theoretical principles to develop culturally sensitive public health interventions for a variety of settings: community, occupational, educational, and health care. Prepares students to assess population's knowledge and learning needs, to practice communication skills by developing level-appropriate educational materials, and to collaborate with other professionals to develop interdisciplinary approaches to improve public health.

**PHCJ 610. Building Healthy Communities. 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 to build healthy communities. Explores and analyzes in depth how these partnerships have worked together to make positive health improvements through effective policies and programs.

**PHCJ 614. Pedagogy: The Art and Science of Teaching. 2 Units.**

Provides an overview of pedagogical principles such as adult learning theories, curriculum development, instructional effectiveness, and evaluation. Develops skills to identify learning needs of a population and promote learning in academia and in organizational and community settings.

**PHCJ 615. Intermediate Biostatistics. 3 Units.**

Multivariable biostatistics. Introduces analysis of variance, analysis of covariance, repeated measures, linear and binary regression, and data reduction. Includes a discussion of nonparametric tests. Emphasizes selection of a statistical procedure, using statistical software, interpreting and reporting results. Prerequisite: STAT 509, STAT 548 or STAT 549; or consent of instructor.

**PHCJ 616. Administrative Systems in Agency Management. 3 Units.**

Reviews the administrative systems and knowledge necessary to manage public health, health-care, and other agencies. Topics include budgeting and financial management, inclusion and equity in agency management, human resources, interpreting financial statements and analyses, governance, strategic planning, elements in resource generation (fundraising and grant-writing), and leadership for health-care improvement and patient outcomes.

**PHCJ 617. Building Healthy Systems. 3 Units.**

Develops advanced public health leadership in building sustainable health systems. Evaluates linked health agendas, structures, and functions to promote performance goals. Creates skills to evaluate and address population health goals. Identifies opportunities for health systems analysis and strengthening that address health outcomes. Explains applied research methods, tools, and frameworks for carrying out the changes and interventions that bolster policies and promote health equity.

**PHCJ 618. Transformative Communication. 2 Units.**

Prepares doctoral students to communicate public health science effectively and with purpose to diverse stakeholders. Includes general theories of communication; development of a personal philosophy of communication; and use of thoughtful visual aids, including images and media, to enhance communication.

**PHCJ 624A. Scientist Forum. 1 Unit.**

Provides a venue for acquiring critical thinking skills to appraise scientific literature in the field; understand the ethical principles undergirding the teaching, research, and practice of public health; analyze, think, act, and behave like a scientist; be competent in conducting human research; and actively participate in the dissertation proposal/dissertation defense presentations by peers.

**PHCJ 624B. Scientist Forum. 1 Unit.**

Presents elements of proposal writing. Includes student utilization of the framework and development of the concept paper and the dissertation proposal, which includes the first three chapters of the dissertation. Provides a venue for continued professional development of the student through interaction with peers and faculty within the discipline. Prerequisite or concurrent: PHCJ 624A.

**PHCJ 624C. Scientist Forum. 1 Unit.**

Presents core elements of grant writing. Students identify an appropriate funding organization or agency and write and submit a grant. Serves as a forum for continued professional development through participation in peer-proposal defense and dissertation defenses. Prerequisite or concurrent: PHCJ 624A, PHCJ 624B.



**PHCJ 630. Concepts and Practical Issues of Secondary Data. 3 Units.**

Covers secondary data analyses across public health disciplines. Includes: advantages and limitations of secondary analyses; sources of secondary data; developing appropriate hypotheses; sampling methods; subject selection; downloading and cleaning secondary data; missing data; operationalizing relevant variables; and, applying statistical analyses.

**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 698. Doctoral Project. 1-4 Units.**

Provides Dr.P.H. degree students with the opportunity to integrate and apply classroom learning through field-based projects consistent with advanced practice designed to influence programs, policies, or systems addressing public health. Final project allows students to integrate both foundational and concentration- specific competencies. Prerequisite: Advancement to candidacy.

**PHCJ 795. Applied Practice. 2 Units.**

Provides Dr.P.H. degree students with the opportunity to integrate and apply classroom learning through an applied practice experience in which they complete at least one project meaningful for an organization and to advanced public health practice.

**PHCJ 798A. Public Health Practicum. 2 Units.**

Practicum integrating public health coursework into professional settings in public health. Includes a minimum of 100 clock hours.

**PHCJ 798B. Public Health Practicum. 4 Units.**

Practicum integrating public health coursework into professional settings in public health. Includes a minimum of 200 clock hours.

**PHCJ 798C. Public Health Practicum. 6 Units.**

Practicum integrating public health coursework into professional settings in public health. Includes a minimum of 300 clock hours.

**PHCJ 798D. Public Health Practicum. 8 Units.**

Practicum integrating public health coursework into professional settings in public health. Includes a minimum of 400 clock hours.

## Public Health Core (PCOR)

### Courses

**PCOR 501. Public Health for Community Resilience. 5 Units.**

Provides an integrated public health core experience focusing on the health of communities and leading to community engagement. Introduces service learning. Major focus areas include biostatistics, health policy and management, environmental health sciences, epidemiology, and social behavioral sciences (health education). Also includes general public health principles and cross-cutting content as viewed through the lenses of faith, health equity, and global health.

**PCOR 502. Public Health for a Healthy Lifestyle. 5 Units.**

Provides an integrated public health core experience focusing on the health of individuals, identifying factors influencing behavioral and physical health. Introduces service learning. Major focus areas include biostatistics, health policy and management, environmental health sciences, epidemiology, and social behavioral sciences (health education). Also includes general public health principles and cross-cutting content as viewed through the lenses of faith, health equity, and global health. Prerequisite: PCOR 501.

**PCOR 503. Public Health and Health Systems. 5 Units.**

Provides an integrated public health core experience focusing on health systems. Includes policy and advocacy for health issues, as well as structure and function of health systems. Major focus areas include biostatistics, health policy and management, environmental health sciences, epidemiology, and social behavioral sciences (health education). Also includes general public health principles and cross-cutting content as viewed through the lenses of faith, health equity, and global health.

## 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 (RTCH)

### Courses

**RTCH 250. Clinical Orientation, Legal, & Professional Standards. 3 Units.**

Provides clinical orientation to legal and professional standards for radiologic technologists. Clinical environment orientation conducted at affiliated clinical sites.

**RTCH 284. Basic Imaging. 3 Units.**

Introduces essentials of radiologic technology imaging procedures, radiographic anatomy, and medical terminology.

**RTCH 284L. 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 Radiation. 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 305. CT Fundamentals. 2 Units.**

Overview of computed tomography (CT) concepts, including cross-sectional anatomy, physics, and clinical procedures.

**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 324. Introduction to CT and Imaging Modalities. 3 Units.**

Introduces basic principles, physics, imaging parameters, radiological effects, management, and patient protocol of computed tomography (CT). Provides an overview of imaging modalities for the purpose of emphasis selection.

**RTCH 325. Applications for Managers. 2 Units.**

Introduces prospective radiology managers and administrators to the basic common applications found in health care.

**RTCH 327. Professional Development. 1 Unit.**

Examines state and national radiography organizations and continuing education requirements. Reviews professional values and codes of ethics.



**RTCH 371. Radiography Clinical Affiliation I. 2 Units.**

Provides hands-on clinical 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. First part of ten-part affiliation sequence that fulfills state requirements for clinical hours in medical radiography.

**RTCH 372. Radiography Clinical Affiliation II. 3 Units.**

Continues clinical experience from RTCH 371. Prerequisite: RTCH 371.

**RTCH 373. Radiography Clinical Affiliation III. 3 Units.**

Continues clinical experience from RTCH 372. Prerequisite: RTCH 372.

**RTCH 374. Radiography Clinical Affiliation IV. 3 Units.**

Continues clinical experience from RTCH 373. Prerequisite: RTCH 373.

**RTCH 375. Radiography Clinical Affiliation V. 3 Units.**

Continues clinical experience from RTCH 374. Prerequisite: RTCH 374.

**RTCH 376. Radiography Clinical Affiliation VI. 3 Units.**

Continues clinical experience from RTCH 375. Prerequisite: RTCH 375.

**RTCH 377. Radiography Clinical Affiliation VII. 1 Unit.**

Continues clinical experience from RTCH 376. Prerequisite: RTCH 376.

**RTCH 378. Radiography Clinical Affiliation VIII. 1 Unit.**

Continues clinical experience from RTCH 377. Prerequisite: RTCH 377.

**RTCH 379. Radiography Clinical Affiliation IX. 1 Unit.**

Continues clinical experience from RTCH 378. Prerequisite: RTCH 378.

**RTCH 380. Radiography Clinical Affiliation X. 1 Unit.**

Continues clinical experience from RTCH 379. Prerequisite: RTCH 379.

**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 upon entry-level academic writing experience by advancing skills in the following areas: avoiding plagiarism, developing academic writing, organizing research materials, synthesizing sources, formatting papers in APA style, and writing a literature review.

**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. Practicum in Radiation Sciences. 3 Units.**

A project-based course with opportunity to demonstrate curriculum-related knowledge and skills in applied settings. Emphasizes practical application of management or educational theory through assigned projects, observation, and discussion involving mentors within administrative or educational roles in the medical imaging professions.

**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.**

Integrates health information management systems and radiology coding for prospective radiology managers and administrators. Introduction to health information systems and radiology coding to promote smooth running of a radiology department. Introduces current health information technology guidelines, tools, and concepts behind accurate coding and policy.

**RTCH 450. Advanced Radiography Clinical Affiliation. 3 Units.**

Provides students with clinical experience working with staff technologists and physicians, performing the functions, skills, and procedures in advanced medical imaging areas such as orthopedics, trauma, GI, pediatrics, etc., in preparation for the ARRT registry exam.

**RTCH 454. Computed Tomography Clinical Affiliation. 3 Units.**

Clinical experience working with staff technologists and physicians, performing functions, skills, and procedures expected of computed tomography (CT) technologists in preparation for the ARRT registry exam.

**RTCH 455. Magnetic Resonance Imaging Clinical Affiliation. 3 Units.**

Clinical experience working with staff technologists and physicians, performing the functions, skills, and procedures expected of magnetic resonance imaging (MR) technologist in preparation for the ARRT registry exam.

**RTCH 456. Cardiac Interventional Clinical Affiliation. 3 Units.**

Clinical experience working with staff technologists and physicians, performing functions, skills, and procedures expected of cardiac interventional (CI) technologist in preparation for the ARRT registry exam.

**RTCH 457. Vascular Interventional Clinical Affiliation. 3 Units.**

Clinical experience working with staff technologists and physicians. Perform the functions, skills, and procedures expected of vascular interventional (VI) technologist in preparation for the ARRT registry exam.

**RTCH 458. Mammography Clinical Affiliation. 3 Units.**

Provides students with clinical experience working with staff technologists and physicians, performing the functions, skills, and procedures in mammographic imaging such as MQSA, patient care, procedures, techniques, etc., in preparation for the ARRT registry exam.

**RTCH 464. Moral Leadership. 3 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 480. Mammography Principles and Procedures. 3 Units.**

Presents breast anatomy, physiology, and pathology, with emphasis on breast cancer, risk factors, and detection techniques. Emphasizes mammography imaging, positioning, instrumentation requirements, quality assurance, and mammographic techniques.

**RTCH 484. Mammography Certification Review. 1 Unit.**

Provides a comprehensive review for the ARRT examination in mammography (M). Prerequisite: RTCH 480.

**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 486. Fundamentals of Breast Ultrasound. 3 Units.**

Presents breast anatomy, physiology and pathology, mammography imaging, positioning, and instrumentation requirements relating to the use of sonography in detecting abnormalities in the breast. Includes basic physics and principles of sonography. Prerequisite: RTCH 480.

**RTCH 487. Advanced Radiography Procedures in Trauma. 2 Units.**

Introduces various radiographic procedures, which include anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding specific to patients in a trauma situation. Prerequisite: RTMR 255.

**RTCH 488. Advanced Radiography Procedures in Orthopedics and Pediatrics. 3 Units.**

Introduces students to various radiographic procedures, which include anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding specific to patients in outpatient orthopedic and pediatric environments. Prerequisite: RTMR 255.

**RTCH 489. Effective Communication for Supervisors. 3 Units.**

Helps managers and supervisors build effective skills in the following areas: interpersonal skills, business writing, verbal and nonverbal communication, modes of communication, coaching, and conflict resolution.

**RTCH 491. Portfolio I. 3 Units.**

Guides and supports students in their progress toward building competence as allied health practitioners and members of their community.

**RTCH 492. Portfolio II. 3 Units.**

Builds upon Portfolio I, synthesizing student learning and demonstrating progress toward meeting SAHP and program outcomes (including diversity) and beyond. Prerequisite: RTCH 491.

**RTCH 497. Advanced Clinical Experience. 2 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 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 415. Teaching Practicum in the Radiation Sciences. 3 Units.**

A project-based course in which B.S. degree radiation science students have the opportunity to demonstrate curriculum-related knowledge and skills in applicable settings.

**RTED 474. Instructional Techniques for the Radiation Sciences. 3 Units.**

Prepares B.S. degree students in the Radiation Science Program to create learning environments in medical imaging-related courses and clinical education. Students learn to create course content, develop presentations, design lessons, and evaluate learning.

**RTED 475. Curriculum Development for the Radiation Sciences. 3 Units.**

Prepares B.S. degree students in the Radiation Sciences Program to develop curricula in medical imaging-related programs and clinical environments. Includes curriculum development approaches, implementation, and evaluation for effectiveness in the clinical environment.

**RTED 476. Adult Learning Theory for the Radiation Science Student. 3 Units.**

Examines teaching and learning from theoretical perspectives as B.S. degree students in the Radiation Sciences Program relate to employment within the radiation science education and clinical education fields.

**RTED 477. Learning Activities and Assessment for the Radiation Sciences. 3 Units.**

Investigates active learning techniques, integration, and assessment approaches in imaging-related programs and clinical environments.

**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 484. Learning Environments for Radiation Science Students. 3 Units.**

Prepares B.S. degree students in the Radiation Science Program in topics related to models, learning environments, and measures of success in medical imaging educational contexts.

**RTED 485. Digital Design for the Radiation Sciences. 3 Units.**

Utilizing a variety of platforms, introduces available digital technologies and explains key elements necessary to engage medical imaging students.

**RTED 487. Issues in Radiation Sciences. 3 Units.**

Prepares B.S. degree students in the radiation sciences to focus primarily on scholarly journal publications as they explore prevailing issues related to classroom and clinical education in the radiation sciences.

## Radiation Technology/Imaging Informatics (RTII)

### Courses

**RTII 354. Introduction to Informatics. 3 Units.**

Overview of computer fundamentals. Provides in-depth insight into a picture-archiving and communication system (PACS). Includes, basic terminology, computed radiography, digital radiography, hospital information systems, radiology information systems, DICOM, and HL-7.

**RTII 356. Information Technology in Radiology. 3 Units.**

Principles of developing and maintaining a radiology health care network. Addresses network design, critical problem-solving, and troubleshooting. Includes basic terminology, network components, network design and implementation, storage and archive assessment, hardware and software implementation databases, IT standards, and IT replacement schedules.

**RTII 358. PACS Planning and Implementation. 3 Units.**

Presents steps needed to 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. Develops critical thinking for planning, team-building, and project management.

**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. 1 Unit.**

An in-depth study of advanced imaging informatics integration standards and informatics architecture designs required of a picture archiving and communications system (PACS) administrator.

**RTII 386. Certification Exam Review. 2 Units.**

Reviews major content areas emphasized on the American Board of Imaging Informatics (ABII) board exam. Provides student evaluation and performance analysis using simulated board exams.

## 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 Mathematics 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. Cross-listing: RTTH 355.

**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. Cross-listing: RTTH 356.

**RTMD 960. Practicum. 11 Units.**

Applies theoretical knowledge of dosimetry in practical ways. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Integrates students into the dosimetry and physics team, with opportunities to work with various kinds of treatments and treatment beams. Per week: thirty-six hours. Prerequisite: Enrollment in B.S. mathematics/physics track.

**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.**

Applies theoretical knowledge of dosimetry in practical ways. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Integrates students into the dosimetry and physics team, with opportunities to work with various kinds of treatments and treatment beams. Per week: thirty-six hours. Prerequisite: Enrollment in B.S. mathematics/physics track.

**RTMD 965. Practicum. 11 Units.**

Applies theoretical knowledge of dosimetry in practical ways. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Integrates students into the dosimetry and physics team, with opportunities to work with various kinds of treatments and treatment beams. Per week: thirty-six hours. Prerequisite: Enrollment in B.S. mathematics/physics track.

**RTMD 970. Practicum. 11 Units.**

Applies theoretical knowledge of dosimetry in practical ways. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Integrates students into the dosimetry and physics team, with opportunities to work with various kinds of treatments and treatment beams. Per week: thirty-six hours. Prerequisite: Enrollment in radiation therapy track.

**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.**

Applies theoretical knowledge of dosimetry in practical ways. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Integrates students into the dosimetry and physics team, with opportunities to work with various kinds of treatments and treatment beams. Per week: thirty-six hours. Prerequisite: Enrollment in radiation therapy track.

**RTMD 975. Practicum. 11 Units.**

Applies theoretical knowledge of dosimetry in practical ways. Includes external beam treatment planning, monitor unit calculations, brachytherapy, and quality assurance procedures as they pertain to dosimetry practice. Integrates students into the dosimetry and physics team, with opportunities to work with various kinds of treatments and treatment beams. Per week: thirty-six hours. Prerequisite: Enrollment in radiation therapy track.

# Radiation Technology/Medical Radiography (RTMR)

## Courses

**RTMR 095. Survey of Radiation Sciences. 1 Unit.**

Develops students' interest in and knowledge of the radiation sciences by exploring each of the specialties in the field, such as radiography, CT, MRI, nuclear medicine, diagnostic medical sonography, cardiac sonography, radiation therapy, dosimetry, cardiovascular imaging, imaging informatics, radiologist assistant, mammography, radiology education, and radiology administration. Students develop a career and an education plan.

**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 patient care during radiographic procedures. Emphasizes patient care in the ER and OR, and during contrast procedures. Topics include radiographic professional organizations, ARRT code of ethics, personal balance and health, critical thinking and problem solving, pharmacology, medical abbreviations, spirituality in health care, challenging patient situations, and immobilization techniques.

**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 & Presentation. 2 Units.**

Provides an understanding of the professional communication and presentation skills needed to succeed as an entry-level radiographer. Topics include personality assessments, interpersonal communication, conflict resolution, moral courage, patient communication, and professionalism. 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. 3 Units.**

Introduces various radiographic procedures, including anatomy, patient positioning, geometric factors, exposure techniques, image evaluation 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. 3 Units.**

Introduces students to various radiographic procedures, which include anatomy, patient positioning, geometric factors, exposure techniques, image evaluation and patient shielding. Prerequisite: 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 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 324. Radiographic Image Evaluation and Pathology. 3 Units.**

Expands upon the fundamental image evaluation knowledge acquired in RTMR 253, 254, and 255. Advances understanding of image evaluation with reference to pathology, radiographic anatomy, patient positioning, geometric factors, exposure techniques, and patient shielding.

**RTMR 325. Radiologic Pathology. 1 Unit.**

Reviews the pathologic processes most commonly viewed by radiographers using radiologic imaging methods. Prerequisite: RTMR 253, RTMR 254, RTMR 255.

**RTMR 344. Professional Development and Service Learning. 3 Units.**

Overview of radiologic specialties. Examines state and national radiography organizations and continuing education requirements. Reviews professional values and codes of ethics.

**RTMR 363. Comprehensive Review I. 2 Units.**

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 384. Topics in Medical Radiography. 1-3 Units.**

Lecture and discussion of a current topic in medical radiography bearing on the theory or practice of one aspect of the discipline. Specific content varies from quarter to quarter.

**RTMR 386. Medical Radiography Affiliation VI. 10 Units.**

Continues RTMR 371, 372, 373, 374, and 375.

## 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 361. Cardiac Sonography Clinical Affiliation. 8 Units.**

Cardiac clinical affiliate includes 320 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams.

**RTMS 362. Cardiac Sonography Clinical Affiliation. 8 Units.**

Cardiac clinical affiliate includes 320 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams. Prerequisite: RTMS 361.

**RTMS 363. Cardiac Sonography Clinical Affiliation. 8 Units.**

Cardiac clinical affiliate includes 320 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams. Prerequisite: RTMS 362.

**RTMS 364. Cardiac Sonography Clinical Affiliation. 8 Units.**

Cardiac clinical affiliate includes 320 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams. Prerequisite: RTMS 363.

**RTMS 371. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience.

**RTMS 372. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 371.

**RTMS 373. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 372.

**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 384. Topics in Medical Sonography. 1 Unit.**

Surveys selected topics in medical sonography. Procedure summaries, projects, literature reviews.

**RTMS 385. Board Review Echocardiography. 2 Units.**

Case presentations by faculty and students reviewing vast variety of pathologies, as well as normal anatomy. Prerequisite: RTMS 339, RTMS 347.

**RTMS 386. Echocardiographic Case Studies Adult and Pediatrics. 2 Units.**

Case presentations by faculty and students reviewing normal anatomy and variety of pathologies in adult and pediatric cases. Prerequisite: RTMS 339, RTMS 347.

**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. Prerequisite: RTMS 379.

**RTMS 421. Board Review OB-GYN Sonography. 1 Unit.**

Board review presented in case study format; normal and pathologies involved in ultrasound evaluation of the OB-GYN specialty. Prerequisite: Completion of the first year of the medical sonography program.

**RTMS 422. Board Review Abdomen. 2 Units.**

Board review presented in case study format. Normal scans and pathologies involved in a wide variety of abdominal and small part ultrasound examinations. Prerequisite: RTMS 421.

**RTMS 423. Board Review Vascular. 1 Unit.**

Board review presented in case study format; normal and pathologies involved in a wide range of vascular ultrasound examinations. Prerequisite: RTMS 422.

**RTMS 424. Professionalism in Medical Sonography. 1 Unit.**

Presents a variety of topics to develop professionalism and prepare graduates for the work force. Topics include writing a resume/CV, interviewing, and communication. Prerequisite: RTMS 421, 422, 423.

**RTMS 471. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 373.

**RTMS 472. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 471.

**RTMS 473. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 472.

**RTMS 474. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 473.

**RTMS 475. General Vascular Clinical Affiliation. 8 Units.**

General vascular affiliate includes 320 clock hours of observation and hands-on experience, and a variety of patient exams including general abdomen, ob-gyn and vascular. Includes identification of a variety of normal and pathological cases throughout the training experience. Prerequisite: RTMS 474.

**RTMS 965. Cardiac Ultrasound Clinical Affiliation. 8 Units.**

Cardiac clinical affiliate includes 364 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams.

**RTMS 966. Cardiac Ultrasound Clinical Affiliation. 8 Units.**

Cardiac clinical affiliate includes 363 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams.

**RTMS 967. Cardiac Ultrasound Clinical Affiliation. 10 Units.**

Cardiac clinical affiliate includes 420 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams.

**RTMS 968. Cardiac Ultrasound Clinical Affiliation. 10 Units.**

Cardiac clinical affiliate includes 418 clock hours of observation and hands-on experience, and a variety of cardiac echocardiograms. Includes adult, pediatric and fetal cardiac exams.

## 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.**

Addresses nuclear medicine procedures used to image, diagnose, and treat disease with radiopharmaceuticals. Identifies use of radionuclides to image the endocrine, cardiovascular, respiratory, and skeletal systems. Includes patient preparation for scans, routes of administration of radiopharmaceuticals, methods of localization for organ imaging, radiopharmacy, and quality control.

**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.**

Addresses nuclear medicine procedures used to image, diagnose, and treat disease with radiopharmaceuticals. Identifies use of radionuclides to image the endocrine, cardiovascular, respiratory, and skeletal systems. Includes patient preparation for scans, routes of administration of radiopharmaceuticals, methods of localization for organ imaging, radiopharmacy, and quality control.

**RTNM 354L. Nuclear Medicine Procedures II Laboratory. 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. 3 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 366. Medical Informatics. 1 Unit.**

Covers information technology systems used in the health care setting. Reviews the importance of accurate documentation. Discusses the relevance of checking patient history and laboratory results using electronic medical/health record systems.

**RTNM 421. Comprehensive Review of Nuclear Medicine I. 3 Units.**

Reviews physics, instrumentation, procedures, imaging, and radiopharmaceutical theories in preparation for national registries.

**RTNM 422. Comprehensive Review of Nuclear Medicine II. 3 Units.**

Surveys selected topics in nuclear medicine. Procedure summaries, projects, literature reviews.

**RTNM 430. Clinical Affiliation Introduction. 1 Unit.**

First in a series of seven consecutive courses completed during the program. Provides students with clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist and the nuclear medicine procedures involved in patient care. Clinical assignments one day per week, eight hours per day.

**RTNM 431. Clinical Affiliation I. 2 Units.**

Second in a series of seven consecutive courses completed during the program. Provides students with clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist and the nuclear medicine procedures involved in patient care. Clinical assignments two days per week, eight hours per day. Prerequisite: RTNM 430.

**RTNM 432. Clinical Affiliation II. 3 Units.**

Third in a series of seven consecutive courses completed during the program. Provides students with clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist and the nuclear medicine procedures involved in patient care. Clinical assignments three days per week, eight hours per day. Prerequisite: RTNM 430, RTNM 431.

**RTNM 433. Clinical Affiliation III. 4 Units.**

Fourth in a series of seven consecutive courses completed during the program. Provides students with clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist, as well as the nuclear medicine procedures involved in patient care. Clinical assignments four days per week, eight hours per day. Prerequisite: RTNM 430, RTNM 431, RTNM 432.

**RTNM 434. Clinical Affiliation IV. 4 Units.**

Fifth in a series of seven consecutive courses completed during the program. Provides students with clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist, as well as the nuclear medicine procedures involved in patient care. Clinical assignments four days per week, eight hours per day. Prerequisite: RTNM 430, RTNM 431, RTNM 432, RTNM 433.

**RTNM 435. Clinical Affiliation V. 4 Units.**

Sixth of seven courses providing clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist and nuclear medicine procedures involved in patient care. Clinical assignments four days per week, eight hours per day. Prerequisite: RTNM 430, RTNM 431, RTNM 432, RTNM 433, RTNM 434.

**RTNM 436. Clinical Affiliation VI. 4 Units.**

Seventh of seven courses providing clinical experience working with staff technologists and physicians, performing the functions expected of a nuclear medicine technologist, and nuclear medicine procedures involved in patient care. Clinical assignments four days per week, eight hours per day. Prerequisite: RTNM 430, RTNM 431, RTNM 432, RTNM 433, RTNM 434, RTNM 435.

## Radiation Technology/Radiation Sciences (RTRS)

### Courses

**RTRS 578. Health-Care Financial Management. 3 Units.**

Investigates methods of applying financial management strategies from a radiology perspective. Demonstrates the fundamentals of finance, generating revenue, controlling costs, planning for the future, and financial organizational issues.

**RTRS 584. Management of Imaging Informatics. 3 Units.**

Study of operational and managerial issues essential to radiology information, and picture archiving and communication systems as related to electronic health records. Includes basic architecture concepts, needs assessment and procurement strategies, vendor selection and contract negotiation, workflow assessment and design, implementation and education, and quality assurance strategies in a filmless environment.

**RTRS 589. Communication and Strategic Planning. 3 Units.**

Discusses how effective communication and strategic planning are central to leading people, organizations, and change. Emphasis on communication principles, strategic planning, and leadership.

**RTRS 621. Capstone Project I. 3 Units.**

The first of a two-course, online sequence. Students explore a relevant topic of interest, develop a literature review of publishable quality, and examine professional publication avenues.

**RTRS 622. Capstone Project II. 3 Units.**

The second course in a two-course, online sequence. Students explore aspects of professional presentation delivery and incorporate their Capstone I project to develop a presentation of professional quality.

## Radiation Technology/Radiation Therapy (RTTH)

### Courses

**RTTH 332. Radiation Biology. 2 Units.**

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 348. Radiation Therapy Review. 2 Units.**

Comprehensively reviews radiation physics, protection, and dosimetry. Applies radioactive materials. Radiobiology. Technical aspects of radiation oncology.

**RTTH 354. Quality Assurance in Radiation Therapy. 2 Units.**

Focuses on quality improvement in radiation oncology. Emphasizes development of a culture of safety through continuous quality improvement (CQI) for clinical and technical aspects of patient care, including treatment delivery and localization equipment, treatment planning equipment, and electronic medical records. Discusses the role of various radiation therapy team members in CQI, and legal and regulatory implications for provision of services.

**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. Cross-listing: RTMD 355.

**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. Prerequisite: RTTH 364, RTTH 365. Cross-listing: RTMD 356.

**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 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. Prerequisite: RTTH 364.

**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 371. Radiation Therapy Affiliation I. 2 Units.**

First of seven clinical affiliations.

**RTTH 372. Radiation Therapy Affiliation II. 3 Units.**

Continues RTTH 371.

**RTTH 373. Radiation Therapy Affiliation III. 3 Units.**

Continues RTTH 371, 372.

**RTTH 374. Radiation Therapy Affiliation IV. 5 Units.**

Continues RTTH 371-373.

**RTTH 375. Radiation Therapy Affiliation V. 5 Units.**

Continues RTTH 371-373, 374.

**RTTH 376. Radiation Therapy Affiliation VI. 4 Units.**

Continues RTTH 371-373, 374-375.

**RTTH 377. Radiation Therapy Affiliation VII. 4 Units.**

Continues RTTH 371-373, 374-376.



# Radiation Technology/Radiologist Assistant (RTRA)

## Courses

### 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 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-days/week rotation totaling 168 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 248 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.**

An eleven-week, three days/week rotation totaling 248 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.**

A twelve-week, three days/week rotation totaling 272 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 248 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 248 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/Special Imaging (RTSI)

### Courses

**RTSI 307. Introduction to Computed Tomography. 2 Units.**

Provides an overview of patient care in CT imaging, general aspects of patient care, pharmacology and drug administration, and radiation safety as a final requirement of the CT certificate. Examines some areas of radiology management. Prepares students for the additional areas required in the National Registry for the specialty area of CT. Prerequisite: Completion of the LLU Medical Radiography Program. Prerequisite: RTMR 305, RTMR 306.

**RTSI 344. Pharmacology for Imaging Professionals. 4 Units.**

Examines various pharmacological agents currently used in diagnosis and treatment during various imaging studies. Emphasizes laboratory values relevant to interventional studies.

**RTSI 345. Cardiac/Interventional Procedures. 3 Units.**

Examines the principles of cardiac interventional imaging to students who wish to become registered CI technologists. Includes the concepts of cardiac interventional procedures and how to operate safely in an operating room environment.

**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 352. Angio/Interventional Procedures II. 3 Units.**

Continues RTSI 351. Focuses on the procedures performed in the interventional laboratory. Analyzes the different types of pathologies observed in patients in order to determine the appropriate diagnostic and interventional examinations to be performed.

**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 359. Vascular Imaging Review. 1 Unit.**

A comprehensive review for the ARRT examination in vascular interventional radiography (VI). Prerequisite: RTSI 351, RTSI 356.

**RTSI 360. Cardiac Imaging Review. 1 Unit.**

A comprehensive review for the ARRT examination in cardiac interventional radiography (CI). Prerequisite: RTSI 345.

**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). Prerequisite: RTSI 361.

**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 384. Topics in Special Imaging. 1-3 Units.**

Lecture and discussion of a current topic in special imaging bearing on the theory or practice of one aspect of the discipline. Specific content varies from quarter to quarter.

**RTSI 455. Directed Study in Special Imaging. 1 Unit.**

Each student will be assigned three specialized imaging topics for the quarter. Requires submission of an Independent Study Proposal (ISP) and weekly meeting with instructor to review progress toward meeting the commitments within the ISP.

**RTSI 456. MRI Certification Review. 1 Unit.**

Provides a comprehensive review for the ARRT examination in magnetic resonance imaging (MRI).

**RTSI 457. CT Certification Review. 1 Unit.**

Provides a comprehensive review for the ARRT examination in computed tomography (CT).

**RTSI 970. Special Imaging (CT/MRI) Affiliation. 2,3 Units.**

A two- or four-days/week clinical rotation totaling 160-240 hours of clinical experience in CT (computerized tomography) and/or MRI (magnetic resonance imaging) covering a wide variety of technical procedures.

**RTSI 975. Cardiac/Interventional (CVI) Affiliation. 3 Units.**

Provides a four-day-per-week clinical rotation totaling 320 hours of clinical experience in cardiac and/or interventional radiology. Covers a wide variety of technical procedures.

## Radiology (RADS)

### Courses

**RADS 791. Integrated Clinical Radiology. 2 Units.**

Case-based, online, virtual-patient curriculum that is integrated with the required third-year clerkships. Introduces students to the American College of Radiology Appropriateness Criteria, as well as to the principles and applications of medical imaging.

**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.

## Rehabilitation Science (RESC)

### Courses

**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 total required 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 Units.**

Introduces practical ethics for health-care professionals. Draws on the Bible and other religious and philosophical writings.

**RELE 455. Christian Understanding of Sexuality. 2 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.

**RELE 456. Personal and Professional Ethics. 3 Units.**

The foundations, norms, and patterns of personal integrity and professional responsibility.

**RELE 457. Christian Ethics and Health Care. 2 Units.**

Ethical issues in modern medicine and related fields from the perspective of Christian thought and practice.

**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.

**RELE 505. Clinical Ethics. 3 Units.**

Case-based analysis of bioethics, with emphasis on clinical applications. Conceptual and historical readings in bioethics.

**RELE 515. Faith and Flourishing. 3 Units.**

Focuses on major Christian perspectives that have been offered and debated, ranging from models of cultural withdrawal to cultural engagement and transformation. Gives attention to contemporary articulations of various positions and their philosophical and theological assumptions, beginning with a critical examination of the typology made popular by H. Richard Niebuhr in his classic study, *Christ and Culture*. Cross-listing: RELT 515.

**RELE 522. Bioethical Issues in Social Work. 3 Units.**

Theoretical and practical dilemmas in bioethics. Contributions of social workers to these issues.

**RELE 524. Bioethics and Society. 3 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.

**RELE 525. Ethics for Scientists. 3 Units.**

Ethical aspects of scientific research, with emphasis on Christian contributions.

**RELE 534. Ethical Issues in Public Health. 3 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.

**RELE 535. Ethical Issues in Health-Care Management. 3 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.

**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 I. 1 Unit.**

Engages students in discussion of real-life cases in bioethics.

**RELE 546. Bioethics Case Conference II. 1 Unit.**

Engages students in discussion of real-life cases in bioethics.

**RELE 547. Bioethics Case Conference III. 1 Unit.**

Engages students in discussion of real-life cases in bioethics.

**RELE 548. Christian Social Ethics. 3 Units.**

Relationships between Christian beliefs and social theory and practice.

**RELE 554. Clinical Ethics Practicum I. 3 Units.**

First in a series of three graduate-level seminars in the master's degree program in bioethics. Theories and applications of ethics in the clinical setting. Introduces students to key concerns in clinical ethics. Provides for practical reasoning skills needed to solve the dilemmas and communication problems in and develop leadership skills in high-quality ethical health care. Prerequisite: Acceptance into the master's program in bioethics.

**RELE 555. Clinical Ethics Practicum II. 3 Units.**

The second in a series of three clinical ethics graduate-level seminars in the master's degree program in bioethics. Theories and applications of ethics in the clinical setting. Introduces students to key concerns in clinical ethics, and provides for practical reasoning skills needed to solve the dilemmas and communication problems in clinical settings and develop leadership skills in high-quality ethical health care. Prerequisite: RELE 554.

**RELE 556. Clinical Practicum III. 3 Units.**

The third in a series of three clinical ethics graduate-level seminars in the master's degree program in bioethics. Advanced theories and applications of ethics in the clinical setting. Introduces students to key concerns in clinical ethics, and provides practical reasoning skills needed to solve the dilemmas and communication problems in clinical settings and develop leadership skills in high-quality, ethical health care. Prerequisite: RELE 554.

**RELE 564. Ethics and Health Disparities. 3 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.

**RELE 565. Aesthetics and Ethics. 3 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. Uses visual representations of the body, exploring various views of health and illness as they relate to concepts of the good, the bad, and the ugly.

**RELE 566. History of Health-Care Ethics. 3 Units.**

Focuses on the lives of noteworthy figures in the health-care professions. Uses biographies, diaries, literature, and film to identify and analyze the moral virtues and vision of heroic physicians, nurses, and public health advocates from the ancient to the present.

**RELE 567. World Religions and Bioethics. 3 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.

**RELE 568. Bioethics and the Law. 3 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.

**RELE 577. Theological Ethics. 3 Units.**

Ethical implications of the primary theological legacies of Western culture.

**RELE 588. Philosophical Ethics. 3 Units.**

Critically assesses various theoretical approaches to ethics in Western culture. Applies theoretical constructs to cases illustrating poverty and health, health-care justice, and informed consent.

**RELE 589. Biblical Ethics. 3 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.

**RELE 598. Master's Seminar I. 3 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 Units.**

Advanced study of selected topics in Christian ethics.

**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.

**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 707. Ethics for Allied Health Professionals. 2,3 Units.**

Ethical issues, cases, and principles in the contemporary practice of allied health professionals. Christian and philosophical resources for ethical decision making.

**RELE 708. Medicine and Ethics. 1 Unit.**

Introduces the study of Christian medical ethics, emphasizing the personal integrity of the physician, the process of moral decision-making, and ethical problems facing contemporary medicine. Provides historical overview of developments in bioethics in the last century relating to topics such as abortion and euthanasia.

**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 504. Research Methods in Religious Studies. 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.

**RELG 505. Qualitative Research in Religious Studies. 3 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.

**RELG 510. Christian Service. 1,2 Unit.**

Student participates in approved service learning, with written reflection on Christian reasons for service. Additional service project and reflection required for second 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.

**RELG 696. Project. 3,4 Units.**

Arranges for advanced students to complete individualized study under the guidance of a program faculty member. May include preparation of publishable papers or other special projects.

**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. Prerequisite: Consent of instructor and of student's advisor.

**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 105. Introduction to Whole-Person Care. 1 Unit.**

Introduces the integration of psychosocial and spiritual care within the clinical setting.

**RELR 275. Whole Person Care. 2 Units.**

Integrates psychosocial and spiritual care in the clinical setting.

**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 Units.**

From a Christian perspective, overviews the family life cycle.

**RELR 409. Christian Perspectives on Death and Dying. 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.

**RELR 410. Compassion. 3 Units.**

Practical study of the art and science of compassionate living for health-care professionals.



**RELR 427. Crisis Counseling. 2 Units.**

Crisis phenomena, current crisis theory, a Christian model of crisis care, and the dynamics and practices of crisis care.

**RELR 429. Cultural Issues in Religion. 2 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.

**RELR 445. Wholeness and Health. 3 Units.**

Aids in formulation of a portfolio that incorporates a variety of activities related to biblical concepts of wholeness. Addresses the integration of mind/body/spirit, strengthening relationships, environmental care, and national healing from personal and professional perspectives.

**RELR 447. Cross-cultural Ministry. 2 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.

**RELR 447A. Service Learning Practicum—International Project. 1 Unit.**

Loma Linda University-sponsored international mission trip, facilitated by SIMS Program. Students engage in service activities, maintain a reflective journal while on the trip, and submit a final report summarizing the social-learning experience upon return. Prerequisite: RELR 447.

**RELR 455. Body, Intimacy and Sexuality in Whole Person Care. 2 Units.**

Focuses primarily on whole person patient care in the context of dealing with changes to body image, intimate relationships, and sexuality in the face of illness and injury. Explores a variety of issues relating to body and body image, intimate relations, gender, and sexuality for relevant patient populations; and the role of the health-care professional in bringing wholeness and healing in the face of sensitive and personal issues.

**RELR 475. Whole Person Care. 2 Units.**

Integrates psychosocial and spiritual care in the clinical setting.

**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. 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.

**RELR 508. Religion, Health-Care Policy, and Advocacy. 3,4 Units.**

Explores how Christian ethical visions shape definitions of health, concepts of just health-care policies, and faithful motivation for taking action to improve the health of communities. Encourages students to be participant-observers in programs of effective health-care advocacy. Students taking the course for 4 units will meet for an additional hour each week to learn more about theory and practice of advocacy for health policy change.

**RELR 520. Clinical Training in Spiritual Care I. 4 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 health care as understood through a theological lens.

**RELR 521. Clinical Training in Spiritual Care II. 4 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 health care as understood through a theological lens.

**RELR 525. Health Care and the Dynamics of Christian Leadership. 3 Units.**

Christian principles of leadership in the community and in the practice of health care.

**RELR 526. Pastoral and Professional Formation. 4 Units.**

Introduces students to the professional requirements of working as a chaplain in a health-care setting. Involves learning to function pastorally within boundaries of authority, integrate theology with the practice of spiritual care, and make appropriate ethical decisions as part of an interdisciplinary spiritual care team.

**RELR 527. Crisis Care and Counseling. 3 Units.**

Crisis phenomena, current crisis theory, a Christian model of crisis care, and the dynamics and practices of crisis care.

**RELR 530. Spirituality and Clinical Psychology. 3 Units.**

Examines the positive resources of both religion and spirituality in the lives of clients, as well as the ways in which they can become linked to psychopathology. Outlines the spiritual aspects of the therapeutic relationship, including the use of spiritual interventions as an aspect of psychotherapy. Cross-listing: RELT 530.

**RELR 535. Spirituality and Mental Health. 3 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. Prerequisite: PSYC 721.

**RELR 536. Spirituality and Everyday Life. 3 Units.**

Explores the place of spirituality in everyday life through assimilation of information drawn from religious theorists, theology, spiritual and religious practices, and occupation.

**RELR 540. Wholeness and Health. 3 Units.**

Aids student in formulation of a portfolio that incorporates a variety of activities related to biblical concepts of wholeness. Addresses 1) the integration of mind/body/spirit, 2) strengthening relationships, 3) care of the environment, and 4) the healing of the nations from personal and professional perspectives.

**RELR 541. History of Seventh-day Adventist Chaplaincy and Healthcare Policy Making. 4 Units.**

Focuses on the history of chaplaincy, Adventist chaplaincy, and the Adventist approach to critical cases and positions in world church documents.

**RELR 564. Religion, Marriage, and the Family. 3 Units.**

The family in theological, historical, and ethical perspectives—with a Christian assessment of contemporary theories regarding the family.

**RELR 565. Practical Theology and Methodology. 3 Units.**

Informs and enriches the practice of pastoral professionals through the study of practical and pastoral theologies. Designed especially to serve as a foundations course in which fundamental questions about the relationship between religious tradition, theology, and contemporary practice are explored.



**RELR 567. Pastoral Counseling. 4 Units.**

Provides overview of theology, history, theory, and practice of pastoral counseling.

**RELR 568. Care of the Dying and Bereaved. 3 Units.**

Studies the biblical, theological, cultural, religious, relational, and psychological aspects of dying and death.

**RELR 574. Preaching. 3 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.

**RELR 575. Whole Person Care. 3 Units.**

Integrates psychosocial and spiritual care in the clinical setting.

**RELR 584. Culture, Psychology, and Religion. 3 Units.**

Introduces the major contours of Western culture as they relate to various schools of psychological thought and the influence of religious beliefs.

**RELR 587. Religion and the Social Sciences. 3 Units.**

Introduces classic and contemporary dialogues between religion and the social sciences.

**RELR 588. Personal and Family Wholeness. 3 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 590. Quantitative Research in Religious Studies. 3 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.

**RELR 591. Qualitative Research in Religious Studies. 3 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.

**RELR 592. Doctoral Portfolio in Religion and Health. 1 Unit.**

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. 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.

**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 704. Orientation to Christian Physician Formation. 2 Units.**

Introduces the teaching and healing ministry of Jesus and its continuing relevance for medical professionals. Engages students through reflective reading, writing, and conversation with other classmates, guided by faculty and physician mentors.

**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 710. Compassion. 2 Units.**

Practical study of the art and science of compassion in practice for health-care professionals.

**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. Marriage 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 774. Whole-Person Care for Physicians. 1 Unit.**

Integrates psychosocial and spiritual care in the clinical setting, focusing on the patient-physician relationship.

**RELR 775. Whole Person Care. 2 Units.**

Integrates psychosocial and spiritual care in the clinical setting.

**RELR 776. Christian Spirituality and the Health Professional. 2,3 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.

## Religion/Theological Studies (RELT)

### Courses

**RELT 107. Introduction to World Religions. 1 Unit.**

Introduces the history, beliefs, and practices of some major world religions, with an eye toward skills that are relevant to the practice of culturally competent health care.

**RELT 108. Jesus, Health, and Wholeness. 1 Unit.**

Examines Jesus' teaching and healing ministry and how this has impacted the history and philosophy of Loma Linda University as a Seventh-day Adventist health sciences institution. Acquaints students with the concepts of wholeness and whole-person care.

**RELT 199. Topics in Theological Studies. 1-3 Units.**

Selected topics in theological studies. May be repeated for a maximum of 3 units when a different topic is offered.

**RELT 404. New Testament Writings. 2 Units.**

Interprets selected letters and passages of the New Testament, with a view to their theological and practical significance for today.

**RELT 406. Adventist Beliefs and Life. 3 Units.**

Fundamental tenets of Seventh-day Adventist faith and the lifestyle that such faith engenders.

**RELT 415. Christian Theology and Popular Culture. 2 Units.**

Examines concepts and practices in popular culture from a Christian perspective.

**RELT 416. God and Human Suffering. 2 Units.**

Suffering and evil in relation to the creative and redemptive purposes of God for this world.

**RELT 423. Loma Linda Perspectives. 2 Units.**

History and philosophy of Loma Linda University as a Christian health-sciences institution that fosters human wholeness.

**RELT 436. Adventist Heritage and Health. 2 Units.**

Origin and development of Seventh-day Adventist interest in health, from the background of nineteenth-century medicine and health reform to the present.

**RELT 437. Current Issues in Adventism. 2 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.

**RELT 440. World Religions. 2 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.

**RELT 464. 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 470. Visions of Healing in Biblical Prophecy. 2 Units.**

Exploration of the visionary accounts of biblical books such as Isaiah, Jeremiah, Daniel, and Revelation. Content may vary from quarter to quarter.

**RELT 477. Biblical Thought and Today's World. 2 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.

**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 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.

**RELT 502. Religion and Society. 3 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 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.

**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 Units.**

Studies the fundamental tenets of Seventh-day Adventist faith and the lifestyle that such faith engenders.

**RELT 507. The Saga of Adventists and Healthcare: Cornflakes, Baby Fae, and the Healing of the Nations. 3 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. Contemporary Christian Theology. 3 Units.**

Presents principal issues, figures, and movements in Christian thought during the past century. Includes: relationships between history and biblical interpretation, theology and philosophy, and religion and science. Considers the growing prominence of Evangelical, Eastern orthodox, postmodern, and "contextual" theologies. Illuminates the characteristic ways in which the central elements of Christian faith provide lasting continuity and continually stimulate reflection.

**RELT 509. Biblical Perspectives in Religion and Health. 4 Units.**

Explores issues related to health, illness, and suffering from theological and biblical perspectives.

**RELT 510. Global Theology. 3 Units.**

Offers critical reflections of dominant Western theological discourse and explores other theological voices from African American, womanist, Asian, African, and South American perspectives.

**RELT 515. Faith and Flourishing. 3 Units.**

Focuses on major Christian perspectives that have been offered and debated, ranging from models of cultural withdrawal to cultural engagement and transformation. Gives attention to contemporary articulations of various positions and their philosophical and theological assumptions, beginning with a critical examination of the typology made popular by H. Richard Niebuhr in his classic study, *Christ and Culture*. Cross-listing: RELE 515.

**RELT 518. Adventist Heritage and Health. 1 Unit.**

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 520. Church History. 3 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.

**RELT 524. Religion and Society. 3 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.

**RELT 526. Creation and Cosmology. 3 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.

**RELT 527. The Bible and Ecology. 3 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.

**RELT 530. Spirituality and Clinical Psychology. 3 Units.**

Examines the positive resources of both religion and spirituality in the lives of clients, as well as the ways in which they can become linked to psychopathology. Outlines the spiritual aspects of the therapeutic relationship, including the use of spiritual interventions as an aspect of psychotherapy. Cross-listing: RELR 530.

**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 534A. Service Learning Practicum—International Project. 1 Unit.**

Loma Linda University-sponsored international mission trip, facilitated by the SIMS Program. Students engage in service activities, maintain a reflective journal while on the trip, and submit a final report summarizing the social-learning experience upon return. Prerequisite: RELT 534.

**RELT 534B. Service Learning Practicum—USA Project. 1 Unit.**

Loma Linda University-sponsored national mission trip, facilitated by SIMS Program. Students engage in service activities, maintain a reflective journal while on the trip, and submit a final report summarizing the social-learning experience upon return. Prerequisite or concurrent: RELT 534.

**RELT 539. Christian Understanding of God and Humanity. 3 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.

**RELT 540. World Religions and Human Health. 3 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.

**RELT 555. The Adventist Experience. 3 Units.**

Introduces the beliefs and values that shape the Seventh-day Adventist community.

**RELT 557. Theology of Human Suffering. 3 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.

**RELT 558. Old Testament Thought. 3 Units.**

Introduces the literature and key theological themes of the Old Testament. Content may vary from quarter to quarter.

**RELT 559. New Testament Thought. 3 Units.**

Introduces the literature and key theological themes of the New Testament. Content may vary from quarter to quarter.

**RELT 560. Jesus the Revealer: The Message of the Gospel of John. 3 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 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.

**RELT 564. Apostle of Hope: The Life, Letters, and Legacy of Paul. 3 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 Units.**

A study of Revelation's description of the end of suffering and God's vision for healing a broken world.

**RELT 570. Philosophy of Mind: Bodies, Minds, Souls. 3 Units.**

Explores the following questions: What is a mind? How does the mind relate to the brain and to the world? Are minds free or casually determined? How do minds affect bodies? Could minds exist in different kinds of bodies? Do minds survive death? Discusses answers and arguments that have been offered by philosophers, theologians, and cognitive scientists; as well as the implications of these answers for ethics and theology.

**RELT 574. Love and Sex in the Bible. 3 Units.**

Studies Scripture on the reality, nature, and challenges of love—both divine and human; and key biblical passages on the goodness, meaning, and distortions of human sexuality.

**RELT 615. Seminar in Philosophy of Religion. 3 Units.**

Examines the concept of God, arguments for the existence of God, the relationship of faith and reason, and the nature of religious language.

**RELT 617. Seminar in Religion and the Sciences. 3 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.

**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 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 734. Foundations for International Health-Care Missions. 2 Units.**

Discusses approaches to meeting health-care needs of international community both short-term and in career medical ministry. Examines historical, biblical, theological, and practical foundations of mission service from school of religion and global-health physician faculty perspectives.

**RELT 740. World Religions and Human Health. 2,3 Units.**

Studies of the history, beliefs, and practices of eight major world religions, with an emphasis on theological and ethical issues that are relevant to the practice of culturally competent health care. Gives attention to the interaction between specific religions and their cultures and to similarities, differences, and potential for understanding among religions. Third unit covers two additional world religions.

**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 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.

## 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 304. Cardiopulmonary Anatomy and Physiology. 4 Units.**

Investigates anatomic and physiologic components of cardiovascular and respiratory systems. Emphasizes histology, embryology, diffusion, gases transported in the blood, acid-base balance, lung volumes and capacities, mechanics of ventilation, ventilation perfusion relationships, regulation of respiration, cardiac cell-membrane action potentials, and excitation-contraction coupling.

**RSTH 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.

**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 316. 12-Lead ECG Interpretation. 2 Units.**

Application and interpretation of the 12-lead system. Emphasizes recognition of the acute myocardial infarction. Includes identifying axis deviation, acute ischemic conditions, electrolyte imbalances, bundle-branch block, and infarct impostors. Attention to care of cardiac patients, emphasizing patient assessment, data collection, and use of the 12-lead to guide rapid intervention. Certificate issued upon successful course completion.

**RSTH 318. Cardiology. 3 Units.**

Development of assessment skills and medical management of patients 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. Emergency care of patients with myocardial infarction and cardiovascular trauma. Interaction with cardiac patients and clinical observation of diagnostic studies.

**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 pharmacologic agents currently used in medicine—including their kinetics, dynamics, and therapeutics. Emphasizes drugs and their effects on the respiratory, cardiovascular, and autonomic nervous systems. Topics include the bronchodilators, anti-inflammatory agents, mucokinetic agents, cardiovascular agents, diuretics, antimicrobials, neuromuscular agents, and agents used to treat nicotine dependence.

**RSTH 332. Pharmacology II. 2 Units.**

Surveys pharmacologic agents currently used in medicine—including their kinetics, dynamics, and therapeutics. Emphasizes drugs and their effects on the respiratory, cardiovascular, and autonomic nervous systems. Topics include the bronchodilators, anti-inflammatory agents, mucokinetic agents, cardiovascular agents, diuretics, antimicrobials, neuromuscular agents, and agents used to treat nicotine dependence.

**RSTH 334. Patient Assessment. 2 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. Prerequisite: RSTH 341.

**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. Prerequisite: RSTH 341, RSTH 342.

**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. Prerequisite: RSTH 381.

**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. Prerequisite: RSTH 304, RSTH 331.

**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. Prerequisite: RSTH 304, RSTH 331, RSTH 341.

**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. Prerequisite or concurrent\*: RSTH 304, RSTH 381\*, RSTH 342.

**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. Prerequisite: RSTH 341; AHA CPR certification.

**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. Prerequisite: RSTH 342, RSTH 391; AHA CPR certification.

**RSTH 393. Respiratory Care Practicum III. 5 Units.**

Applies therapeutic techniques in continuous mechanical ventilation; special procedures, operation and postanesthesia room, and arterial blood-gas laboratory. Prerequisite: RSTH 343, RSTH 382, RSTH 392.

**RSTH 401. Cardiopulmonary Intensive Care. 2-4 Units.**

Management of the patient with cardiopulmonary failure. Theory and capabilities of various life support and monitoring systems. Prerequisite: Postprofessional student, senior standing; or consent of instructor.

**RSTH 404. Critical Care. 4 Units.**

Continues the theory, practice, and knowledge of mechanical ventilation, providing an integrated approach to respiratory care in the critical-care arena. Uses a systems-based approach to incorporate respiratory care concepts, such as planning and implementing of protocols, best-practice guidelines, etc. Utilizes presentations, projects, and critical evaluation to increase critical-thinking skills and patient-care skills. Presents advanced mechanical ventilation modes.

**RSTH 411. Advanced Cardiac Life Support. 2 Units.**

Principles and techniques of advanced emergency cardiac care. Includes basic CPR, endotracheal intubation, use of airway adjuncts, monitoring and dysrhythmia recognition, drugs for cardiac life support, intravenous techniques, circulatory adjuncts, and devices for elective cardioversion or defibrillation, stabilization, and transportation. Follows American Heart Association criteria for acid-base balance, drug therapy, and therapeutic interventions.

**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. Prerequisite: RSTH 304, RSTH 331.

**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. Prerequisite: RSTH 421; or consent of instructor. Does not apply to postprofessional respiratory care students.

**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 oxygen uptake, carbon dioxide output, and respiratory exchange ratio at rest and during exercise. Reviews metabolic, body-fat composition, and exercise studies; and, malnutrition in chronic obstructive pulmonary disease as foundations for evaluation and implementation of pulmonary rehabilitation programs.

**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. Prerequisite: RSTH 431.

**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. Prerequisite: RSTH 431, RSTH 432.



**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. Prerequisite: RSTH 334; Does not apply to postprofessional respiratory care students.

**RSTH 435. Professional Development in Respiratory Care. 1 Unit.**

Prepares students for the board exams matrix, provides interview practice in respiratory care, and models professionalism and success as a new respiratory therapist.

**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.) Prerequisite: RSTH 341, RSTH 342, RSTH 343; or consent of instructor.

**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. Prerequisite: RSTH 421; Does not apply to postprofessional respiratory care students.

**RSTH 448. Clinical Practice Seminar. 2 Units.**

Focuses on theories and research defining best respiratory care practices in the clinical setting. Addresses areas of general care, basic critical care, and advanced critical care in adult, pediatric, and neonatal settings. Prerequisite: CA RCP licensure.

**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 and Health Promotion in Respiratory Care. 2 Units.**

Utilizes a case management approach to patient care in managing and evaluating disease and treatment. Emphasizes patient aspects of respiratory care that include discharge planning, utilization review, patient assessment, cost containment, patient education, and integration issues. Discusses relevance of epidemiology as well as selected disease trends, lifestyle modification, and public health approaches to communicable diseases. Prerequisite: RSTH 334, RSTH 424, RSTH 434; Does not apply to postprofessional respiratory care students.

**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. Prerequisite: RSTH 366; Does not apply to postprofessional respiratory care students.

**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 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. Prerequisite: RSTH 424.

**RSTH 480. Lung Ultrasound Assessment. 2 Units.**

Presents the technology and evidenced-based application of lung ultrasound in the assessment of the critically ill. Student learn to identify twelve signatures (images) of lung ultrasound with application of the BLUE-Protocol, FALLS-Protocol, and SESAME-Protocol. Includes online lectures, assignments, and interactive lung ultrasound case simulations. Prerequisite: RSTH 404 or licensed RCP.

**RSTH 485. Evidenced-Based Medicine in Respiratory Care I. 2 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. 2 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. 2 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. Prerequisite: CA RCP licensure.

**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. Prerequisite: CA RCP licensure.

**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. Prerequisite: CA RCP licensure.

**RSTH 494. Respiratory Care Practicum IV. 3 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. Prerequisite: RSTH 343, RSTH 382, RSTH 393, RSTH 404.

**RSTH 495. Respiratory Care Practicum V. 2 Units.**

Specialty training in respiratory care practice. Addresses neonatal/pediatric and adult critical care, cardiopulmonary diagnostics, hyperbaric medicine, sleep disorders, and cardiopulmonary rehabilitation in general, critical-care and extended care settings. Prerequisite: RSTH 494, RSTH 404.

**RSTH 496. Respiratory Care Practicum VI. 3 Units.**

Continues specialty training in respiratory care practice. Addresses neonatal/pediatric and adult critical care, cardiopulmonary diagnostics, hyperbaric medicine, sleep disorders, and cardiopulmonary rehabilitation in general, critical-care and extended care settings. Prerequisite: RSTH 495.

**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 coursework, particularly at the molecular mechanistic level.

**RSTH 502. Advanced Cardiopulmonary Anatomy and Physiology II. 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 coursework, particularly at the molecular mechanistic level. Prerequisite: RSTH 501.

**RSTH 510. Seminar in Translational Cardiopulmonary Science I. 1 Unit.**

First of a four-quarter series of seminars providing an overview of translational cardiopulmonary basic and clinical research. Includes discussion of current cardiopulmonary clinical best practices, scientific and administrative processes that achieve best practices, and current scientific research aimed at progression of cardiopulmonary science at the bedside. Required for MSRC students without a respiratory care background (research track).

**RSTH 511. Seminar in Translational Cardiopulmonary Science II. 1 Unit.**

Second of a four-quarter series of seminars providing an overview of translational cardiopulmonary basic and clinical research. Includes discussion of current cardiopulmonary clinical best practices, scientific and administrative processes that achieve best practices, and current scientific research aimed at progression of cardiopulmonary science at the bedside. Required for MSRC students without a respiratory care background (research track).

**RSTH 512. Seminar in Translational Cardiopulmonary Science III. 1 Unit.**

Third of a four-quarter series of seminars providing an overview of translational cardiopulmonary basic and clinical research. Includes discussion of current cardiopulmonary clinical best practices, scientific and administrative processes that achieve best practices, and current scientific research aimed at progression of cardiopulmonary science at the bedside. Required for MSRC students without a respiratory care background (research track).

**RSTH 513. Seminar in Translational Cardiopulmonary Science IV. 1 Unit.**

Fourth of a four-quarter series of seminars providing an overview of translational cardiopulmonary basic and clinical research. Includes discussion of current cardiopulmonary clinical best practices, scientific and administrative processes that achieve best practices, and current scientific research aimed at progression of cardiopulmonary science at the bedside. Required for MSRC students without a respiratory care background (research track).

**RSTH 541. Advanced Concepts in Critical Care I. 2 Units.**

Explores relevant studies impacting cardiopulmonary science. Discusses physical principles and molecular mechanisms associated with phenotypic changes in compliance and resistance upon implementation of positive pressure ventilation (PPV). Addresses benefits and limitations of techniques offered by advanced, novel ventilation modes in regard to reduced physiological insult upon PPV. Encourages research questions, data interpretation, and revision of current protocols and modalities.

**RSTH 542. Advanced Concepts Critical Care II. 2 Units.**

Continues RSTH 541. Includes the systemic effects of the critical care patient, their impact on the cardiopulmonary system, and the role of the cardiopulmonary system in maintaining homeostasis. Encourages research questions, data interpretation, and revision of current protocols and modalities. Prerequisite: RSTH 542.

**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.**

Applies integrated theory, management, practice, and application approaches to general medicine, cardiopulmonary assessment, diagnostics, and monitoring for the cardiopulmonary patient. Includes total system assessment, interpretation of diagnostics, and implementation of planning for improved intensive cardiopulmonary care. Encourages 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. Prerequisite: RSTH 571.

**RSTH 574. Nutrigenomics and Cardiopulmonary Health and Disease. 4 Units.**

Discusses nutrition and its effects on epigenetic regulation of genes that determine cardiopulmonary health and disease. Offers a brief overview of epigenetics, with a focus on food as source stimuli for altering the expression of pathway components known to both induce and minimize disease progression of the cardiovascular and pulmonary systems.

**RSTH 580. Research Concepts in Respiratory Care Sciences. 3 Units.**

Basic concepts of drafting literature review and respiratory care research. Presents concepts of evidence-based medicine. Applies research specific to respiratory care science through evaluation and comparison of literature relevant 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 587. R Programming for Health Care and Translational Science II. 4 Units.**

Second course in a four-part series. Introduction to programming in R. Acquiring and cleaning internet data, subsetting and graphing data, using statistics in R for data analysis, and generating interpretable reports that can be presented to professional and lay audiences. Introduces tools necessary to analyze large datasets to answer epidemiological questions.

**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. Prerequisite: RSTH 591.

**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. Prerequisite: RSTH 591, RSTH 592.

**RSTH 596. Advanced Clinical Practice in Respiratory Care I. 2 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. 2 Units.**

Continues RSTH 596. 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.

**RSTH 684. Management and Leadership in Respiratory Care Project. 1-3 Units.**

Application of management in respiratory or emergency medical care from staffing, equipment, policies, billing, scheduling, and protocols, as well as clinical application of theoretical management and leadership skills in respiratory care.

**RSTH 685. Respiratory Care Education Project. 1-3 Units.**

Provides experience in respiratory care education, curriculum development, assessment, evaluation, and clinical scheduling, as well as an understanding of hospital affiliation agreement challenges and accreditation issues.

**RSTH 698. Capstone Project in Respiratory Care. 1,2 Unit.**

Development of capstone project in respiratory care including topic selection, literature review, data collection and analysis. Includes project implementation or publication readiness and presentation to faculty. Prerequisite: RSTH 580.

## Restorative Dentistry (RESD)

### Courses

**RESD 765. Removable Prosthodontics II. 1 Unit.**

Focuses on the fundamentals of designing a removable partial denture for patients. Assists student in understanding treatment of patients with removable prosthesis through individual projects, group exercises, oral and power point presentations, and writing assignments.

**RESD 765L. Removable Prosthodontics II Laboratory. 1 Unit.**

Student applies concepts and fundamentals from RESD 765 to complete various projects/laboratory exercises to treat patients with removable partial dentures.

**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 875B. Patient Care Clinic II. 12 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. Prerequisite: DENT 770B.

**RESD 875C. Patient Care Clinic III. 15 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 post-treatment continuing-care procedures. Prerequisite: RESD 875B.

## School of Behavioral Health Global (SBHG)

### Courses

**SBHG 700. Global Behavioral Health Service Learning. 2 Units.**

Short-term elective experience (approximately ten days) in international behavioral health offered during the summer quarter. LLU associated sites coordinated and assigned by the dean's office. Examines ethical and practice issues associated with global humanitarian service versus traditional Western behavioral health interventions. Requires pre- and concurrent seminars. Specific host site requirements may apply.

**SBHG 705. Global Behavioral Health Elective Practicum. 4 Units.**

Emphasizes recovery, resiliency, and empowerment as foundations of global behavioral health interventions through an elective experience in international behavioral health. Prerequisite: Good academic and behavioral standing; approval from student's program director, department chair, and dean; valid passport.

## 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 their designee develops the specific course content and assignments.

**SDCL 744. Clinical Training in Advanced Restorative Dentistry. 8 Units.**

Provides mission support and training for Seventh-day Adventist international dentists and other foreign dentists residing outside the United States who will return to their dental clinics/countries after program completion. Includes six months of study. Allows qualified dentists from other countries to study and treat patients at Loma Linda University School of Dentistry. Course generates no academic credit and cannot apply toward any other program in the School of Dentistry.

**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 their 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.**

Provides opportunities for direct patient care, and study in biomaterials research, dental anesthesiology, endodontics, implant dentistry, oral and maxillofacial surgery, oral pathology and radiology, orthodontics, pediatric dentistry, periodontics, or prosthodontics. Includes one month of study. Course generates no academic credit and cannot apply toward any program in the School of Dentistry.

**SDCJ 759B. Clinical Experience. 6 Units.**

Provides opportunities for direct patient care, and study in biomaterials research, dental anesthesiology, endodontics, implant dentistry, oral and maxillofacial surgery, oral pathology and radiology, orthodontics, pediatric dentistry, periodontics, or prosthodontics. Includes two months of study. Course generates no academic credit and cannot apply toward any program in the School of Dentistry.



**SDCJ 759C. Clinical Experience. 9 Units.**

Provides opportunities for direct patient care, and study in biomaterials research, dental anesthesiology, endodontics, implant dentistry, oral and maxillofacial surgery, oral pathology and radiology, orthodontics, pediatric dentistry, periodontics, or prosthodontics. Includes three months of study. Course generates no academic credit and cannot apply toward any program in the School of Dentistry.

**SDCJ 799. Directed Study. 4-12 Units.**

## Social Policy (SPOL)

### Courses

**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. Prerequisite: Program prerequisite in interviewing and counseling.

**SPOL 601. Integrative Seminar: Pro-seminar. 1 Unit.**

Provides an overview to social work academe, research, policy and teaching. Focuses on LLU's program and creates an environment to nurture student's research interest. Prerequisite: Matriculated in PhD in Social Welfare and Social Research.

**SPOL 602. Integrative Seminar: Global Perspective. 2 Units.**

Focuses on research and practice using a global perspective that locates differences and similarities of behavioral and other health inequities locally and internationally. Prerequisite: SPOL 601.

**SPOL 603. Integrative Seminar: Implementation Science. 1 Unit.**

Focuses on promoting, adopting, and integrating evidenced-based research and practices by identifying barriers that prevent successful integration in practice, policies, and programming. Explores transdisciplinary research, transprofessional practice, and effective leadership and advocacy. Prerequisite: SPOL 601, SPOL 602.

**SPOL 604A. Integrative Seminar: Academic Practice. 1 Unit.**

The first of three seminars focusing on the art and science of social work education, developing a teaching philosophy, instructional teaching methodologies, grading, educational ethics, and student assessment. Cross-listing: SWCL 604A.

**SPOL 604B. Integrative Seminar: Academic Practice. 1 Unit.**

The second of three seminars on careers in social work education. Focuses on course subject and curriculum development and participating in social work accreditation. Cross-listing: SWCL 604B.

**SPOL 604C. Integrative Seminar: Academic Practice. 1 Unit.**

Third of three seminars on careers in social work education. Examines preparation for career opportunities in social work education, and role of faculty in institutional, school, and program engagement and governance. Discusses scholarship expectations, student advising, and mentoring. Guidance on applying and interviewing for positions. Cross-listing: SWCL 604C.

**SPOL 610. Diversity Theory and Global Perspectives. 3 Units.**

Critical examination of contemporary theories of diversity as seen through the lens of a global perspective, including intersectionality. Opportunity to apply these theories using a cultural humility framework for engaging diverse populations in policy practice and research.

**SPOL 613. Social Science Concepts I. 3 Units.**

First of two courses reviewing key theories, writers, conceptual frameworks, and seminal ideas from classical social science theory that have laid the foundation for contemporary social welfare theory and social research.

**SPOL 614. Social Science Concepts II. 3 Units.**

Second of two courses reviewing key theories, writers, conceptual frameworks, and seminal ideas from the Post Modern era that have laid the foundation for contemporary social welfare theory and social research. Prerequisite: SPOL 613.

**SPOL 616. History and Philosophy of Social Welfare Policy. 3 Units.**

Explores the history of social welfare from a multicultural perspective and relates these principles to current and evolving social needs.

**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 658. Advanced Policy Analysis and Research. 3 Units.**

Presents conceptual and analytical requirements of policy analysis and research. Examines integration of behavioral, political, economic, and sociometric frameworks for understanding human conditions that support the development of formal policy arguments and policy research for sustained change.

**SPOL 665. Statistical Practicum Seminar. 2 Units.**

Students collectively conceptualize and analyze a research question from a data set. Requires a scholarly product outcome.

**SPOL 667. Research Methods Practicum Seminar. 2 Units.**

Development of methodology section and submission of draft dissertation proposal. Prerequisite: SPOL 665.

**SPOL 681. Dissertation Proposal I. 3 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. 3 Units.**

Development of the dissertation proposal. Research advisor develops with the student mutually agreed-upon objectives. Evaluation based on accomplishment of these objectives. Prerequisite: SPOL 681.



**SPOL 683. Dissertation Proposal III. 3 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. Prerequisite: SPOL 681, SPOL 682.

**SPOL 697. Research. 1-6 Units.**

Credit for dissertation research. Total of 18 units required. May be repeated for credit.

## Social Work (SOWK)

### Courses

**SOWK 510. Diversity Theory in Practice and Research. 3 Units.**

Examines and applies contemporary theories of diversity from a critical perspective. Includes intersectionality and use of a cultural humility framework for engaging diverse populations at all levels of practice.

**SOWK 513. Human Behavior in a Culturally Diverse Environment. 4,5 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. Five units required of students who matriculated prior to Summer 2022.

**SOWK 514. Social Welfare History and Policy. 4,5 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.

**SOWK 517. Practice I: Individuals. 3,4 Units.**

Requires conducting a biopsychosocial-spiritual assessment and developing a full range of beginning intervention strategies for working with individuals. Emphasizes special problems experienced in micro-systems and at-risk populations, such as women and minorities. Focuses on goal-setting, assessment, and successful interventions with attention to cultural values that influence development and resolution of psychosocial problems. Four units required beginning with 2021-2022 catalog. Prerequisite or concurrent: Social work practicum.

**SOWK 518. 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. Practice III: Organizations and Communities. 3 Units.**

Utilizes an ecological systems framework and an empowerment practice model within the macro context. Includes: population outcomes, community organization, interagency relationships, leadership skills, and cultural sensitivity.

**SOWK 520. 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 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. Emphasis on critically evaluating research to facilitate use of evidence-based practices. Experiential learning supports development of knowledge and skills in computer assisted data analysis to conduct and interpret t-tests, ANOVAs, and regressions.

**SOWK 550. Clinical Interventions with Service Members, Veterans, and Families. 2 Units.**

Provides multi-disciplinary understanding of military culture and skills and application of evidence-based clinical treatments that foster resilience and provide relief to service members, veterans and their families. Attention to issues of diversity, ethics, and use of self are included throughout clinical case discussion. Clinical issues specific to this population are discussed along with individual, family, and community interventions. Prerequisite: PSYC 721 or SOWK 757C. Cross-listing: COUN 550, PSYC 550.

**SOWK 574. Practice V: Social Work Administration. 3 Units.**

Provides macropractice knowledge, skills, and perspectives of administrative practices needed to develop, support, and maintain effective service delivery. Topics include role identification and development, professional and organizational ethics, 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 578. Field Orientation. 0 Units.**

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 585. Legal and Ethical Aspects in Health and Behavioral Health Services. 3 Units.**

Focuses on legal mandates or concerns that interact with and affect the practice of social work. Includes: sources of legal authority, the judicial system, and legal standards applicable to particular proceedings; legal implications of the social worker/client relationship; consent to treatment; and, confidentiality.

**SOWK 595. Professional Development. 2 Units.**

Tutorial coursework 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. DSM: Diagnosis Within the Context of Diversity and Difference. 4 Units.**

Provides hands-on experience using the DSM-5 and Mental Status Examination (MSE) from a person-in-the-environment perspective. Integrates recovery and a review of psychopharmacology into diagnostic process while enhancing awareness of sociocultural needs and at-risk population issues. Prerequisite: SOWK 757C.

**SOWK 617. Global Practice. 3 Units.**

Deepens students' appreciation and understanding of professional social work in a global context. Emphasizes analysis and application of social work strategies and practice methods to address catastrophic events (natural or man made), as well as the related social, economic, environmental, and human rights injustices that compromise the ecological well-being of individuals, families, groups, organizations, and communities. Prerequisite: SOWK 757A, SOWK 757B, SOWK 757C.

**SOWK 647. Integrated Behavioral Health. 2 Units.**

Focuses on the holistic (bio-psychosocial-spiritual) approach to integrating behavioral health within primary care settings. Emphasizes the fundamental interrelationship between health and behavioral health, including the physical and emotional impact of discrimination, economic and social oppression, and trauma and violence on health and disease across the life span.

**SOWK 648. Co-occurring Processes and Interventions. 3 Units.**

Addresses assessment, diagnosis, and treatment of individuals experiencing mental, emotional, and behavioral disturbances with co-occurring chemical dependency. Presents behavioral health treatment strategies and substance abuse counseling techniques from within a biopsychosocial-spiritual paradigm. Prerequisite: SOWK 757A, SOWK 757B, SOWK 757C.

**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, biopsychosocial-spiritual assessment, brief interventions, and the roles and responsibilities of membership in an interdisciplinary health-care team, including the requirements of follow-up care and engagement in the development of community health-care systems as an aspect of accountable health-care environments.

**SOWK 653. Child Welfare Practice. 2 Units.**

Connects children and families in relationship to environmental stability. Focuses on associations among the physical and mental health of children, families, and environmental permanency. Emphasizes development of parental and social support capacities, and requisite knowledge and skills to help children deal with identity issues and concerns of joining a new family. Addresses impacts of race, ethnicity, gender, economic deprivation, physical illness, and disability.

**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.**

Provides students with an understanding of philosophies, theories, models, and techniques used in psychosocial rehabilitation for individuals with severe mental illness. Emphasizes understanding the recovery paradigm and the process of reclaiming the individual's social interactions and life. Focuses on concepts/techniques for establishing and maintaining therapeutic alliances with the family and strengthening family's coping and participation in treatment.

**SOWK 661. Psychodynamic Therapies. 4 Units.**

Basis for understanding theoretical aspects of psychodynamic therapy, concepts and techniques of various types of psychodynamic interventions (e.g. interpersonal therapy and short-term dynamic therapy), and empirical data regarding efficacy of treatment orientation. Engagement in practice simulations, observing, and/or demonstration of psychodynamic therapy techniques required. Prerequisite: SOWK 757C.

**SOWK 662. Behavioral and Cognitive Therapies. 4,5 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 progressive models, including ACT and DBT. Requires engagement in practice simulations, observation, and/or demonstration of CBT techniques. Five units required for students enrolled prior to 2021-2022 catalog. Prerequisite: SOWK 757C.

**SOWK 663. Crisis and Trauma Interventions. 3 Units.**

Examines the nature, characteristics, and neurobiology of crisis and trauma in addition to long-term effects on psychosocial functioning. Presents crisis theories and interventions for children and adults exposed to trauma with emphasis on suicidology, school violence, domestic violence, and child, dependent adult, and elder abuse. Includes ethical, legal, and cultural factors of crisis intervention along with strategies for responding to individuals, families, and communities. Prerequisite: SOWK 757B.

**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. Prerequisite: Qualifying Review or permission of the Academic Standards Committee.

**SOWK 675. Supervision. 3 Units.**

Examines administrative, educational (clinical), and supportive supervisory functions combined with an ethical decision-making model. Emphasizes supervisory skills necessary for the development of staff capable of functioning creatively and independently. Discusses principles and techniques of staff development and explores a variety of approaches. Prerequisite: SOWK 757A, SOWK 757B, SOWK 757C.

**SOWK 678. Integrative Generalist Practice and Consultation. 1.5,3 Unit.**

Provides a bridge quarter to integrate the B.S.W. degree experience with the second year of the M.S.W. degree program. Reviews generalist social work practice and defines additional competencies required for advanced practice. Addresses individualized needs for further development, including application of professional ethics and judgment, use of self as a therapeutic tool, and self-awareness. Prerequisite or concurrent: SOWK 578.

**SOWK 679. Advanced Professional Projects. 2 Units.**

Preparation for lifelong learning through continuing professional development and targeted collegial networking as essential aspects of transitioning into roles as professional social workers. Includes planning and commitment to recognizing, assessing, and formulating intentional plans for continuing professional knowledge and skill development, professional networking and mentoring, and licensure and certifications.

**SOWK 680. Children and Families Policies and Services. 2 Units.**

Provides students with an understanding of the major social-policy issues affecting the current organization and delivery of human services for children and families. Analyzes current debates about the tensions between social policy and the doctrine of family privacy, with attention to the legal basis of state interventions and judicial decisions affecting family relationships, including parent to parent and child to parent.

**SOWK 681. Behavioral Health Policies and Systems. 2 Units.**

Addresses federal, state, and county policies and systems that affect the delivery of public and contracted behavioral health services. Addresses how differences between political perspectives, treatment philosophies, and consumer preferences can result in conflicting views that influence service options and choices. Promotes the clinical benefits of advocating for, developing, and delivering culturally relevant, recovery-oriented therapeutic partnerships. Prerequisite: SOWK 757A, SOWK 757B, SOWK 757C.

**SOWK 684. Advanced Policy Projects. 2 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 695. Advanced Research. 6 Units.**

Supports students in advancing their research knowledge through examination and application of a broad spectrum of quantitative and qualitative research methods—including rapid assessment, single-subject design, quality assurance, and program evaluation. Didactic and laboratory experiences draw on students' advanced practice and develops their capacity to differentiate and apply the most appropriate and widely used research designs and methods used in practice settings.

**SOWK 695A. Advanced Research Methods. 2 Units.**

First in a three-course sequence addressing quantitative and qualitative research methods used in professional practice settings. Addresses research designs and methods of practice evaluation and renewal with attention to 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.**

Second in a three-course sequence addressing quantitative and qualitative research methods used in professional practice settings. Addresses research designs and methods of practice evaluation and renewal with attention to federal and state requirements for assessing intervention effectiveness. Emphasizes practice evaluation groups as well as design and implementation of quality assurance studies for monitoring work with specific populations.

**SOWK 695C. Advanced Research Methods. 2 Units.**

Third in a three-course sequence addressing quantitative and qualitative research methods used in professional practice settings. Addresses research designs and methods of practice evaluation and renewal with attention to federal and state requirements for assessing intervention effectiveness. Emphasizes evaluation at 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. Prerequisite: SOWK 548.

**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 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. Generalist Practice Consultation. 1.5,3 Unit.**

Provides experiential learning opportunities in generalist social work practice through a practicum arranged by the program's director of field education. Student completes 160 practicum hours concurrent with 20 hours of consultation over one or two quarters, depending on the program option. Prerequisite: Prerequisite or concurrent: SOWK 578. Prerequisite or concurrent: SOWK 578.

**SOWK 757B. Generalist Practice Consultation. 1.5,3 Unit.**

Provides experiential learning opportunities in generalist social work practice through a practicum arranged by the program's director of field education. Student completes 160 practicum hours concurrent with 20 hours of consultation over one or two quarters, depending on the program option. Prerequisite: SOWK 578.

**SOWK 757C. Generalist Practice Consultation. 1.5,3 Unit.**

Provides experiential learning opportunities in generalist social work practice through a practicum arranged by the program's director of field education. Student completes 160 practicum hours concurrent with 20 hours of consultation over one or two quarters, depending on the program option. Prerequisite: SOWK 578.

**SOWK 787A. Clinical Practice Consultation. 2,4 Units.**

Provides experiential learning opportunities in clinical social work practice through practicums arranged by the program's director of field education. Student completes 200 practicum hours concurrent with 20 hours of clinical consultation over one to two quarters, depending on the program option. Prerequisite or concurrent: SOWK 678 or SOWK 757C.

**SOWK 787B. Clinical Practice Consultation. 2,4 Units.**

Provides experiential learning opportunities in clinical social work practice through practicums arranged by the program's director of field education. Student completes 200 practicum hours concurrent with 20 hours of clinical consultation over one to two quarters, depending on the program option. Prerequisite: SOWK 678 or SOWK 757C.

**SOWK 787C. Clinical Practice Consultation. 2,4 Units.**

Provides experiential learning opportunities in clinical social work practice through practicums arranged by the program's director of field education. Student completes 200 practicum hours concurrent with 20 hours of clinical consultation over one to two quarters, depending on the program option. Prerequisite: SOWK 678 or SOWK 757C.

# Social Work Clinical Leadership (SWCL)

## Courses

### SWCL 604A. Integrative Seminar: Academic Practice. 1 Unit.

The first of three seminars focusing on the art and science of social work education, developing a teaching philosophy, instructional teaching methodologies, grading, educational ethics, and student assessment. Cross-listing: SPOL 604A.

### SWCL 604B. Integrative Seminar: Academic Practice. 1 Unit.

The second of three seminars on careers in social work education. Focuses on course subject and curriculum development and participating in social work accreditation. Cross-listing: SPOL 604B.

### SWCL 604C. Integrative Seminar: Academic Practice. 1 Unit.

Third of three seminars on careers in social work education. Examines preparation for career opportunities in social work education, and role of faculty in institutional, school, and program engagement and governance. Discusses scholarship expectations, student advising, and mentoring. Guidance on applying and interviewing for positions. Cross-listing: SPOL 604C.

### SWCL 605. Digital Design: Curriculum and Course Development. 2 Units.

Digital education pedagogy and assessment for designing and implementing effective clinical social work curriculum and courses. Techniques for leading discussions, constructing successful group assignments, and dealing with difficult subjects addressed.

### SWCL 615. Comparative Social Work Practice, Evidence-based Practice and Social Justice. 3 Units.

Comparative approach to examining philosophical and historical practice perspectives to address social justice and ecological well-being. Examination of evidence-based, research-informed and promising practices.

### SWCL 620. Clinical Interventions I: Advanced Theories and Cognitive Behavioral Therapy Interventions. 3 Units.

Examine advanced clinical theories that guide predominate interventions used in behavioral health. Emphasis on understanding foundational underpinnings of cognitive behavioral therapy as basis for interventions related to specific diagnosis and conditions.

### SWCL 630. Clinical Interventions II: Emergent Methods for Complex Conditions. 3 Units.

A review and exploration of emergent and cutting-edge clinical intervention methods that address the needs of persons with complex diagnoses, including comorbidity of addictions and/or life-threatening acute and chronic diseases.

### SWCL 640. Clinical Interventions III: Trans-modular Methods for Complex Systems. 3 Units.

Innovative trans-modal evidence-based practice applications supporting services for populations with compound needs in hard to service communities and systems. Impact on consumer outcomes and health disparities addressed.

### SWCL 650. Neuroscience, Resiliency and Trauma-Focused Global Practice. 3 Units.

Examines neuroscience framework and bio-ecological research that underpin resiliency and trauma-informed methods. Emphasis on identifying intervention models that are ethno-racial adaptive and provide evidence of transformative sustainable results.

### SWCL 660. Translational Research, Design and Testing. 2 Units.

Introduces methods used in designing, testing and implementing practice innovation in complex and fast-moving interdisciplinary clinical settings. Emphasizes identifying interdisciplinary champions and sustaining clinical, administrative and research team engagement. Prerequisite or concurrent\*: CFSD 601, CFSD 602\*; SPOL 654, SPOL 655.

### SWCL 670. Clinical Leadership I. 3 Units.

Knowledge and skills for effective management of clinical systems, supervision, management and evaluation of clinical teams, and educational andragogy.

### SWCL 680. Clinical Leadership II. 3 Units.

Examines principles of executive leadership in highly charged and large-scale outcome environments, including role and methods of guiding strategic planning, financial management and judgement, cost/benefit analysis, resource development; and informatics.

### SWCL 690. Applied Project I. 1 Unit.

Orientation to the requirements of the applied DSW project. Development of applied project topic and objectives. Prerequisite or concurrent\*: CFSD 601\*; SPOL 654, SPOL 655.

### SWCL 691. Applied Project II. 2 Units.

Development of the literature review and methodology sections of the project proposal. Prerequisites: SWCL 690.

### SWCL 692. Applied Project III. 2 Units.

Completion and successful defense of the Applied DSW Project proposal.

### SWCL 693. DSW Project I. 2 Units.

Collect data. Conduct program evaluation, or implement program design as determined by applied DSW project objectives. Prerequisite: SWCL 690, SWCL 691, SWCL 692.

### SWCL 694. DSW Project II. 2 Units.

Analysis of data collected as determined by applied DSW project objectives. Requires draft of publishable paper following standards set forth by relevant refereed journal. Prerequisite: SWCL 693.

### SWCL 695. DSW Project III. 2 Units.

Finalize publishable paper, revise applied DSW project proposal document as needed, and successfully defend applied DSW project. Prerequisite: SWCL 694.

### SWCL 785. Externship I. 2 Units.

Experiential learning designed to advance knowledge and skills in clinical leadership, applied research, social work education, and/or mission-focused learning. Prerequisite: Completion of Year 1 of DSW Program.

### SWCL 786. Externship II. 2 Units.

Experiential learning designed to advance knowledge and skills in clinical leadership, applied research, social work education, and/or mission-focused learning. Prerequisite: SWCL 785.

# Speech-Language Pathology Doctorate (SLPD)

## Courses

### SLPD 550. Advanced Seminar in Neuroanatomy and Neuroscience. 3 Units.

Provides in-depth information on the role played by the brain in speech and language. Reviews functional neuroanatomy as an introduction to the following topics: functional commitment, neuroplasticity, long-term potentiation, etc. Informs clinical best practice by focusing on the complexity of the brain with regard to cognitive and motor function, and by providing background on functional brain imaging research.



**SLPD 570. Special Topics in Speech-Language Pathology. 3 Units.**

Provides an in-depth look at a variety of topics in the field. Topics selected by faculty with input from students may include dysphagia, autism, dysfluency, bilingualism, etc. Students critically examine current research in the topic area in order to determine best practice. May be repeated for additional credit.

**SLPD 580. Clinical Issues in Speech-Language Pathology. 3 Units.**

Topics covered include clinical supervision, administration, and starting/managing an independent clinic; as well as ethics and counseling. Focuses on interprofessional collaboration both within the allied health professions (e.g., occupational or physical therapy) and beyond (for either education or medical contexts). Students comment in online discussions on case studies.

**SLPD 600. Components of Clinical Inquiry. 3 Units.**

Focuses on skills fundamental to critical evaluation of the strength of scientific research. Covers elements of research design important to the validity of a study and identification of flaws in design and conclusions.

**SLPD 610. Capstone IRB Proposal. 4 Units.**

Provides instruction in developing an individual research proposal, completing Institutional Review Board (IRB) training, and successfully submitting a proposal to the IRB. Emphasizes reflective discussions of research interests and experiences, planning, conceptual framework, proposed methodology, and data analysis. Includes interprofessional peer reviews throughout the course.

**SLPD 621. Capstone Planning. 3 Units.**

Instructs students in how to 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.

**SLPD 622. Capstone Proposal. 2 Units.**

Provides framework for developing and submitting a proposal to the student's research advisor(s) for final approval. Prerequisite: SLPD 621.

**SLPD 623. Capstone II. 3 Units.**

Continues the capstone project, requiring students to complete a needs assessment and program development. Provides information in data collection, data management techniques, and introduction to various data analysis strategies. Prerequisite: SLPD 622.

**SLPD 624. Capstone III. 3 Units.**

Continues with remaining data collection and beginning data analyses for capstone project. Prerequisite: SLPD 600, 610, 621, 622, 623.

**SLPD 625. Capstone IV. 3 Units.**

Requires final implementation of aspects of the capstone. Requires student to prepare a manuscript and participate in online critical discussions with classmates. Prerequisite: SLPD 623.

**SLPD 626. Dissemination of Research. 3 Units.**

A culmination course in which students complete their manuscript and perform an oral presentation for their completed research project. Prerequisites: SLPD 600, 610, 621, 622, 623, 624, 625.

## Statistics (STAT)

### Courses

**STAT 509. General Statistics. 4 Units.**

Introduces statistical methods of summarizing, analyzing, presenting, and interpreting data, with emphasis on health-related data. Includes: normal and binomial distributions; probability; central limit theorem; confidence intervals; and, hypothesis testing using t-tests, ANOVA, correlation, linear regression, and chi square. Introduces multivariate analysis. Includes extensive laboratory exercises using SPSS.

**STAT 515. Grant- and Contract-Proposal Writing. 3 Units.**

Overview of research and program-based grantsmanship. Provides a comprehensive review of relevant core structures, stakeholders, processes, factors, and essential skills. Demonstrates in a "real world"-type practice environment, key steps in identification of funding resources, proposal development, submission, and review process. Includes: developing specific aims or objectives, determining appropriate research or program design, evaluation, budgets, 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. Prerequisite or concurrent: STAT 548 or STAT 549; or consent of instructor.

**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. Prerequisite: STAT 521.

**STAT 523. Biostatistics III. 3 Units.**

Acquaints public health graduate students with methods for analyzing correlated data using a regression point of view. Includes longitudinal data analysis and cluster/nested data. Covers the use of random effects models and generalized estimation equations (GEE) and more. Emphasis is on how the data should be analyzed rather than on theory. Prerequisite: STAT 522.

**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-Meier estimator, piecewise exponential estimator, and other equivalent estimators. Cox proportional hazard model and associated statistical inferences. Prerequisite: STAT 522.

**STAT 548. Analytical Applications of SAS and R. 2 Units.**

Introduces learning the SAS and R statistical programming languages. Includes basic data manipulation, graphics, and introductory statistical analysis. Also emphasizes decision making regarding choice of statistical procedures and interpretation of computer output. Prerequisite or concurrent: STAT 509 or STAT 521; or passing score on the computer-competency examination.



**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. Prerequisite or concurrent: STAT 509 or STAT 521.

**STAT 557. Research Data Management. 3 Units.**

Addresses basic data and file manipulation using database-management systems for health research. Includes: importing, exporting, merging, and linking files for a variety of applications; creating, updating, and querying databases; and, basic programming, application development, and data entry. Prerequisite: STAT 509 or STAT 521; STAT 548 or STAT 549.

**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. Prerequisite: PHCJ 615.

**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. Prerequisite: STAT 522.

**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. Prerequisite: EPDM 509, STAT 521; or consent of instructor.

## Surgery (SURG)

### Courses

**SURG 599. Surgery Directed Study. 1.5-18 Units.****SURG 701. Surgery Clerkship. 1.5-12 Units.**

Management of acute, subacute, and nonacute surgical pathologies in general surgery, anesthesia, and surgical specialty services. Distinguishes among emergent and nonemergent presentations in the following patient categories: trauma, oncology, surgical infections, acute presentation of abdominal pain and its differential; and, chronic conditions commonly seen in a general surgery or surgical specialty clinic.

**SURG 821. Surgery Subinternship. 1.5-6 Units.**

Introduction to the surgical internship. Provides in-depth, hands-on experience in the management of acute, subacute, and nonacute surgical pathologies during service in the emergency department, inpatient settings, outpatient clinics, and the operating room. Addresses emergent and nonemergent presentations. Includes experience in acute care surgery, surgical oncology, or general surgery.

**SURG 822. Surgery Intensive Care. 1.5-6 Units.**

A four-week, surgical ICU course. Focuses on care of the critically ill patient who is under the care of the surgical intensivist. Exposes students primarily to patients in the surgical ICU; while also providing experience in evaluating/assessing patients on the emergency ward and in the operating room, as well as those encountered when responding to acute calls for intensive care on the ward (CODE BLUE and rapid response). Involves patients from all surgical services.

**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.

# OCICU COURSES

Loma Linda University offers the following general education courses online through LLU's membership in the Online Consortium of Independent Colleges and Universities (OCICU), a virtual academic consortium in which member institutions collaborate in sharing online, credit-bearing courses. All consortium members are regionally accredited, independent, and not-for-profit institutions. OCICU is managed by Higher Learning Partners of Regis University in Denver, Colorado.

Students register through LLU. Courses and grades earned are posted on the LLU transcript. Upon registration, students are provided information for accessing the online learning management system of the provider institution (colleges/university teaching the course).

## **ARTA 205 The Language of Art (4)**

General introduction to art. Looks at works of art through the study of theory, terminology, themes, design principles, media, and techniques, with an introduction to the visual arts across time and diverse cultures. *GE Domain 2*

## **COMM 244 Interpersonal Communication (4)**

Principles of verbal and nonverbal transactions that occur in relationships. Study of theory and research findings as well as their application to communication in interpersonal relationships in personal and professional contexts. *GE Domain 5*

## **COMM 246 Intercultural Communication (4)**

Introduction to intercultural communication in domestic and/or global contexts. Influence of cultures, languages, and social patterns on how members of groups relate among themselves and with members of different ethnic and cultural groups. Theory and knowledge of effective communication within and between cultures. Appreciation and comparison of communication among diverse groups within the larger context of American culture. *GE Domain 5*

## **ECON 254 Principles of Macroeconomics**

Introductory course focusing on aggregate economic analysis. Topics include market systems, aggregate measures of economic activity, macroeconomic equilibrium, money and financial institutions, monetary and fiscal policy, international economics, and economic growth. *GE Domain 4*

## **ECON 255 Principles of Microeconomics (4)**

Introductory course focusing on choices of individual economic decision-makers. Topics include scarcity, specialization and trade, market equilibrium, elasticity, production and cost theory, market structures, factor markets, and market failure. *GE Domain 4*

## **ENGL 107 English Composition II (4)**

Instruction in argumentation and critical writing, critical thinking, analytical evaluation of primarily non-fiction texts, research strategies, information literacy, and proper documentation. *GE Domain 2*  
Prerequisite: English Composition I

## **ENGL 208 Survey of World Literature (4)**

Comparative study of selected works, in translation and in English, of literature from around the world, including Europe, the Middle East, Asia, and other areas. *GE Domain 2*

## **HIST 111 World Civilization I (4)**

Survey of the development of world civilizations from their emergence to the eighteenth century. *GE Domain 2*

## **HIST 112 World Civilization II (4)**

Survey of the development of world civilizations from the eighteenth century to the present. *GE Domain 2*

## **HIST 156 Survey of American History to 1865 (4)**

Historical survey of the European colonization of North America and of the United States through Reconstruction. *GE Domain 2*

## **HIST 157 Survey of American History since 1865 (4)**

Historical survey of the United States from the end of the Civil War to the present. *GE Domain 2*

## **MATH 121 College Algebra (4)**

College-level course in algebra for majors in the Liberal Arts: polynomial, rational, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; and analytic geometry. *GE Domain 3*  
Prerequisite: Grade of C or better in Intermediate Algebra.

## **MATH 122 Trigonometry (4)**

Study of trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and introduction to vectors. *GE Domain 3*  
Prerequisite: Grade of C or better in MATH 121.

## **MATH 124 Precalculus (6)**

Preparation for calculus: polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric functions and their graphs; analytic geometry; and polar coordinates. *GE Domain 3*

## **MUHL 205 Music Appreciation (4)**

Survey of art music in Western civilization. Topics studied include but are not limited to elements of music, basic musical forms, music periods, styles, and the role of music and musicians in the Western world. *GE Domain 2*

## **PHIL 204 Introduction to Philosophy**

Introduces philosophical ideas and methods concerning knowledge, reality, and values. Topics include the sources and limits of knowledge as well as the nature of reality. Other topics that may be examined from a philosophical perspective include the nature of the self, truth, ethics, religion, science, language, beauty and art, political theory, and mind. *GE Domain 2*

## **SOCI 104 Introduction to Sociology (4)**

Introductory study of the basic concepts, theoretical approaches, and methods of sociology. Topics typically include the analysis and explanation of social structure, group dynamics, socialization and the self, social stratification, culture and diversity, social change, global dynamics, and application of sociological ideas to everyday life. *GE Domain 4*

## **SPAN 101 Elementary Spanish I (4)**

Introductory course in beginning language acquisition in a cultural context through listening, speaking, reading, and writing. Students interact with authentic language in cultural context. *GE Domain 2*

## **SPAN 102 Elementary Spanish II (4)**

Continues to teach language acquisition in a cultural context through listening, speaking, reading, and writing at the second semester level. Students continue to interact with authentic language in cultural context. *GE Domain 2*

Prerequisite: SPAN 101 or equivalent.

# 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

ABBASI, CAROLIN. Assistant Professor, Department of Anesthesiology SM  
M.D. Rosalind Franklin University of Medicine and Science, Illinois 2011

ABBOY, RAMADAS. Assistant Clinical Professor, Department of Medicine SM  
M.B.B.S. Stanley Medical College, India 1967

ABD-ALLAH, SHAMEL A. Professor, Department of Pediatrics SM  
M.D. Loyola Stritch Medical School, Chicago, Illinois 1989

ABDELHALIM, FOUAD M. Adjunct Assistant Professor, Department of Pathology and Human Anatomy SM  
M.D. Ain Shams University, Egypt 1980

ABDEL-SAYED, SHELLEY F. Assistant Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 2004

ABDIPOUR, AMIR. Assistant Professor, Department of Medicine SM  
M.D. Shahid Beheshti University of Medical Science, Tehran, Iran 1996

ABDRABOU, RASHA. Assistant Professor, Department of Physician Assistant Sciences AH  
Dr.P.H. Loma Linda University PH 2009

ABDUL-MUTAKABBIR, JACINDA C. Assistant Professor, Department of Pharmacy Practice SP and Department of Basic Sciences SM; and Member FGS  
Pharm.D. University of Saint Joseph, Connecticut 2017

ABOU-ZAMZAM, AHMED MOHAMMED, JR. Professor, Department of Surgery SM  
M.D. Yale University School of Medicine, Connecticut 1992

ABROMOV, DMITRY. Assistant Professor, Department of Medicine SM  
M.D. Albany Medical College, New York 2007

ABRAMS, KRISTEN K. Assistant Professor, Department of Psychiatry SM

M.D. Loma Linda University 2004

ABROLAT, MARIA. Assistant Clinical Professor, Department of Pediatrics SM  
M.D. University of California, Los Angeles 1996

ABUDAYYEH, ISLAM. Associate Clinical Professor, Department of Medicine SM  
M.D. Medical College of Wisconsin 2000  
M.P.H. Loma Linda University PH 2000

ABU-ZAHRA, HILAL S. Assistant Professor, Department of Pediatrics SM  
M.D. Boston University, Massachusetts 2012

ACHARYA, PATRICIA T. Adjunct Assistant Professor, Department of Radiology SM; and Assistant Professor, Department of Pediatrics SM  
M.D. Rosalind Franklin University of Medicine and Science, Illinois 2008

ACHIRILOAIE, ADINA F. Assistant Professor, Department of Radiology SM  
M.D. Loma Linda University SM 2005

ACOSTA, OSCAR. Assistant Professor, Department of Dental Education Services SD  
D.D.S. University DeLaSalle, Bajio, Mexico 2010

ADEOYE, OLAYEMI O. Assistant Professor, Department of Pharmaceutical and Administrative Sciences SP and Department of Basic Sciences SM  
M.B.B.S. University of Lagos, Nigeria 2004  
M.P.H. Loma Linda University PH 2008  
Ph.D. Loma Linda University, SM 2013

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 1977

AFIFI, GHADA Y. Assistant Clinical Professor, Department of Plastic and Reconstructive Surgery SM  
M.D. Albany Medical College, New York 1990

AFKAMI, KAIVAN K. Adjunct Assistant Professor, Department of Dental Education Services SD  
D.D.S. Baylor University, Texas 2001

AGAPIAN, JOHN V. Assistant Professor, Department of Surgery SM  
M.D. Rosalind Franklin University of Medicine and Science, Illinois 2000

AGOSTON, ENDRE. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2014

AGYEMAN, KOFI D. Assistant Clinical Professor, Department of Orthopaedic Surgery SM  
M.D. Baylor University, Texas 2015

AHAMBRA, DAVID C. Assistant Professor, Department of Family Medicine SM  
M.B.B.S. Abia State University, Nigeria 2006  
M.P.H. University of North Texas 2012

AHMAD, BORHAAN S. Assistant Professor, Department of Pediatrics SM  
M.D. Kabul University, Afghanistan 1981

AHMED, ZULFIQAR. Assistant Professor, Department of Anesthesiology SM

- M.B.B.S. King Edward Medical University, Pakistan 1988
- AJA, GODWIN N. Assistant Professor, School of Public Health PH  
Dr.P.H. Loma Linda University PH 2008
- AKA, PAUL KOJI. Assistant Clinical Professor, Department of Surgery SM  
M.D. Loma Linda University SM 1986
- AKAMINE-DAVIDSON, SANDRA M. Assistant Clinical Professor,  
Department of Ophthalmology SM  
O.D. Southern California College of Optometry 1989
- AKELE, ZEBAYEL. Assistant Professor, Department of Medicine SM  
M.D. Jimma University, Ethiopia 1991
- AL FAGIH, MOHAMMED RASHID. Professor, Department of  
Cardiopulmonary Sciences AH  
M.B.Ch.B. Baghdad Medical College, Iraq 1971
- AL-ARDAH, ALADDIN JAMAL. Associate Professor, Department of  
Restorative Dentistry SD  
B.D.S. Jordan University of Science and Technology, Jordan 1999
- ALBERT, MATTHEW R. Assistant Professor of Medicine SM  
M.D. Tufts University, Massachusetts 1998
- ALBRECHT, EDWARD G. Assistant Professor, Division of General Dentistry  
SD  
D.D.S. Loma Linda University SD 1980
- ALDOVINO, SHADRACH F. Instructor, Clinical Laboratory Science AH  
B.S. Adventist University of the Philippines 2016
- ALEMI, QAIS. Associate Professor, Department of Social Work and Social  
Ecology BH; and Member FGS  
M. P. H., M.B.A. Loma Linda University PH 2013
- AL HEZAIMI, KHALID. Professor, Department of Endodontics SD  
B.D.S., M.Sc. King Saud University, Saudi Arabia 1999
- ALI, ANDREA N. Instructor, Department of Emergency Medicine SM  
M.P.A. Loma Linda University AH 2021
- ALI, ARHM. Instructor, Department of Pediatrics SM  
M.B.B.S. Ziauddin University, Pakistan 2010  
M.S. University of Texas, Medical Branch Galveston 2015
- ALIPOON, ALAN. Instructor, Department of Cardiopulmonary Sciences AH  
B.S. California State University, San Bernardino 2000
- ALIPOON, LAURA LYNN. Professor, Department of Radiation Technology  
AH  
Ed.D. La Sierra University 2001
- ALISMAIL, ABDULLAH K. Associate Professor, Department of  
Cardiopulmonary Sciences AH and Department of Medicine SM; and  
Member FGS  
Ph.D. Claremont Graduate University, California 2021
- ALLARD, MARTIN W. Emeritus Professor, Department of Anesthesiology  
SM  
M.B.Ch.B. University of Capetown, South Africa 1971
- ALLEN, JONATHAN. Assistant Clinical Professor, Department of  
Orthopedic Surgery SM  
M.D. Loma Linda University SM 2007
- ALVAREZ, JESSICA J. Instructor, Department of Emergency Medicine SM  
M.P.A. Loma Linda University AH 2019
- AMAAAR, YOUSEF G. Associate Research Professor, Department of  
Surgery SM  
Ph.D. Simon Fraser University, British Columbia, Canada 1997
- AMASYALI, AKIN S. Instructor, Department of Urology SM  
M.D. Istanbul University, Turkey 2005
- AMBS, NATESHA M. Assistant Professor, Department of Family Medicine  
SM  
M.D. Loma Linda University SM 2010
- AMIN, NIRAV. Associate Professor, Department of Orthopedic Surgery SM  
M.D. Drexel University 2008
- AMINI, FARHAD. Assistant Professor, Department of Periodontics SD  
D.D.S. University of Detroit Mercy 2011
- AMINI, M. REZA. Assistant Professor, Department Medicine SM  
M.D. Tehran University, Iran 1999
- AMINI, SANAZ. Assistant Professor, Department of Gynecology and  
Obstetrics SM  
M.D. Tehran University of Medical Science, Iran 2002
- AMINIKHARRAZI, TAHER. Assistant Clinical Professor, Department of  
Restorative Dentistry SD  
D.M.D. Boston University 2001
- AMR, MAHA M. Assistant Professor, Department of Pediatrics SM  
M.B.Ch.B. Cairo University, Egypt 1983
- ANDAYA, MICHAEL A. Instructor, Department of Pediatrics SM  
M.D. Loma Linda University SM 2017
- ANDERSEN, SHARILYN M. Assistant Professor, School of Public Health  
PH  
M.P.H. Loma Linda University PH 2008
- ANDERSON, DENNIS K. Assistant Clinical Professor, Department of  
Plastic and Reconstructive Surgery SM  
M.D. Loma Linda University SM 1966
- ANDERSON, DONALD LEE. Adjunct Associate Professor, Department of  
Psychiatry SM  
M.D. Loma Linda University SM 1971
- ANDERSON, DONALD LYNN. Associate Professor, Department of  
Anesthesiology SM  
M.D. Loma Linda University SM 1973
- ANDERSON, DUANE R. Assistant Professor, Department of Orthopaedic  
Surgery SM  
M.D. University of Minnesota 1979
- ANDERSON, MARQUELLE. Associate Professor, Department of Pediatrics  
SM  
M.D. Loma Linda University SM 1977
- ANDERSON, NANCY J. Professor, Department of Dermatology SM and  
Department of Basic Sciences SM  
M.D. Loma Linda University SM 1976
- ANDREASEN, TROY J. Assistant Clinical Professor, Department of Plastic  
and Reconstructive Surgery SM



M.D. University of Utah Medical School 1995

ANG, YEN. Assistant Clinical Professor, School of Public Health PH  
Dr.P.H. Loma Linda University PH 2009

ANGELES, DANILYN MAG-AKAT. Professor, Department of Basic Sciences  
SM, Department of Pediatrics SM, School of Nursing SN; and Member  
FGS  
Ph.D. Loma Linda University GS 2000

ANGHESOM-NEGUSSE, DEBORAH. Assistant Professor, Department of  
Medicine SM  
M.D. University of Southern California 2004  
M.P.H. Harvard University 2003

ANHOLM, JAMES D. Associate Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1976

ANSPIKIAN, ARA M. Assistant Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 2005

ANUGERAH, BUKARIS. Assistant Professor, Department of Dental  
Education Services SD  
D.D.S. Loma Linda University SD 1990

APPEL, JAMES ERIC. Assistant Professor, Department of Family Medicine  
SM  
M.D. Loma Linda University SM 2000

APPEL, ROSE K. Assistant Professor, Department of Family Medicine SM  
D.O. Lake Erie College of Osteopathic Medicine, Pennsylvania 2011

APPLEGATE, PATRICIA JEAN. Associate Professor, Department of  
Medicine SM  
M.D. University of Southern California 1980

APPLING, HEATHER N. Assistant Professor, Department of Orthotics and  
Prosthetics AH  
M.S. Loma Linda University 2010

ARA, SHETA. Assistant Clinical Professor, Department of Practice SP  
Pharm.D. University of Southern California 2001

ARAKAWA, TIMOTHY. Assistant Professor, Department of Medicine SM  
Ph.D., M.D. Loma Linda University SM 2008, 2009

ARBABI, ZARSHID. Assistant Professor, Department of Medicine SM  
M.D. Iran University 1990

ARCERITO, KIM N. Assistant Clinical Professor, Department of Pharmacy  
Practice SP  
Pharm.D. University of California, San Francisco 1993

ARCOBELLO, JONATHAN T. Assistant Professor, Department of Medicine  
SM  
M.D. Wayne State University, Michigan 2015

ARDESHIRPOUR, FARHAD. Adjunct Assistant Professor, Department of  
Otolaryngology and Head and Neck Surgery SM  
M.D. University of North Carolina, Chapel Hill 2008

ARDILES, YONA R. Assistant Professor, Department of Medicine  
D.O. Lake Erie College of Osteopathic Medicine 2010

ARECHIGA, ADAM L. Associate Professor, Department of Psychology BH  
and School of Public Health PH

Psy.D., Dr.P.H. Loma Linda University ST, PH 2006

ARENE, TAGBO E. Assistant Clinical Professor, Department of Psychiatry  
SM  
M.B.B.S. University of Port Harcourt, Nigeria 2003  
M.P.H. California State University, Northridge 2009

ARIUE, BARBARA K. Assistant Professor, Department of Pediatrics SM  
M.D. University of Vermont 1993

ARMIJO, JAVIER ALONSO. Assistant Clinical Professor, Department of  
Family Medicine SM  
M.D. University of California, Irvine 1991

ARMON, CARMEL. Professor, Department of Neurology SM  
M.D. Technion-Israel Institute of Technology, Israel 1980  
M.H.S. Duke University, North Carolina 1993

ARMSTRONG, DANIEL REID. Assistant Professor, Division of General  
Dentistry SD  
D.D.S. Loma Linda University SD 1972

ARMSTRONG, DARLENE A. Associate Professor, Department of Dental  
Hygiene SD  
M.A. Azusa Pacific University 2005

ARNETT, G. WILLIAM. Adjunct Assistant Professor, Department of  
Orthodontics SD  
D.D.S. University of Southern California 1972

ARNETT, R. LESLIE, JR. Emeritus Professor, Department of Periodontics  
SD  
D.D.S. University of Southern California 1959  
M.S. Loma Linda University SD 1968

ARTEAGA-HERNANDEZ, EDNA S. Assistant Clinical Professor,  
Department of Family Medicine SM  
M.D. University of Montemorelos, Mexico 1984

ARYAN, KARLA A. Assistant Professor, School of Nursing SN  
M.A.M. University of Redlands, California 2004

ASHBURN, ANGELIKA. Assistant Professor, School of Nursing SN  
D.N.P. Loma Linda University SN 2021

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

ASSADI AZARBAIJANI, RAMIN. Assistant Clinical Professor, Department  
of Medicine SM  
M.D. Tehran University of Medical Sciences 2000

ASSAI, MARIAN. Assistant Clinical Professor, Department of Medicine SM  
M.B.Ch.B. University of Alexandria, Egypt 2005

ASSAL, MARIAN F. Assistant Clinical Professor, Department of Medicine  
SM

M.B .Ch.B. Alexandria University, Egypt 2004

ATHAR, SYED. Assistant Professor, Department of Medicine SM  
M.D. Indiana University 2005

ATIGA, ROLANDO A., JR. Assistant Clinical Professor, Department of  
Physician Assistant Sciences AH  
M.D. Ross University, Dominica, West Indies 1999

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

AUNG, GREGORY L. Assistant Clinical Professor, Department Pharmacy  
Practice SP  
Pharm.D. University of the Pacific 2010

AUSTIN, CRAIG EUGENE. Instructor, Department of Clinical Laboratory  
Science AH  
M.S.P. The University of Florida 2017

ALVALOS, JONATHAN D. Assistant Clinical Professor, Department of  
Preventive Medicine SM  
M.D. University of Texas Health Sciences, Houston 2014

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

AYE, LYDIA L. Assistant Clinical 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

AZIM, MANSOOR. Assistant Professor, Department of Medicine SM  
M.D. University of California, Los Angeles 2012

BABA, NADIM. Professor, Department of Restorative Dentistry SD; and  
member FGS  
D.M.D. University of Montreal, Quebec, Canada 1996  
M.S. Boston University 1999

BABA DJARA, MONITA. Assistant Professor, School of Public Health PH  
Dr.P.H. Boston University 2014

BACHELLER, CATHERINE A. Assistant Professor, Department of Medicine  
SM  
M.D. Loma Linda University SM 1979

BACKSTROM-GONZALES, MELISSA K. Instructor, Department of  
Communication Sciences and Disorders AH  
M.S. University of Redlands, California 1987

BADALAMENTI, CONO P. Adjunct Assistant Professor, Department of  
Preventive Medicine SM

M.D. University of Massachusetts Medical School, Worcester 2010

BADAUT, JEROME. Adjunct Associate Professor, 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, CAROLINE. Assistant Professor, School of Nursing SN  
M.S.N. University of California, Los Angeles 2011

BAEK, HESUK H. Assistant Professor, Department of Medicine SM  
M.D. Medical College of Georgia 2000

BAEK, KELLY E. Assistant Professor, Department of Social Work and  
Social Ecology BH  
Ph.D. Loma Linda University BH 2018

BAERG, JOANNE E. Professor, Department of Surgery SM and Associate  
Professor, Department of Pediatrics SM  
M.D. University of British Columbia, Canada 1990

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Dr.P.H. Loma Linda University PH 2014

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BAKER, GRACE T. Instructor, Department of Clinical Laboratory Science  
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B.S. University of California, Riverside 1991

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SD  
D.M.D., M.P.H. A.T. Still University of Health Sciences 2014  
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BAKLAND, LEIF KRISTIAN. Distinguished Emeritus Professor, Department  
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- BALLI, MEAGHAN A. Assistant Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1998
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Psy.D. Loma Linda University BH 2013
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M.S. Loma Linda University SN 1992
- BANDY, ALEXANDRA J. Instructor, Department of Anesthesiology SM  
M.S.N. University of Virginia 2014
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M.B.B.S. Imperial College London 1999
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M.D. Vanderbilt University 2008
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- BANKS, AIESHEA L. Assistant Professor, Department of Communication Sciences and Disorders AH  
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Ph.D. University of California, Los Angeles 2004
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M.D. Texas Tech University 1980
- BAREH, GIHAN M. Associate Professor, Department of Gynecology and Obstetrics SM
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Ed.D. La Sierra University 2010
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M.D. University of Illinois at Chicago 2014
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Dr.P.H. Loma Linda University PH 2010
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- BASRAI, IMTIAZ. Assistant Clinical Professor, Department of Psychiatry SM  
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M.S. Walden University, Minnesota 2017
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- BAZ, SAMUEL. Assistant Professor, Department of Medicine SM  
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- BEDDOE, RANDY A. Adjunct Assistant Professor, Department of Family Medicine SM  
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University of North Dakota, Grand Forks 2004
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- BHAT, VENKATESH G. Associate Professor, Department of Psychiatry SM  
M.B.B.S. University of Mysore, India 1979
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Ph.D. Loma Linda University FGS 2002
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M.D. University of Buenos Aires School of Medicine, Argentina 1993
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- BILLIMORIA, PHIROZE E. Emeritus Professor, Department of Radiology SM  
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- BILLET, JEFFREY N. Assistant Clinical Professor, Department of Psychiatry SM  
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- BINUS, DANIEL L. Adjunct Assistant Professor, Department of Psychiatry SM  
M.D. Loma Linda University SM 2006
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B.S.N. Azusa Pacific University 2018
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M.D. University of Chicago, Pritzker 2001
- BLAINE, ANDREW C. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. New York University School of Medicine 1989
- BLAKELY, ELEANOR A. Adjunct Research Professor, Department of Radiation Medicine SM  
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- BLANCO TOPPING, RICHARD. Adjunct Instructor, School of Public Health PH  
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- BLAND, DAVID. Emeritus Associate Professor, Department of Medicine SM  
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BOBKO, JOSHUA. Adjunct Assistant Professor, Department of Emergency  
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BOCK, MATTHEW J. Assistant Professor, Department of Pediatrics SM  
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BOHR, THOMAS W. Associate Professor, Department of Neurology SM  
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BOLDA, LAUREN M. Assistant Professor, Department of Physician  
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M.P.A. Loma Linda University AH 2017

BOLGER, STEVEN J. Assistant Professor, Department of Emergency  
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BOLING, WARREN. Professor, Department of Neurosurgery SM and  
Department of Physician Assistant Sciences AH  
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BOLTON, STEPHANIE L. Assistant Professor, Department of Psychiatry  
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M.D. Loma Linda University SM 2003

BONDON, EDWINA F. Assistant Clinical Professor, Department of Social  
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BONILLA, CESAR A. Assistant Professor, Department of Medicine SM  
M.D. Universidad de Cartagena, Colombia 1997

BONNET, REINER B. Adjunct Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1981

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Therapy AH  
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BORKOWSKI, CAITLIN S. Assistant Professor, Department of Emergency  
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- BRENNER, MEGAN L. Professor, Department of Surgery SM  
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- BRINEGAR, CHARLES H. Emeritus Associate Professor, Department of Medicine SM  
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M.D. Loma Linda University SM 2010

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HODGKIN, GEORGIA W. Professor, Department of Nutrition and Dietetics AH  
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HOFFMANN, OLIVER C. Associate Professor, Department of Periodontics SD  
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HOFMEISTER, ELIZABETH M. Adjunct Associate Professor, Department of Ophthalmology SM  
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HOLLOWAY, GRANT L. Adjunct Assistant Professor, Department of Dental Education Services SD  
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D.D.S. Loma Linda University SD 1963

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M.D. Loma Linda University SM 2005

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Ph.D. University of Detroit 1975
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M.D. Loma Linda University SM 1982
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- LARSON, DAVID R. Professor, School of Religion SR  
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Ph.D. Claremont Graduate University 1982
- LARSON, MARC R. Assistant Clinical Professor, Department of Orthodontics SD  
D.D.S. Loma Linda University SD 2000
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M.D. Loma Linda University SM 1963
- LATOUR, DONN A. Adjunct Assistant Professor, Department of Dermatology SM  
Ph.D. Loma Linda University GS 1990  
M.D. Loma Linda University SM 1992
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M.B.B.S. University of Hong Kong 1976
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Pharm.B. University of Wisconsin, Madison 1989
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- LAU, KATHLEEN M. Assistant Professor, Department of Gynecology and Obstetrics SM  
M.D. Loma Linda University SM 1982
- LAU, K. H. WILLIAM. Research Professor, Department of Medicine SM  
Ph.D. Iowa State University 1982
- LAUER, RYAN E. Associate Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 2003
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M.D. Eastern Virginia Medical School 2001
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Dr.P.H. Loma Linda University 2012
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M.D. Hahnemann Medical College, Philadelphia, Pennsylvania 1974
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Pharm.D. University of California, San Francisco 1995
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M.D. Rush University, Illinois 2013
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D.D.S. Columbia University 1991
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M.D. Loma Linda University SM 1988
- LEE, GILBERT H. Assistant Clinical Professor, Department of Family Medicine SM  
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- LEE, GRACE J. Assistant Professor, Department of Psychology BH  
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- LEE, JERRY WINFIELD. Professor, School of Public Health PH  
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- LEE, SHIRLEY ANN. Associate Professor, Department of Dental Hygiene  
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B.S. Loma Linda University SD 1982  
M.S. Loma Linda University IDS 2007
- LEE, SONNY C. Associate Professor, Department of Medicine SM and  
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- LEE, STEVE. Assistant Clinical Professor, Department of Medicine SM  
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- LEE, TIMOTHY T. Assistant Professor, Department of Psychiatry SM  
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M.S. Loma Linda University GS 1992  
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- LOOMIS, MICHELLE B. Assistant Professor, Department of Dental Hygiene SD  
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M.D. Loma Linda University SM 1984
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M.D. Loma Linda University SM 1996

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MAKEN, KANWALJEET. Assistant Professor, Department of Medicine SM  
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M.D. Maulana Azad Medical College, India 1995

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Dr.P.H. Loma Linda University PH 1993
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D.N.S. University of San Diego 1996
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M.Sc. University of London, UK 1992
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M.D. University of California, Davis 2008
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M.D. Ross University 2006
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M.D. Loma Linda University SM 1999
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M.S. Loma Linda University SD 2009
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Ph.D. University of California, Los Angeles 2011
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Dr.P.H. Loma Linda University PH 2006
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Dr.P.H. Loma Linda University PH 2005
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M.D. University Autonomous of Guadalajara, Mexico 1974
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Ph.D. Claremont Graduate University 1988

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M.D. University of Hawaii 1975
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M.D. Loma Linda University SM 1996
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- ORLICH, MICHEAL J. Assistant Professor, Department of Preventive Medicine SM and School of Public Health PH  
M.D. University of Michigan 2001
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M.D. Loma Linda University SM 1970
- ORR, ROBERT D. Professor, Medical Education SM  
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- ORTIZ, LARRY. Professor, Department of Social Work and Social Ecology BH; and Member FGS  
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- OSBORNE, JOHN E. Assistant Professor, Department of Emergency Medicine SM  
M.D. Loma Linda University SM 1979
- OSHIRO, BRYAN T. Associate Professor, Department of Gynecology and Obstetrics SM, School of Public Health PH; and Member FGS  
M.D. Loma Linda University SM 1985
- OSORIO, CAROLINA. Assistant Professor, Department of Psychiatry SM  
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M.B.A. University of Phoenix 1998
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M.D. University of Hawaii, Manoa 1998
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- OWEN, JASON E. Adjunct Associate Professor, Department of Psychology BH  
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M.D. University of Vermont 2003
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Ph.D. Loma Linda University SST
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- PORTER, CORWIN. Assistant Clinical Professor, School of Public Health PH  
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Ph.D. University of San Diego 2001
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- POTTS, MICHAEL L. Adjunct Assistant Professor, Department of Restorative Dentistry SD  
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- PRENDERGAST, THOMAS J. Associate Clinical Professor, School of Public Health PH  
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- PRESTON, WILLIAM. Associate Professor, Department of Radiation Medicine SM  
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- PRIESTER, TIFFANY C. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2004
- PRIETTO, CARLOS A. Clinical Professor, Department of Orthopedic Surgery  
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- PRIETTO, MIGUEL P. Assistant Clinical Professor, Department of Orthopedic Surgery  
M.D. University of California, Irvine 1978
- PROCHAZKA, ERNEST J. Associate Clinical Professor, Department of Preventive Medicine SM  
M.D. University of Vienna, Austria 1983
- PROCTOR, GEORGE JASON. Assistant Clinical Professor, Department of Psychiatry SM  
M.D. University of Virginia 1993
- PROUSSAEFS, PERIKLIS THEODORE. Associate Clinical Professor, Department of Restorative Dentistry SD  
D.D.S. University of Athens School of Dentistry, Greece 1993
- PRZEKOP, ALLISON A. Assistant Professor, Department of Pediatrics SM  
D.O. Western University of Health Sciences, California 1999
- PUDER, DAVID J. Assistant Professor, Department of Psychiatry SM and Department of Medicine SM  
M.D. Loma Linda University SM 2010
- PUERTO, SOFIA. Assistant Clinical Professor, School of Nursing SN  
Ph.D. Columbia Pacific University 1993
- PUESCHEL ROBIN. Assistant Professor, School of Nursing SN  
D.N.P. Brandman University, California 2014
- PRUITT, LAURA N. Assistant Professor, Department of Pediatrics SM  
M.D. University of Southern California 2013
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M.D. Case Western Reserve University, Ohio 1993  
D.D.S. University of Southern California 1990  
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M.B.B.S. Government Medical College, India 2003
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D.B.A. George Washington University, Washington D.C. 1978
- PURUSHOTHAM, WINOLA R. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 2003
- PUVVULA, LAKSHMI K. Assistant Professor, Department of Medicine SM  
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- QI, CHRISTINA H. Assistant Clinical Professor, Department of Pharmacy Practice SP  
Pharm.D. University of Southern California 2010
- QIN, HAIXIA. Associate Professor, Department of Medicine SM  
B.M. Xi'an Jiaotong University, China 2001  
Ph.D. Medical College of Georgia 2010
- QIN, XUE ZHONG. Associate Research Professor, Department of Medicine SM and Department of Basic Sciences SM  
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M.D. Tongji Medical University, China 1986
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M.B.B.S. King Edward Medical University, Pakistan 1995

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M.D. Kerman University of Medical Sciences, Iran 2010

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D.D.S. Cairo University Dental School 1971
- ROGERS, FRANK R. Associate Clinical Professor, Department of Plastic and Reconstructive Surgery SM  
M.D. Loma Linda University SM 1974
- ROGERS, MARK. Clinical Instructor, Department of Cardiopulmonary Sciences AH  
B.S. Loma Linda University AH 1988
- ROGERS, REBECCA L. Assistant Professor, School of Nursing SN  
D.N.P. Samuel Merritt University, California 2017
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D.D.S. Loma Linda University SD 1983
- ROGGENKAMP, CLYDE L. Associate Professor, Division of General Dentistry SD  
D.D.S. Loma Linda University SD 1970  
M.S.D. Indiana University 1973  
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Ph.D. Loma Linda University SM 2008  
M.D. Loma Lina University SM 2009
- ROJAS, HEATHER L. Associate Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 2003
- ROMAN, MAHER ABDELSAYED. Assistant Professor, Department of Medicine SM  
M.D. Cairo University, Egypt 1984
- ROMANO, THOMAS J. Assistant Professor, Department of Medicine SM  
M.D. Yale University 1973
- RONNEY, ALEXIS M. Instructor, Department of Otolaryngology and Head and Neck Surgery SM  
Au.D. Illinois State University 2020
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M.D. Loma Linda University SM 1976
- ROQUIZ, DANIEL A. Adjunct Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 2011
- ROSARIO, CAROLAN R. Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1988
- ROSENFELD, JEFFREY. Professor, Department of Neurology SM  
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- ROSENQUIST, ROBERT C., JR. Assistant Clinical Professor, Department of Ophthalmology SM  
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- ROSS, TERI HAINES. Instructor, Department of Clinical Laboratory Science AH  
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Psy.D. Loma Linda University ST 2010

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- ROUSE, TERRI LYNNE. Assistant Professor, Department of Health Informatics, Information Management, and Administration AH  
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M.D. Loma Linda University SM 1999
- ROWSELL, EDWARD H. Assistant Professor, Department of Pathology and Human Anatomy SM and Department of Clinical Laboratory Science AH  
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M.D. Northwestern University, Illinois 2002
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- SHAH, PRAFUL C. Assistant Clinical Professor, Department of Pediatrics SM  
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- SHAKESPEARE, BRENT E. Assistant Clinical Professor, Department of Dental Education Services SD  
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M.D. Loma Linda University SM 1988
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- SHAREEF, TAHSEEN N. Assistant Clinical Professor, Department of Medicine SM  
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M.D. Xian Medical University, China 1995
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Ph.D. Loma Linda University AH 2013
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B.S. The Johns Hopkins University 1977
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Pharm.D. Temple University, Pennsylvania 2010
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M.S.P.H. Loma Linda University PH 1997
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M.D. Loma Linda University SM 1980
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Dr.P.H. Loma Linda University 2009

SPECHT, N. LENNARD. Assistant Professor, Department of Medicine SM  
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M.D. Loma Linda University SM 1983

SPENCER-HWANG, RHONDA K. Associate Professor, School of Public  
Health PH  
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SPENCER-SAFIER, MICHELLE M. Assistant Professor, Department of  
Pharmacy Practice SP  
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SPENCER-SMITH, E. LAURENCE. Assistant Clinical Professor, Department  
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M.D. Loma Linda University SM 1982

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Anesthesiology SM  
M.D. Loma Linda University SM 1981

SRIKUREJA, DANIEL P. Assistant Professor, Department of Surgery SM  
M.D. Loma Linda University SM 2010

SRIKUREJA, WICHIT. Adjunct Assistant Professor, Department of  
Medicine SM  
M.D. Loma Linda University SM 1997

SRINIVASAN, B. DOBLI. Adjunct Associate 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, D. GRAHAM CHARLES. Associate Professor, Department of  
Dental Education Services SD  
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

STAPLES-EVANS, HELEN MURIEL. Assistant Professor, School of Nursing  
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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

STEELE, ROBERT C. Associate Professor, Department of Emergency  
Medicine SM  
M.D. Wayne State University, Michigan 1996

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Orthopedic Surgery SM  
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B.S. Loma Linda University AH 2015
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B.S. Oakwood University, Alabama 1993  
M.P.H. Loma Linda University PH 1997
- 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 and Oral and Maxillofacial Surgery SD  
M.D. Loma Linda University SM 2000
- STEWART, CHARLES EUGENE III. Associate Professor, Department of Otolaryngology and Head and Neck Surgery SM  
M.D. Loma Linda University SM 1970
- 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
- STIER, GARY R. Professor, Department of Anesthesiology SM and Department of Medicine SM  
M.D. Loma Linda University SM 1983
- STINNETT, RANDY M. Assistant Professor, Department of Family Medicine SM  
Psy.D. Loma Linda University ST 2010
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M.D. Facultad de Medicina Montevideo, Uruguay 1985
- STORFJELL, JUDITH L. Adjunct Professor, School of Nursing SN  
Ph.D. University of Michigan 1987
- STOTTLEMYER, DEBRA D. Associate 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. Clinical Instructor, Department of Oral and Maxillofacial Surgery 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  
D.D.S. University of Iowa 1972
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Ph.D. Cornell University, New York 1980  
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- 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 Professor, Department of Medicine SM  
M.D. University of California, Irvine 1975
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M.D. Loma Linda University SM 1990
- STRUTZ, JUDITH M. Associate Professor, Division of General Dentistry SD  
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- STUDER, KAREN R. Assistant Professor, Department of Preventive Medicine SM and School of Public Health PH  
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- STULTZ, DAVID B. Assistant Professor, Department of Medicine SM  
M.D. University of Cincinnati College of Medicine 2000
- SWEENEY, THOMAS J. Assistant Professor, Department of Medicine SM and School of Nursing SN  
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- TAN, JOHN C. Assistant Professor, Department of Pediatrics SM  
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- 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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M.D. University of Southern California 1993
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M.D. Loma Linda University SM 1990
- SWABB, RICHARD JOHN. Assistant Professor, Department of Medicine SM  
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D.N.P. University of Colorado, Colorado Springs 2011
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D.P.T. Loma Linda University AH 2004
- SWENSON, TERRY R. Assistant Professor, School of Religion SR  
D.Min. George Fox University Evangelical Seminary 2009
- SYED, HASAN M. Associate Professor, Department of Orthopedic Surgery SM  
M.D. University of California, Los Angeles 2004
- SYMS, JAMES M. Assistant Professor, Department of Physical Therapy AH  
D.Sc. Loma Linda University AH 2008
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D.D.S. Indiana University School of Dentistry 1989
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D.O. Touro University, Nevada 2010
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- TABRIZIANI, HOSSEIN. Assistant Professor, Department of Medicine SM  
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M.D. Rosario National University, Argentina 1981
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Ed.D. Pepperdine University 2003
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M.S.N. University of California, Los Angeles 2019
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M.D. Loma Linda University SM 1992
- TAMESIS, RICHARD R. Associate Professor, Department of Ophthalmology SM  
M.D. University of the Philippines, 1983
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- TAN, GORDON L. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 2011
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Ph.D. Loma Linda University, SM 2018
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M.D. Loma Linda University SM 2009
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M.D. University of Illinois, Chicago 2007
- TAN, MATTHEW S. C. Assistant Professor, Department of Surgery SM  
M.D. Loma Linda University SM 1969
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M.D. Loma Linda University SM 1971
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M.D. Loma Linda University SM 1994
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Ph.D. University of Arizona 1997  
M.D. Wannan Medical College 1983
- TARIN, LUCILA. Assistant Professor, Department of Family Medicine SM  
M.D. Medical College of Wisconsin 2000
- TARR, JOHN D.F. Clinical Professor, Department of Psychiatry SM  
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- TARVER, CHRISTOPHER C. Assistant Professor, Department of Physical Medicine and Rehabilitation SM  
M.D. Texas A & M University Health Science Center 2012
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TATARYN, RODERICK W. Lecturer, Department of Endodontics SD  
D.D.S. Loma Linda University SD 1989  
M.S. Loma Linda University GS 1994

TAVAKOLI, SHAHRIYAR. Assistant Professor, Department of Medicine SM  
M.D. Universidad Central del Caribe, Puerto Rico 1988  
M.H.A. University of Phoenix, Southern California 2020

TAVAKOLI-AHMADY, HAMIDEH. Assistant Clinical Professor, Department  
of Pharmacy Practice SP  
Pharm.D. Western University of Health Sciences, Pomona, California 2000

TAVOC, RONELA K. Instructor, Department of Ophthalmology SM  
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TAYLOR, BARRY L. Emeritus Professor, Department of Basic Sciences SM  
Ph.D. Case Western Reserve University, Cleveland, Ohio 1973

TAYLOR, BERNARD A. Clinical Professor, School of Religion SR  
Ph.D. Hebrew Union College 1989

TAYLOR, DAVID L. JR. Emeritus Professor, School of Religion SR  
D.Min. Vanderbilt University, Tennessee 1977

TAYLOR, DESMYRNA RUTH. Assistant Clinical Professor, Department of  
Physical Therapy AH  
M.P.T. Loma Linda University AH 1995

TAYLOR, ELIZABETH ANN JOHNSTON. Professor, School of Nursing SN;  
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Ph.D. University of Pennsylvania 1992

TAYLOR, GUY D. Assistant Professor, Department of Orthodontics SD  
D.D.S. West Virginia University 1967  
M.S. Western Virginia University 1971

TAYLOR, L. PARNELL. Emeritus Professor, Division of General Dentistry  
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D.D.S. University of Nebraska 1980

TAYLOR, THOMAS W., JR. Instructor, Department of Cardiopulmonary  
Sciences AH  
B.S. University of Redlands 1993

TAYYARAH, MAJID. Assistant Clinical Professor, Department of  
Cardiothoracic Surgery SM  
M.D. New York University School of Medicine 1997

TEASLEY, LAURA A. Assistant Clinical Professor, Department of  
Ophthalmology SM  
M.D. Loma Linda University SM 2000

TEEL, ROBERT W. Emeritus Professor, Department of Physiology and  
Pharmacology SM  
Ph.D. Loma Linda University GS 1972

TEICHMAN, SIEGMUND. Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1968

TEJADA-DE-RIVERO, DAVID A. Associate Professor, School of Public  
Health PH  
M.P.H. University of North Carolina 1958  
M.D. University of Chile 1956

TELLER, DOUGLAS W. Assistant Professor, Department of Medicine SM

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TENA, RACHAEL L. Assistant Professor, Department of Emergency  
Medicine SM  
M.D. University of Iowa 2017

TERRILL, JUSTIN K. Assistant Professor, Division of General Dentistry SD  
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TERUYA, THEODORE H. Professor, Department of Surgery SM  
M.D. University of Hawaii at Manoa 1985

TESTERMAN, JOHN K. Associate Clinical Professor, Department of Family  
Medicine SM and Department of Psychology BH  
M.D. Loma Linda University SM 1980  
Ph.D. University of California at Irvine 1971

TESTERMAN, NANCY S. Assistant Professor, School of Nursing SN  
M.S. Loma Linda University GS 1971

TETZ, RHONDA L. Instructor, Department of Medicine SM  
M.D. Loma Linda University SM 1996

THAKKER, JAYINI S. Assistant Professor, Department of Oral and  
Maxillofacial Surgery SD  
D.D.S. University of California, San Francisco 2007  
M.D. University of Florida, Gainesville 2011

THELANDER, KEIR J. Assistant Professor, Department of Surgery SM  
M.D. Indiana University School of Medicine 1999

THEODORE, SHARON. Assistant Clinical Professor, Department of  
Ophthalmology SM  
M.D. University of California, San Francisco Medical School 2000

THINN, MIE MIE. Assistant Professor, Department of Medicine SM  
M.B.B.S. Institute of Medicine, Rangoon, Burma 1994

THIO, HOK-MING. Assistant Clinical Professor, Department of Medicine  
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M.D. Loma Linda University SM 1993

THIRUVENGADAM, NIKHIL R. Assistant Professor, Department of  
Medicine SM  
M.D. Stanford University, California 2014

THOMAS, JASON S. Assistant Clinical Professor, Department of  
Psychiatry SM  
M.D. American University of the Caribbean 1999

THOMAS, MARK E. Assistant Professor, Department of Emergency  
Medicine SM  
D.O. College of Osteopathic Medicine of the Pacific 1989

THOMAS, NADIYA S. Instructor, Department of Ophthalmology SM  
O.D. New England College of Optometry, Massachusetts 2020

THOMAS, TAMARA L. Professor, Department of Emergency Medicine SM,  
Department of Pediatrics SM, and Department of Medical Education SM  
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THOMAS, WILSON G. Assistant Professor, Department of Pediatrics SM  
M.D. Loma Linda University SM 2013

THOMAZIN, GLEN A. Assistant Clinical Professor, Department of  
Preventive Medicine SM

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THOMPSON, DAVID CARL. Assistant Professor, Department of Surgery SM  
M.D. University of Pittsburgh 1973

THOMPSON, GARY J. Assistant Professor, Department of Medicine SM  
D.O. Western University of Health Sciences, Pomona, California 2001

THOMPSON, KEVIN STUART. Associate Professor, Department of Pathology and Human Anatomy SM  
M.D. Loma Linda University SM 1987

THOMPSON, RALPH J., JR. Emeritus Professor, Department of Surgery SM  
M.D. Loma Linda University SM 1951

THOMPSON, TERESA L. Assistant Professor, Department of Anesthesiology SM  
M.D. Loma Linda University SM 1990

THOMSEN, CALVIN J. Assistant Professor, School of Religion SR and School of Public Health PH  
Ph.D. Loma Linda University FGS 2008

THOMSEN, C. TORBEN. Clinical Professor, School of Public Health PH  
Ph.D. Michigan State University 1973

THOMSEN, LANE C. Emeritus Professor, Department of Oral Diagnosis, Radiology, and Pathology SD  
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THORP, ANDREA W. Associate Clinical Professor, Department of Emergency Medicine SM and Department of Pediatrics SM  
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THORPE, DONNA G. Associate Professor, Department of Allied Health Studies AH; Assistant Professor, School of Public Health PH  
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M.D. University of Hawaii at Manoa 1985

TIRTAMAN-SIE, CONNY. Assistant Professor, Department of Medicine SM  
M.D. Erasmus University, Netherlands 1985

TITO, DAVID D. Assistant Professor, Department of Emergency Medicine SM  
M.D. University of California, Los Angeles 1991

TIWARI, BHOODEV. Assistant Clinical Professor, Department of Medicine SM  
M.B.B.S. Sardar Patel Medical College, India 1988

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M.D. Albany Medical College 2006

TOHM, DONALD G. Assistant Clinical Professor, Department of Ophthalmology SM

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TOLEDO, GERARDO A. M. Assistant Clinical Professor, Department of Endodontics SD  
D.D.S. Universidad Nacional de Cordoba, Argentina 1993  
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M.D. University of Hawaii at Manoa 2002

TOMLIN, JASON A. Assistant Professor, Department of Surgery SM  
M.D. Loma Linda University SM 2000

TONG, KAREN ANGELA. Associate Professor, Department of Radiology SM and Department of Basic Sciences SM  
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M.D. Loma Linda University SM 1979  
Ph.D. University of Oslo, Norway 1990

TONSTAD, SIGVE K. Professor, School of Religion SR; Assistant Professor, Department of Medicine SM  
M.D. Loma Linda University SM 1979  
Ph.D. University of St. Andrews, United Kingdom 2005

TOOMA, TOM SAEED. Assistant Clinical Professor, Department of Ophthalmology SM  
M.D. Loma Linda University SM 1979

TOOMASIAN, CORY J. Assistant Professor, Department of Emergency Medicine SM  
M.D. Wayne State University, Michigan 2017

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Ph.D. University of London, England, UK 1995

TORQUATO, JOHN L. Adjunct Assistant Professor, Department of Family Medicine SM  
M.D. Loma Linda University SM 1995

TORRALBA, KARINA D. Associate Professor, Department of Medicine SM  
M.D. University of Santo Tomas Faculty of Medicine and Surgery, Philippines 1996

TORRES, ABEL. Professor, Department of Dermatology SM and Department of Basic Sciences SM; Associate Professor, School of Public Health PH  
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TORRES, F. JOSE. Assistant Professor, Division of General Dentistry SD  
D.D.S. Javieriana University, Colombia 1990  
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TORRES, SAMUEL E. Assistant Professor, Department of Anesthesiology SM  
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M.D. Loma Linda University SM 2005
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M.D. Loma Linda University SM 1988
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D.D.S. Loma Linda University SD 2015
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Ph.D. Brigham Young University, Utah 1998
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- VORA, HALLEY P. Assistant Professor, Department of Surgery SM  
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M.D. Loma Linda University SM 2001
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M.D. Creighton University, Nebraska 1994
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D.O. Western University of Health Science, Pomona, California 2003
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D.C. Los Angeles Department of Chiropractic 1989
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Psy.D. Pepperdine University 2003
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Ph.D. California Southern University 2003
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M.S. Loma Linda University GS 1973

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M.D. Loma Linda University SM 1966

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- WOODWARD, CLARICE W. Emerita Professor, School of Nursing SN  
M.S. University of California, Los Angeles 1963
- WOOSLEY, KYNDRA J. Assistant Professor, Department of Nutrition and Dietetics AH  
M.S. Loma Linda University 2011
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M.H.A. Loma Linda University PH 1988
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Ph.D. University of Wollongong, Australia 2007
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M.N. University of California, Los Angeles 1993
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Ph.D. Loma Linda University GS 2004
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Ph.D. McGill University, Quebec, Canada 2002
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Ph.D. Claremont Graduate School 1976
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M.D. Loma Linda University SM 1985
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Pharm.D. University of Southern California 2004
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# GENERAL INFORMATION

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Leo Ranzolin Jr., Th.D.	Dean	School of Religion

# 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

### Administration—AH

#### General Administration

CRAIG R. JACKSON, J.D., M.S.W., Dean

JOYCE W. HOPP, Ph.D., Dean Emerita

LEE BERK, Dr.P.H., Associate Dean, Research Affairs

G. CHARLES DART, JR., Ph.D., M.B.A., Associate Dean, Student Affairs

EVERETT B. LOHMAN III, D.Sc., Associate Dean, Graduate Academic Affairs

ERNEST SCHWAB, M.S., Ph.D., Associate Dean, Academic Affairs

KENT CHOW, M.B.A., Assistant Dean, Finance

EVERETT B. LOHMAN III, D.Sc., Assistant Dean, Research Affairs

RASHA ABDRABOU, Dr.P.H., M.P.H., Director, Assessment and Program Review

RAJAE AREE, Director, Computer Services

YOLANDA MARTINEZ, M.A.M., Director, Portfolio

DONNA THORPE, Dr.P.H., Director, School Institutional Research and Accreditation

SARA PINTO DA SILVA, Director, Student Affairs and Recruitment

YVONNE WREN, Manager of Alumni and Recruitment

TIMOTHY SEAVEY, Ed.D., M.A.M., Coordinator, General Education

SAVANNAH MLOT, B.S., Development Officer

JORDYN SMITH, B.A., Communication Specialist

#### Academic departments

##### Allied Health Studies

CRAIG R. JACKSON, J.D., M.S.W., Chair, Department of Allied Health Studies

TERRY D. DOUGLAS, Ph.D., Program Director for Doctor of Philosophy, Rehabilitation Science

ARTHUR MARSHAK, M.S., Ed.D., Program Director for Master of Science and Certificate, Health Professions Education

##### Cardiopulmonary Sciences

DAVID LOPEZ, Ed.D., Chair, Department of Cardiopulmonary Sciences;

ABDULLAH ALISMAIL, Ph.D., FCCP, Program Director for Master of Science in Respiratory Care; entry-level Bachelor of Science, Respiratory Care; and Polysomnography Certificate.

ALAN ALIPOON, M.S., Program Director for postprofessional Bachelor of Science, Respiratory Care

PAUL CASILLAS, M.S.R.C., Director of Clinical Education for entry-level Bachelor of Science, Respiratory Care.

LAREN D. TAN, M.D, FCCP, Medical Director, Master of Science in Respiratory Care

N. LENNARD SPECHT, M.D., Medical Director for entry-level Bachelor of Science, Respiratory Care.

##### Clinical Laboratory Science

RODNEY M. ROATH, Ph.D., M.B.A., MT (ASCP), Chair, Department of Clinical Laboratory Science

ALICIA M. TRIPLETT, M.A., MLS (ASCP)<sup>CM</sup>, Program Director for Bachelor of Science, Clinical Laboratory Science; Clinical Coordinator for Bachelor of Science, Clinical Laboratory Science

TERI J. ROSS, M.S., MT (ASCP) SBB, Program Director for Certificate, Phlebotomy

PAUL C. HERRMANN, M.D., Ph.D., Medical Director, Clinical Laboratory Science and Phlebotomy

##### Communication Sciences and Disorders

TERRY D. DOUGLAS, Ph.D., Chair, Department of Communication Sciences and Disorders

KAREN MAINNESS, Ph.D., Program Director for Master of Science and Transitional; Credential Advisor

JENNIFER ST. CLAIR, M.S., Director for Clinical Education

KEITH WOLGEMUTH, Ph.D., CCC-A, Program Director, Doctor of Speech-Language Pathology

##### Health Informatics, Information Management, and Administration

DEBRA HAMADA, Ed.D., M.A., RHIA, Chair, Department of Health Informatics, Information Management, and Administration

BRADEN TABISULA, M.B.A., RHIA, CHDA, Program Coordinator for Master of Science, Health Informatics

PAULINE CALLA CABANADA, M.B.A., RHIA, Recruitment Coordinator for Health Information Administration Program; Program Director for Bachelor of Science and post-B.S. certificate, Health Information Administration

KARLA LAVIN WILLIAMS, Dr.P.H., Program Director for Bachelor of Science, Health-Care Administration

RYAN STEPHAN, D.B.A. (c), M.A., RHIA, Program Director for Certificate, Coding Specialist

##### Nutrition and Dietetics

EDWARD BITOK, Dr.P.H., RDN, Chair, Department of Nutrition and Dietetics; Program Director for Coordinated Program, Nutrition and Dietetics

LESLEY ANNE FOSTER-NICHOLAS, Dr.P.H., RDN, Clinical Coordinator, Department of Nutrition and Dietetics

##### Occupational Therapy

LIANE H. HEWITT, Dr.P.H., CHES, OTR/L, Chair, Department of Occupational Therapy

HEATHER JAVAHERIAN-DYSINGER, O.T.D., OTR/L, Program Director for entry-level Doctor of Occupational Therapy

JULIE D. KUGEL, O.T.D., OTR/L, Program Director, postprofessional Doctor of Occupational Therapy

AARON MOESSER, O.T.D., OTR/L, Academic Coordinator for Fieldwork Education, Occupational Therapy

##### Orthotics and Prosthetics

JOHANNES SCHAEPPER, Ph.D., CPO(E), Chair, Department of Orthotics and Prosthetics

AILEEN KINGSLEY, M.S.O.P., CPO, Program Director, hybrid Master of Science in Orthotics and Prosthetics

MICHAEL MOOR, M.S., CPO, LPO, Program Director for Bachelor of Science, Health Science and Master of Science in Orthotics and Prosthetics

##### Physical Therapy

LAWRENCE E. CHINNOCK, PT, Ed.D., M.B.A., Chair, Department of Physical Therapy; Program Director for entry-level Doctor of Physical Therapy

EVERETT B. LOHMAN III, PT, D.Sc., OCS, Program Director for postprofessional Doctor of Physical Therapy, and Ph.D.

RICHARD J. HUBBARD, PT, M.P.T., D.Sc., OCS, Program Director, Physical Therapist Assistant

JENNIFER RAE RUBIO, PTA, B.S., Director of Clinical Education, Physical Therapist Assistant

THERESA M. JOSEPH, PT, D.P.T., M.B.A., NCS, Director of Clinical Education, entry-level Doctor of Physical Therapy

HENRY GARCIA, PT, D.Sc., OCS, Director of Clinical Education, entry-level Doctor of Physical Therapy

#### **Physician Assistant Sciences**

CATHERINE OMS, Dr.P.H., PA-C, Chair, Department of Physician Assistant Sciences

COURTNEY MARQUEZ, M.P.A., PA-C, Program Director, Master of Physician Assistant Sciences

WESSAM LABIB, M.D., M.P.H., Medical Director, Master of Physician Assistant Sciences

RASHA ABDRABOU, Dr.P.H., M.P.H., Director of Assessment, Master of Physician Assistant Sciences

ERIN GYSBERS, M.P.A.S., PA-C, Didactic Director, Master of Physician Assistant Sciences

SHANNON RIVERA, M.P.A., PA-C, Didactic Coordinator, Master of Physician Assistant Sciences

KRISTIN BATLA, M.S., PA-C, Clinical Director, Master of Physician Assistant Sciences

LAUREN BOLDA, M.P.A., PA-C, Clinical Coordinator, Master of Physician Assistant Sciences

CHARLES HUYNH, M.P.A., PA-C, Clinical Coordinator, Master of Physician Assistant Sciences

#### **Radiation Technology**

LAURA L. ALIPOON, Ed.D., Chair, Department of Radiation Technology

MICHAEL F. IORIO, M.P.A., Ph.D., Associate Chair, Department of Radiation Technology

J. ROBERT CRUISE, M.S.R.S., Program Director, Cardiac Electrophysiology Technology

BRIGIT C. MENDOZA, M.A.M., Program Director for Master of Science in Radiation Sciences, Radiologist Assistant

SUZETTE SANCHEZ, M.S. RT (R) , Program Director, certificates in Special Imaging (CT, MRI and CVI)

RAYNOLD HO, M.S., M.B.A., Program Director for Bachelor of Science, Nuclear Medicine Technology

ERIN N. MARSHALL, B.S., Program Director for Bachelor of Science, Diagnostic Medical Sonography, and Cardiac Certificate

CAROL A. DAVIS, Dr.P.H., Psy.D., Program Director for Bachelor of Science, Radiation Therapy Technology

ALVIN HENSEL, M.D., Medical Advisor, Medical Radiography

GLENN A. ROUSE, M.D., Medical Director for Bachelor of Science, Diagnostic Medical Sonography

DAVID GENTRY, M.D., Medical Director for Bachelor of Science, Nuclear Medicine Technology

TIMOTHY SEAVEY, Ed.D., Second Associate Chair, Department of Radiation Technology; Program Director for Bachelor of Science, Radiation Sciences

WILL EDMUNDS, M.Ed., Program Director for Associate in Science, Medical Radiography

### **Committees—AH**

#### **Administrative Council**

Craig Jackson, Chair

Rasha Abdrabou

Laura Alipoon

Lee Berk

Edward Bitok

Tim Cordett

Sara Costa Pinto da Silva

Lawrence Chinnock

Kent Chow

Charles Dart

Terry Douglas

Debra Hamada

Liane Hewitt

Everett Lohman

David Lopez

Dana McCree

Catherine Oms

Rodney Roath

Johannes Schaepper

Ernest Schwab

Timothy Seavey

Jordyn Smith

Donna Thorpe

President, ex officio

#### **Admissions Committee**

Laura Alipoon

Edward Bitok

Larry Chinnock

Charles Dart

Terry Douglas

Debra Hamada

Liane Hewitt

Craig Jackson

Everett Lohman

David Lopez

Dana McCree, Chair

Rodney Roath

Johannes Schaepper

Ernie Schwab

#### **Clinical Coordinators Committee**

Jennifer St. Clair, Chair

Rajae Aree

Kristin Batla

Janine Benner

Lauren Bolda

Lesley Ann Foster-Nicholas

Raynold Ho

Craig Jackson

Theresa Joseph

Kenneth Nelson

Aaron Moesser

Valerie Mosqueda

Kristine Richard

Suzette Parades Sanchez

Ernie Schwab

Ryan Stephan

Monica Tovar

Alicia Triplett

#### **Faculty Council**

Tim Cordett, Chair

Rasha Abdrabou, Chair-Elect

Mike Iorio, Past Chair

Brenda Boyd, Secretary

Lamitra Baez

Alan Alipoon

Laura Evans

Cory Gheen (Parliamentarian)



Jeremy Hubbard  
 Praveen Injeti  
 Yolanda Martinez  
 James Rippetoe  
 Richard Thorpe  
 Kyndra Woosley

## School of Behavioral Health

### Administration—BH

BEVERLY J. BUCKLES, D.S.W., Dean

ADAM L. ARÉCHIGA, Psy.D., Dr.P.H., Associate Dean for Academic and Student Affairs

SUSANNE B. MONTGOMERY, Ph.D., Associate Dean for Research Affairs

MIRIAM A. OBENAUS, M.B.A., Associate Dean for Finance and Administration

### Department chairs—BH

BEVERLY BUCKLES, D.S.W., Chair, Social Work and Social Ecology

KIMBERLY R. FREEMAN, Ph.D., Executive Associate Chair, Social Work and Social Ecology

DAVID A. VERMEERSCH, Ph.D., Chair, Psychology

KENDAL C. BOYD, Ph.D., Associate Chair, Psychology

WINETTA OLOO, Ph.D., Chair, Counseling and Family Sciences

MICHELLE MINYARD-WIDMANN, M.S., CCLS., Associate Chair, Counseling and Family Sciences

### Committees—BH

#### Academic Council

Adam Aréchiga, Chair  
 Kenny Boyd  
 Lena Lopez Bradley  
 Ruth Browder  
 Beverly Buckles  
 Kimberly Freeman  
 Diana Krueger  
 Talolo Lepale  
 Grace Lee  
 Zephon Lister  
 Michelle Minyard-Widman  
 Mary Moline  
 Susanne Montgomery  
 Holly Morrell  
 Miriam Obenaus  
 Winetta Oloo  
 Larry Ortiz  
 Nichola Seaton-Ribadu  
 David Vermeersch  
 Randall Walker

#### Executive Committee

Beverly Buckles, Chair  
 Adam Aréchiga  
 Kenny Boyd  
 Kimberly Freeman  
 Diana Krueger  
 Michelle Minyard-Widman  
 Susanne Montgomery  
 Miriam Obenaus  
 Winetta Oloo  
 David Vermeersch

### Online Education Committee

Kimberly Freeman, Chair  
 Adam Arechiga  
 Fred Armstrong  
 Kelly Baek  
 Colleen Brenner  
 Beverly Buckles  
 Talolo Lepale  
 Alisha Saavedra  
 Nichola Seaton-Ribadu  
 Randall Walker

### Spiritual Life and Wholeness Committee

Adam Arechiga, Chair  
 Kenny Boyd  
 Dilys Brooks  
 Grace Lee  
 Talolo Lepale  
 Zephon Lister

### Clinical affiliates—BH

Advent Health Orlando  
 Albany Psychology Internship Consortium, VA Albany Medical College  
 Alternative Options Counseling Center  
 American Family Children's Hospital  
 Anaheim School, Anaheim  
 Arosa Agency  
 Arroyo High School, San Bernardino  
 Aspira Foster Family Agency  
 Assessment and Treatment Services Center  
 Aurora Behavioral Health Care  
 Avant-Garde Foster Family Agency  
 Banner Health, Arizona  
 Beaumont Unified School District  
 Benioff Children's Hospital, Oakland  
 BHC Alhambra Hospital  
 Bold Recovery, Los Angeles  
 Boys and Girls Club, Perris  
 Boys and Girls Club, Redlands  
 Brain Wellness Institute, Newport Beach  
 Breakthrough Psychology Group  
 Broward Health, Florida  
 California Counseling Clinics, Santa Barbara  
 California Family Life Center  
 Canyon Ridge Hospital, Chino  
 Care Counselors, Redlands  
 Carolinas Healthcare System  
 Carolyn Wylie Center  
 Casa Colina Centers for Rehabilitation  
 Casa Pacifica Clinical Services  
 Catholic Charities Psychological Services  
 Cedars-Sinai Medical Center, Los Angeles  
 Center for Integrated Family and Health Services, Covina  
 Chaffey College, Rancho Cucamonga  
 Cherokee Health System  
 Child and Family Guidance Center, Northridge  
 ChildHelp Foster and Adoption Agency  
 ChildHelp USA  
 Child Welfare Training, Riverside  
 Children's Hospital of Alabama  
 Children's Hospital, Los Angeles  
 Children's Hospital of Orange County

Children's Hospital of Philadelphia  
 Children's Hospital and Clinics of Minnesota  
 Children's Hospital and Health System, Wisconsin  
 Children's Memorial Hermann Hospital  
 Children's Way Foster Family Agency  
 Christian Counseling Center  
 Citrus Counseling Services, Redlands  
 Citrus Valley Health Partners  
 City of Hope, Duarte  
 City of Riverside  
 Clay Counseling Solutions  
 CNS Network, Inc.  
 Community Access Network  
 Community Action Employee Assistance Program, Inc.  
 Community Hospice of Victor Valley, Apple Valley  
 Concern Outreach, Santa Ana  
 Corona-Norco Unified School District  
 Cottage Children's Medical-Center  
 County of Santa Clara, Santa Clara Valley Medical Center  
 Crittenton Services for Children and Families  
 CSUSB Psychological Counseling Center  
 David and Margaret Youth and Family Services  
 Department of Behavioral Health, San Bernardino  
 Department of Children and Family Services, Los Angeles  
 Department of Social Services, Riverside  
 Department of Veterans Affairs  
 Desert/Mountain Children's Center  
 Destiny Home Health Hospice  
 Dignity Health Northridge Hospital Medical Center  
 Discovery Counseling Center  
 Doctors Hospital of West Covina, West Covina  
 Duke University Health System (Children's Hospital & Health Center)  
 East Valley SELPA  
 FAITHS Program  
 Family H.O.P.E. Foster Family Agency  
 Family Services Association, Riverside  
 Family Solutions Collaborative, Ontario  
 Forest Institute of Professional Psychology  
 Foster Family Network, San Bernardino  
 Fountain of Life  
 Fountain Valley Regional Hospital  
 Gilda's Club Desert Cities  
 Goldsmith Psychological Services, Claremont  
 Grand Terrace Health Care  
 G.R.I.T. (Gang Reduction Intervention Team)  
 Growing Fit  
 Grove Community Counseling Center  
 Harbor-UCLA Medical Center, Los Angeles  
 Hasbro Children's Hospital  
 Hathaway-Sycamores – Child and Family Services  
 Health and Human Services Department of Aging, San Bernardino County,  
 San Bernardino  
 The Help Group, Sherman Oaks  
 Helping Hearts, Ontario  
 Hesperia Unified School District, Hesperia  
 Highlander Children's Services, Riverside  
 Hillview Mental Health Center  
 Hoag Memorial Hospital, Newport Beach  
 HUGS Foster Family Agency  
 Huntington Memorial Hospital, Pasadena  
 Illinois School of Professional Psychology  
 Inland Aids Project  
 Inland Psychiatric Medical Group, Inc.  
 Inland Regional Center, Colton  
 Inland Temporary Homes  
 Inland Valley Recovery Services  
 Innovage California Pace  
 Jerry L. Pettis Memorial VA Medical Center, Loma Linda  
 JFK Memorial Hospital, Indio  
 Jurupa Unified School District, Riverside  
 Kaiser Foundation Hospitals  
 Kaiser Permanente Hospital, Riverside  
 Kaiser Permanente Medical Care Program, Psychiatry Department  
 Kaiser Permanente, Santa Clara Medical Center  
 Knotts Family Agency  
 Koinonia Family Services  
 La Sierra Academy  
 La Sierra University, Department of Social Work  
 Lackland Air Force Base, San Antonio, TX  
 LCS Behavioral Health, Rancho Cucamonga  
 Le-Bonheur Children's Hospital  
 Loma Linda Academy, Loma Linda  
 Loma Linda University Adult Day Services, Loma Linda  
 Loma Linda University Behavioral Medicine Center  
 Loma Linda University. Children's Hospital, Child Life Department  
 Loma Linda University Department of Psychology, Clinic  
 Loma Linda University Marriage and Family Therapy Clinic  
 Loma Linda University Medical Chaplain's Office, Loma Linda  
 Loma Linda University MEND Program  
 Loma Linda University Neuropsychology Department, Loma Linda  
 Loma Linda University Psychiatric Medical Group, Loma Linda  
 Loma Linda University Medical Center, Department of Social Work  
 Loma Linda University Medical Center, Department of Neuropsychology  
 and Rehabilitation Psychology, Physical Medicine and Rehabilitation  
 Long Beach Memorial Medical Center  
 Los Angeles City Department of Child Assessment Center  
 Los Angeles County Child Services  
 Los Angeles Department of Mental Health  
 Lucile Packard Children's Hospital, Stanford  
 Lutheran Social Services, Apple Valley  
 Mass General Hospital for Children  
 Mattel-Children's Hospital UCLA Chase Child Life Program  
 McKinley Children's Center  
 M.D. Anderson Cancer Center  
 Memorial Hermann Health System, Texas  
 Memorial Sloan-Kettering Cancer Center, New York  
 Miller Children's and Women's Hospital, Long Beach  
 Moreno Valley Community Hospital, Moreno Valley  
 Morongo Basin COnseling and Recovery Center  
 Morongo Indian Health Services  
 Morongo Inland Health, Banning  
 Murrieta Valley Unified School District  
 New Horizons Community Wellness Center  
 Norina Verduzco-Murphy, MSW, LCSW and Associates  
 Northridge Hospital Medical Center  
 Northwest Hospital, Texas  
 NYU Winthrop Hospital  
 Oasis Counseling Center, Victorville  
 Office of Aging, Riverside  
 Office of Aging, San Bernardino  
 Olive Crest  
 Ontario Montclair School District  
 Option House Agency  
 Orange County Department of Child Services

Pacific Clinics Institute  
 Pasadena Unified School District  
 Patton State Hospital, Highland  
 Pediatric Neuroassessment Program  
 Perris Valley Recovery Program  
 Phoenix Children's Hospital  
 PHS Counseling  
 Prevea Health, Wisconsin  
 Providence Health System – Southern California  
 Rady Children's Hospital  
 Redlands Community Hospital, Redlands  
 Redlands Unified School District, Redlands  
 Rim Family Services, Sky Forest  
 River Oak County Adult Protection Service  
 River Stones Inc.  
 Riverside Community College District, Riverside  
 Riverside County Department of Mental Health  
 Riverside County Office of Aging  
 Riverside County Office of Education  
 Riverside Department of Social Services, Riverside  
 Riverside/San Bernardino County Indian Health Inc, San Jacinto  
 Riverside University Health System, Behavioral Health  
 SACH-Norton Mental Health Clinic,  
 San Bernardino City Unified School District, San Bernardino  
 San Bernardino County Department of Behavioral Health  
 San Bernardino Department of Social Services, San Bernardino  
 San Bernardino Public Defender, San Bernardino  
 San Diego Hospice and Palliative Care, San Diego  
 San Gorgino Memorial Hospital Behavioral Health Center  
 San Jacinto Unified School District  
 Santa Ana College Health and Wellness Center Psychology Services,  
 Santa Ana  
 Seattle Children's Hospital  
 Senior Care Network, Glendora  
 Serenity Infant Care Homes  
 Sharper Future  
 Shasta County Mental Health Services  
 Silence Aloud Inc., Moreno Valley  
 Simms/Mann UCLA Center for Integrative Oncology, Los Angeles  
 Social Action Community Health System  
 Social Work Action Group  
 Socialwise Consulting  
 South Coast Children's Society  
 South Coast Community Services  
 Southern Arizona VA Health Care System  
 Spokane Mental Health Psychology Services  
 St. Anne's Hospice, Glendale  
 St. Elizabeth Healthcare and Rehabilitation  
 Stella Maris Growth Center for Girls  
 Stepping Stones, San Diego  
 Su Casa, Artesia  
 Sutter Children's Center \*An agreement is drafted for each student  
 Tevera, LLC  
 The Help Group, Sherman Oaks  
 Totally Kids Specialty Healthcare  
 UC Davis Children's Hospital  
 UC Davis Health System  
 UCI Health Sciences Program, Irvine  
 UCLA Health System  
 UCLA Semal, Los Angeles  
 UCSD Health System  
 UCSD Regional Burn Center

UCSF Benioff Children's Hospital, Oakland  
 UCSF Benioff Children's Hospital, San Francisco  
 UnityPoint Health, Des Moines  
 University of Pittsburgh Medical Center (UPMC)  
 University of Redlands  
 University of Riverside  
 USCD VA Psychology Internship Program  
 VA Los Angeles Ambulatory Care Center  
 VA Sierra Nevada Health Care System  
 Val Verde Unified School District  
 Valenta Mental Health  
 Valley Children's Hospital  
 Van Horn Counseling Center  
 Verdugo Hills Hospital, Glendale  
 Veterans Affairs Hospital, Loma Linda  
 Victor Community Support Services  
 Village of Child Hope, Beaumont  
 Vitas Healthcare Corporation of California  
 Vitas Innovative Hospice Care, San Bernardino  
 Walden Family Services  
 Warm Springs Counseling Center, Boise, ID  
 Wayfinder Family Services, Los Angeles  
 West End Valley Counseling, Ontario  
 Western Youth Service, Fullerton  
 White Memorial Medical Center  
 Wilford Hall Medical Center, Lackland Air Force Base  
 Wisconsin Hospitals and Clinics  
 Yale New Haven Health  
 Youth Service Center, Riverside  
 Yucaipa Guidance, Redlands

## School of Dentistry

### Administration—SD

ROBERT A. HANDYSIDES, D.D.S., Dean

MARK ESTEY, D.D.S., Associate Dean, Academic Affairs

JOHN C. BURDICK, M.B.A., Associate Dean, Finance and Administration

ZINA F. JOHNSTON, D.D.S., Assistant Dean, Clinic Administration

EUN-HWI CHO, D.D.S, Assistant Dean, Educational Quality and Outcomes

ESTHER FORDE, RN, M.A., M.B.A., Assistant Dean, Admissions and

Student Affairs

Committees—SD

### Administrative Bodies

Administrative Council

Executive Committee

Faculty Council

### Standing Committees

Academic Review Committee

Admissions Committee

Clinical Quality Assurance Committee

Curriculum Committee

Dental Research Committee

Faculty Promotions Committee

Outcomes Assessment Committee

Program Directors' Committee

### Reference Committees

Awards Committee

Clinic Activities/Materials, Instruments, and Student Issue Committee  
 Communicable Disease Control and Prevention/Infection Control Committee  
 Dental Hygiene Advisory Committee  
 Dental Hygiene Curriculum Subcommittee  
 Diversity Committee  
 Faculty Development Committee  
 Faculty Professional Standards Committee  
 Nominating Committee  
 Safety Committee  
 Service Learning Committee  
 Spiritual Life and Wholeness Committee  
 Student Professional Standards Conduct Committee  
 Teaching and Learning Committee

## School of Medicine

### Administration—SM

TAMARA L. THOMAS, M.D., Dean and Executive Vice President for Medical Affairs,  
 Vacant, Vice Dean, Academic Affairs  
 RICARDO PEVERINI, M.D., Vice Dean, Clinical Affairs  
 TAMARA M. SHANKEL, M.D., Senior Associate Dean for Medical Student Education  
 SARAH M. RODDY, M.D., Associate Dean for Admissions and Recruitment  
 PENELOPE J. DUERKSEN-HUGHES, Ph.D., Associate Dean for Basic Sciences and Translational Research  
 DANIEL K. ROGSTAD, MD, Ph.D., Associate Dean for Basic Science Education  
 KEVIN A. CODORNIZ, M.D., Associate Dean for Clinical Education  
 LYNDIA DANIEL-UNDERWOOD, M.D., Ph.D., Associate Dean for Curriculum Evaluation and Learner Assessment  
 YAMI BAZAN, Ph.D., Associate Dean for Student Affairs  
 Vacant, Associate Dean for Educational Quality and Outcomes  
 Vacant, Associate Dean for Faculty Development  
 ALICE A. WONGWORAWAT, M.B.A., Associate Dean for Finance and Administration  
 DANIEL W. GIANG, MD, Associate Dean for Graduate Medical Education  
 LEROY E. REESE, M.D., Associate Dean for Los Angeles Programs  
 JAMES M. PAPPAS, M.D., Associate Dean for Quality and Patient Safety  
 SUSAN RANZOLIN, B.S.N., Assistant Dean for Admissions  
 M. DANIEL WONGWORAWAT, M.D., Assistant Dean for Career Advisement  
 LAREN TAN, M.D, Assistant Dean for Continuing Medical Education  
 KHIET D. NGO, DO, Assistant Dean for Curricular Innovation  
 Vacant, Assistant Dean for Development  
 HANSEL M. FLETCHER, Ph.D., Assistant Dean for Graduate Student Affairs  
 ELAINE A. HART, M.D., Assistant Dean for Regional Campuses  
 Vacant, Assistant Dean for Residency Curriculum  
 AMY C. HAYTON, M.D., Assistant Dean for Student Affairs and Wellness  
 Vacant, Assistant Dean for Veterans Affairs  
 Vacant, Assistant to the Dean for Diversity  
 LINDA J. MASON, M.D., Assistant to the Dean for Medical Staff Affairs  
 Vacant, Special Assistant to the Dean for Administration  
 JAY MILLER, M.B.A., 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 Academic Leadership Committee

Clinical Faculty Executive Committee  
 Clinical Science Faculty Advisory Council  
 Competency Committee  
 Continuing Medical Education Committee  
 Curriculum Committee  
 Dean's Administrative Council  
 Executive Committee  
 LLUFMG Board of Directors  
 Medical School Performance Evaluation Committee  
 Professionalism Committee  
 Promotions Committee  
 Scholarship and Financial Aid Committee  
 Spiritual Life and Wholeness Committee  
 Student Technology Committee  
 Tenure Committee

## School of Nursing

### Administration—SN

ELIZABETH BOSSERT, Ph.D., RN, Dean  
 SHAWN COLLINS, Ph.D., D.N.P., CRNA, Associate Dean for Academic Affairs and Graduate Nursing  
 BRANDIE RICHARDS, D.N.P., FNP-C, CCRN, Associate Dean for Undergraduate Nursing  
 Assistant Dean for Finance and Administration TBD  
 ANGEL ASHBURN, D.N.P., RN, CCRN, Director, B.S. Program  
 ELLEN D'ERRICO, Ph.D., RN, Director, M.S. Nurse Administration Program and Ph.D. Program  
 LISA HIGHTON, M.S., RN, Director, Undergraduate Postlicensure Program  
 GLORIA, HUERTA, D.N.P., FNP-C, NHDP-BC, AGNP-C, CNS, RN, Director M.S./D.N.P. Program  
 ANDREIA LOFTHOUSE, M.B.A., Executive Director, Student and Alumni Relations  
 ANNE BERIT PETERSEN, Ph.D., M.P.H., APRN, CNS, CHES, Director, Global Nursing  
 ROBIN PUESCHEL, D.N.P., AGACNP-BC, RN, RNFA, Director, Clinical Practice  
 LISA ROBERTS, Dr.PH., FNP-BC, CHES, RN, Director, Research

### Councils and committees

#### Faculty Council

Faculty-voted chair  
 All full-time and part-time faculty

#### M.S./D.N.P. Council

Gloria M. Huerta, D.N.P., FNP, RN, Chair  
 All full-time and part-time M.S. and D.N.P. faculty

#### RN to B.S. Council

Lisa Highton, M.S., RN, Chair

#### Ph.D. Council

Ellen D'Errico, Ph.D., RN., NEA-BC, Chair  
 All full-time and part-time Ph.D. faculty

#### Undergraduate Faculty Council

Brandie Richards, D.N.P., FNP-C, CCRN, Associate dean, Chair  
 All full-time and part-time undergraduate faculty

#### Standing faculty committees

Admissions  
 Clinical Practice  
 Curriculum  
 Diversity & Inclusion

Faculty Affairs  
 Global Nursing  
 Rank and Tenure  
 Research  
 Safety  
 Social  
 Spiritual Life and Wholeness  
 Today's Nursing Technology (TNT)

## Clinical facilities—SN

Ace Pediatrics, Hemet  
 Adventist Health, Roseville (corporate office)  
   Adventist Medical Center, Oregon  
   Castle Medical Center, Hawaii  
   Central Valley General Hospital, Hanford  
   Feather River Hospital, Paradise  
   Glendale Adventist Medical Center, Glendale  
   Hanford Community Medical Center, Hanford  
   Redbud Community Hospital, Clearlake  
   St. Helena Hospital, St. Helena  
   Simi Valley Hospital, Simi Valley  
   Sonora Regional Medical Center, Sonora  
   South Coast Medical Center, Laguna Beach  
   Tillamook County General Hospital, Oregon  
   Ukiah Valley Medical Center, Ukiah  
   Walla Walla General Hospital, Washington  
   White Memorial Medical Center, Los Angeles  
 Adventist Health System/Sunbelt, Florida  
 Allied Professional Nursing Care, Upland  
 Alvord Unified School District, Riverside  
 Antelope Valley Community Clinic, Lancaster  
 Apex Urgent Care Center, Inc. Beaumont  
 Arrowhead Regional Medical Center, Colton  
   ARMC Fontana Family Medical Clinic, Fontana  
   ARMC McKee Family Health Clinic, San Bernardino  
   ARMC Westside Family Health Center, Rialto  
 Asian American Resource Center, San Bernardino  
 Beaver Medical Clinic, Redlands  
  
 California State University, San Bernardino  
 Carcamo, Dr. Mario, Riverside  
 CareMore Health Plan, Cerritos  
 Carino-Gateb, Dr. Zosima, Indio  
 Community Health Systems, Inc.  
   Cedars-Sinai Medical Center, Los Angeles  
   Central Neighborhood Health Foundation, Los Angeles  
  
 Charter Hospice, Colton  
 Children's Hospital, Los Angeles  
 Children's Hospital of Orange County, Orange  
 Children's Primary Care Medical Group, Inc., San Diego  
 Choice Medical Group, Apple Valley  
   Choice Medical Group, Hesperia  
   Choice Medical Group, Victorville  
 Citrus Valley Health Partners, Covina  
 Citrus Valley Medical Associates Norco  
   Citrus Valley Family Practice, Corona  
   Citrus Valley Pediatric & Family, Norco  
   Citrus Valley Urgent Care, Corona  
   Compton Family Practice, Corona  
   Norco Medical Group & Urgent Care, Norco  
 City of Colton Early Childhood Education, Colton

Cooley Ranch School  
 Paul J. Rogers School  
 Reche Canyon School  
 Sierra Vista School  
 Wilson School  
 City of Hope National Medical Center, Duarte  
 Clinica Msr. Oscar Romero, Los Angeles  
   Boyle Heights/East Los Angeles  
   Pediatrics, Los Angeles  
 Clinica Salud & Familia, Pomona  
 Coachella Valley Volunteers in Medicine, Indio  
 College Medical Center, Long Beach  
 Community Health System, Moreno Valley  
   Arlanza Family Health Center, Riverside  
   Eastside Health Center, Riverside  
   Eisenhower Medical Center, Rancho Mirage  
   Fallbrook Family & Women's Health Center, Fallbrook  
   Inland Empire Community Health Center, Bloomington  
   Moreno Valley Family Health Center, Moreno Valley  
 Companion Hospice, Riverside  
 Compassus, Colton  
 Coram Healthcare, Ontario  
 Cornerstone Community Health, San Bernardino  
 Corona Regional Medical Center, Corona  
 County of Riverside Department of Community Health, Riverside  
   Banning Neighborhood Health Clinic  
   Corona Neighborhood Health Clinic  
   Hemet Neighborhood Health Clinic  
   Indio Neighborhood Health Clinic  
   Lake Elsinore Neighborhood Health Clinic  
   Palm Springs Neighborhood Health  
   Riverside Neighborhood Health Clinic  
   Roberts, Laura, MD  
   Rubidoux Neighborhood Health Clinic  
 County of Riverside Department of Public Health, Riverside  
  
 Delta Hospice of California, Chino  
 Desert Valley Hospital, Victorville  
 Desert Valley Medical Group, Inc., Victorville  
 Desert VIP Urgent Care, Palm Springs  
 Desert VIP Urgent Care, Rancho Mirage  
 Dignity Health Urgent Care Centers, Fontana and Highland  
 Dignity Health, West, Pasadena  
   Bakersfield Memorial Hospital, Bakersfield  
   Community Hospital of SB  
   Mercy Hospital  
   Mercy Southwest Hospital  
   Northridge Hospital Medical Center, Northridge  
   St. Bernadine Medical Center, San Bernardino  
   St. John's Regional Medical Center  
   St. John's Pleasant Valley Hospital  
 Dogon Behavioral Medical Group Inc., Riverside  
 Dr. Mike's Walk-In Clinic, Hesperia  
  
 Eisenhower Medical Center, Rancho Mirage  
 Empire Medical Center, San Bernardino  
 Etiwanda School District, Etiwanda  
  
 Fallbrook Health Center Family Practice and Urgent Care, Fallbrook  
 Farrohi, MD, Farideh, Northridge  
 Foothill Pediatrics, Upland  
 Fullerton College, Fullerton



Garden Pediatrics, Redlands  
GK Urgi Care, Inc., Hemet

Hemet Unified School District, Hemet  
Hi-Desert Medical Center, Joshua Tree  
Hi Desert Memorial Healthcare District, Yucca Valley  
Hoag Memorial Hospital Presbyterian, Newport Beach  
Hospice of the North Coast, Carlsbad

Infinity Medical Group, Apple Valley  
Inland Pain Specialists, Laguna Niguel  
Inscriptions Children's Clinic, Wildomar  
In Your Best Interest, Redlands  
Ultimate Medical Practice, Highland

Jurupa Unified School District, Riverside

Kaiser Permanente, Fontana  
Kaiser Permanente, Riverside  
Kaiser Permanente Southern California  
Inland Valley Care and Rehabilitation Center  
Kanakriyeh, Dr. Mohammed, Pediatric Cardiology Specialist, San Bernardino  
Keen Medical Group, Inc., Hesperia  
Kern Medical Center, Bakersfield  
Kids & Teens Medical Group, Pasadena  
Kim, Dr. Dong, Moreno Valley  
New Start Well Being Clinic  
Knollwood Psychiatric Hospital and Chemical Dependency Center, Riverside

La Sierra University Church, Riverside  
Lake Elsinore Family Care Center, Lake Elsinore  
Lakewood Regional Medical Center, Lakewood  
Lam, Richard C., MD, Inc., Temecula  
Las Palmas OB/GYN, Rancho Mirage  
Palm Springs OB/GYN  
Life Connect Medical, Rancho Mirage  
Linda Valley Care Center and Linda Valley Villa, Loma Linda  
Loma Linda Academy Childrens Center, Loma Linda  
LLUH Facilities:  
Loma Linda University Behavioral Medicine Center, Redlands  
Loma Linda University Children's Hospital, Loma Linda  
Loma Linda University East Campus Hospital, Loma Linda  
Loma Linda University Family Medical Group, Loma Linda  
Loma Linda University Health Care, Loma Linda  
Loma Linda University Medical Center, Loma Linda  
Loma Linda University Medical Center, Murrieta  
Loma Linda University Medical Center Adult Day Health Services, Loma Linda  
Loma View Pediatric Medical Clinic, San Bernardino

Mackey, Dr. Timothy, Riverside  
Manzoor Kazi Medical Associates, Palm Desert  
Memorial Care Saddleback Medical Center, Laguna Hills  
Mission Healthcare, San Diego  
Mokabberi, Rasoul, MD., Santa Ana  
Moreno Valley Urgent Care, Moreno Valley  
Mountains Community Hospital, Lake Arrowhead  
Mukergee, Dr. Kamana, Riverside  
Mukherjee, Dr. Ashis, San Bernardino  
Inland Heart and Vascular Medical Associates

Namita, Mohideen, MD, Pediatric Clinic, Upland

New Hope Free Clinic, Redlands  
Newport Huntington Medical Group, Huntington Beach  
Nhan Hoa Comprehensive Health Care Clinic, Garden Grove

Ontario-Montclair School District, Ontario  
Orangethroat Medical Group, Riverside

Physicians for Healthy Hospitals, Inc.  
GK URGI Care, Inc. dba San Jacinto Medical Clinic/Urgent Care  
Menifee Valley Medical Center, Menifee  
Raja, Manikanda G., MD, Hemet  
Physicians' Hospital of Murrieta, LLC, Murrieta  
Pinnacle Medical Group, Fontana  
Planned Parenthood of the Pacific Southwest, San Diego  
Planned Parenthood, Carlsbad  
Planned Parenthood, Moreno Valley  
Planned Parenthood, Riverside  
Pomona Community Health Center, Pomona  
Premium Care Clinic, Loma Linda  
Primary Medical Group, Ventura  
Providence Health System – Southern California, Torrance

Rahman, Jamal, MD, Montclair  
Raincross Medical Group, Riverside  
Ramos, Dr. Jasmine, Palm Desert  
Rancho Family Medical Group, Temecula  
Recovery Innovations, Inc., Perris  
Redlands Community Hospital, Redlands  
Redlands Community Hospital Outreach Clinic, Redlands  
Redlands Healthcare, Redlands  
Reyes, Dr. Patricia, LaQuinta  
Rising Stars Business Academy, Moreno Valley  
Riverside Community College District  
Moreno Valley College, Moreno Valley  
Norco College, Norco  
Riverside City College, Riverside  
Riverside Community Hospital, Riverside  
Riverside County Department of Mental Health, Riverside  
Riverside Medical Clinic, Riverside (corporate)  
Riverside Medical Clinic, Riverside (4 locations)  
Riverside Medical Clinic, Corona  
Riverside Mission Pediatric Medical Group, Riverside  
Riverside University Health System-Medical Center, Riverside  
Robinson, Dr. Magda, San Bernardino  
Ross Legacy Medical Group, Mission Viego

SAC Health System, San Bernardino  
Salhab, Rene, MD, Inc. Upland  
San Antonio Regional Hospital, Upland  
San Bernardino City Unified School District, San Bernardino  
San Bernardino County Department of Public Health, San Bernardino  
Ontario Clinic  
Redlands Clinic  
San Bernardino Clinic  
Victor Valley Clinic, Hesperia  
San Bernardino Medical Orthopaedic Group  
San Bernardino Physicians Associates, San Bernardino  
Schwartz, Dr. Stanley H., Inc., Moreno Valley  
Sharp Healthcare, San Diego  
Sherman Indian High School, Riverside  
Shriners Hospital for Children, Los Angeles  
Sierra Neuroscience Institute, Glendale  
SOAR Charter Academy, San Bernardino

South Coast Medical Group, Aliso Viejo  
 Southern California Emergency Medicine, San Bernardino  
 Southland Integrated Services, Inc., Santa Ana  
 St. Joseph Hospital, Orange  
 St. Jude Medical Center, Fullerton  
   St. Jude Cancer Center, Fullerton  
   St. Jude Heritage Medical Group, Fullerton  
   St. Jude Brea Mobile Site, San Bernardino  
 Spanish Hills Medical Group, Oxnard  
 Sumalangcay, Godofreda B., MD, San Bernardino  
 Symonett Family Medical Center, Colton

Team Nurses Home Health Services, Inc., San Bernardino  
 Temecula Valley Family Medicine, Temecula  
 Tenet Health System Desert, Inc. (Desert Regional Medical Center), Palm Springs  
 Times for Change Foundation, San Bernardino  
 Total Care Walk-In Clinic, Eastvale  
 Totally Kids, Loma Linda

United Family Care, Fontana  
   United Family Care, Rialto  
   United Family Care, San Bernardino  
 UREACH, Loma Linda

VA Hospital, Loma Linda  
 VA Long Beach Healthcare System, Long Beach  
 Valentine Medical Clinic, Riverside  
 Valley Women Care, Indio  
 Veronica's Home of Mercy, Mary's Mercy Center, Inc, San Bernardino  
 Victor Valley Pediatrics, Victorville  
 Visiting Nurse Association and Hospice of Southern California, Claremont

Well-One Health Inc., Perris  
 White Memorial Medical Center, Los Angeles  
 Wholistic Kids & Families, Santa Monica

## School of Pharmacy

### Administration—SP

MICHAEL D. HOGUE, Pharm.D., FAPhA, FNAP, Dean  
 KYLE M. SOUSA, Ph.D., Associate Dean for Academic Affairs  
 ALAN C. CONNELLY, M.B.A., Associate Dean for Finance and Administration  
 LINDA M. WILLIAMS, M.S., Associate Dean for Student Affairs and Admissions  
 WILLIE DAVIS, Ph.D., Assistant Dean for Academic Success  
 NANCY E. KAWAHARA, Pharm.D., M.S.Ed., Assistant Dean for Curriculum and Mentorship  
 KRISTOPHER BOYLE, Ph.D., Assistant Dean for Curricular Innovation  
 ALIREZA HAYATSHAHI, Pharm.D., Chair, Department of Experiential and Pharmacy Practice  
 VICTORIA MASKIEWICZ, Ph.D., Chair, Department of Pharmaceutical and Administrative Sciences

### Committees—SP

Academic Standing and Professionalism  
 Admissions  
 Curriculum  
 Diversity, Equity, and Inclusion  
 Executive  
 Program Assessment  
 Promotion and Tenure

Residency Advisory Committee

### Affiliated/Clinical Facilities—SP

AdventHealth Orlando  
 Adventist Health Bakersfield  
 Adventist Health Glendale  
 Adventist Health Hanford  
 AIDS Healthcare Foundation-AHF Pharmacy, Westside  
 Albertsons/Vons Corporation  
 American Pharmacist Association (APhA)  
 Antelope Valley Hospital  
 Arrowhead Regional Medical Center  
 Avanir Pharmaceuticals

Bonita Family Pharmacy

Cal-Med Pharmacy  
 Cardinal Health #00032  
 Cedars-Sinai Medical Center  
 Children's Hospital of Orange County  
 City of Hope  
 Community Health Group  
 Community Hospital of San Bernardino  
 Corona Regional Medical Center  
 Costco Wholesale Company  
 CVS Caremark/CVS Coram

Department of State Hospitals - Patton  
 Desert Hospital Outpatient Pharmacy  
 Desert Oasis Health Care  
 Dib Pharmaceutical Inc., DBA Better Life Pharmacy

Evolve Pharmacy Solutions  
 Evergreen Rx Pharmacy

Federal Correctional Complex, Victorville

Gojji Health  
 GVHC PMQ Merced Pharmacy (Avita Pharm #1019)  
 GVHC PMQ W. Modesto Pharmacy (Avita Pharm #1020)

Hemet Valley Medical Center  
 Hoag Memorial Hospital Presbyterian

Inland Empire Health Plan  
 Inland Pharmacy

JWCH Clinic PMQ Pharmacy 1 (Avita Pharm)

Kaiser Permanente Southern California

Lifetime Value Pharmacy  
 Loma Linda University Health  
 Loma Linda University Pharmacy at SAC Health  
 Los Alamitos Medical Center

MedWatchers

Newport Bay Hospital  
 Newport Lido Pharmacy

Orange Plaza Pharmacy (Pacific Pharm Group)

Parkview Medical Plaza Pharmacy  
 Parkview Medical Plaza Pharmacy LTC  
 PharMedQuest Pharmacy Services (Avita Pharm)

PIH Health Community Pharmacy (in Whittier)  
 Pomona Valley Hospital Medical Center

Radiance Pharmacy  
 Ralph Grocery  
 Rawson-Neal Psychiatric Hospital  
 Redlands Community Hospital  
 RIS Rx  
 Rite Aid Corporation  
 Riverside Community Hospital  
 Riverside University Health System  
 Riverwalk Healthmart Pharmacy  
 Rxall Pharmacy

Sahmyook Medical Center (in Korea)  
 Sal Pharmacy  
 Sam's Club  
 San Gorgonio Medical Center  
 Smart Care Pharmacy  
 St. Jude Medical Center  
 Sutter Health – Sutter Lakeside Hospital

Torrance Memorial Medical Center

University of California, Irvine Medical Center  
 U.S. Food and Drug Administration

VA Greater Los Angeles Healthcare System  
 VA Loma Linda Healthcare System  
 Valencia Pharmacy (Pacific Pharm Group)  
 Valencia Pharmacy at Henry Mayo  
 Valley Care Pharmacy  
 Valley Children's Hospital  
 Veteran Home of California West Los Angeles

Walgreens Corporation  
 Wal-Mart Corporation  
 Waterman Pharmacy  
 White Memorial Medical Center

Your Drug Store, Inc.

## School of Public Health

### Administration

HELEN HOPP MARSHAK, Ph.D., Dean  
 DWIGHT BARRETT, Ed.D., Executive Associate Dean  
 DONNA L. GURULE, Dr.P.H., Associate Dean for Academic Administration  
 KARL M. McCLEARY, Ph.D., Associate Dean for Strategy  
 WENDY SARAVIA-GENOVEZ, M.S., Assistant Dean for Student Support

### Center Directors

DONNA L. GURULE, Dr.P.H., Executive Director, Center for Teaching and Learning  
 KARL M. McCLEARY, Ph.D., Executive Director, Center for Health Strategy and Innovation  
 JOAN SABATÉ, Dr.P.H., Executive Director, Center for Nutrition, Healthy Lifestyle, and Disease Prevention  
 PRAMIL SINGH, Dr.P.H., Director, Center for Health Research

### Committees

Academic Council  
 Administrative Committee  
 Admissions Committee  
 Alumni Engagement Committee

Awards and Traineeship Committee  
 Diversity Committee  
 Doctoral Programs Committee  
 Faculty Rank, Promotion and Tenure Committee  
 Field Practicum Committee  
 Marketing and Recruitment Committee  
 Master's Programs Committee  
 Research Committee  
 Student Association  
 Student Success Committee

### Affiliated institutions

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

Leo S. Ranzolin Jr., Th.D., Dean

Zane Yi, Ph.D., Associate Dean for Academic Affairs

Saul Barcelo, Ph.D., Director, Center for Whole Person Care: Integrating  
Faith and Healing

Yi Shen Ma, Ph.D., Grace Oei, M.D., Co-directors, Center for Christian  
Bioethics

Whitney Braun, Ph.D., Program Director for Master of Arts, Bioethics

Saul Barcelo, Ph.D., Program Director (*interim*) for Master of Science in  
Chaplaincy

Zdravko Plantak, Ph.D., Program Director for Master of Arts, Religion and  
Society

### Committees—SR

#### Center for Christian Bioethics

Dean of School of Religion, Chair

Faculty of School of Medicine, Vice Chair

Director of Center for Christian Bioethics

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 Medicine

Dean of School of Nursing

Dean of School of Public Health

Dean of School of Pharmacy

Provost of Loma Linda University

LLUH Vice President for Mission and Culture

Representatives-at-large (2)

*Ex officio officers:*

President of Loma Linda University

CEO of Loma Linda University Health

### Center for Whole Person Care: Integrating Faith and Healing

LLUH 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

LLUH Vice President for Educational Affairs

LLUH Vice President for Research Affairs

LLUH Vice President for Wellness

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 Campus Ministries Department

Director of LLUMC Chaplaincy Department

Director of LLUMC Employee Spiritual Care Department

Representative from the LLU School of Religion

Chief nursing officer for LLUH System

Representative from LLUMC Faith and Health Initiative

Representative(s) from the community

### Rank and Tenure

Zdravko Plantak, Chair

Erik Carter

Janice De-Whyte

Theodore Levterov

Jon Paulien

### Admissions Committee

Associate Dean, Chair

Director of Bioethics Program

Director of Chaplaincy Program

Director of Religion and Society Program

Finance Coordinator, School of Religion

## Faculty of Graduate Studies

### Administration—GS

RONALD CARTER, Ph.D., Interim Director

### Committees—GS

#### Graduate Council

Ronald Carter, Chair

Gurinder Bains

Kristopher Boyle

Colleen Brenner

Anna Jung-Wei Chen

Ellen D'Errico

Stephen Dunbar

Hansel Fletcher

Julia Hollister  
Everett Lohman III  
Yi Shen Ma  
Winetta Oloo  
Larry Ortiz  
Sujatha Rajaram  
Ryan Sinclair

**Nominating Committee**

Ronald Carter, Chair  
Nadim Baba  
Kristopher Boyle  
Ellen D'Errico  
Sujatha Rajaram  
Ken Wright

**Academic Variances Committee**

Ronald Carter, Chair  
Colleen Brenner  
Erik Carter  
Mark Johnson  
Larry Ortiz  
Janelle Pyke

**Admissions Review Committee**

Ronald Carter, Chair  
Noha Daher  
Lida Gharibvand  
Gina Siapco  
Salvador Soriano  
Dolores Wright



# 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 Western Association of Schools and Colleges (WASC) Senior College and University Commission (WSCUC; prior to January 1962, Western College Association) February 24, 1960. Became Loma Linda University July 1, 1961. Professional curricula attained accreditation as follow below.

## The professions

### Faculty of Graduate Studies

The Graduate School began in 1954 with accreditation through University accreditation. It continued through 2004 and was restructured as the Faculty of Graduate Studies in 2005. The Faculty of Graduate Studies convenes graduate faculty from research-intensive programs and functions as a peer-review body to ensure the quality of academic programs.

### School of Allied Health Professions

**CARDIAC ELECTROPHYSIOLOGY TECHNOLOGY:** Started in 2011. Initial accreditation March 21, 2015, by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

**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 (CDPH), Laboratory Field Services (LFS) as of 2015.

**COMMUNICATION SCIENCES AND DISORDERS:** Approved by the American Speech-Language-Hearing Association June 1, 1991. Master of Science degree in communication sciences and disorders approved by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA) as of March 2012.

**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.

**HEALTH INFORMATION ADMINISTRATION:** Started as medical records 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 as of 2015.

**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 as of 2016.

**NUTRITION AND DIETETICS:** Started in 1922 as a certificate program; baccalaureate degree conferred 1932–54; M.S. degree in nutrition and dietetics started 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 (CADE) of the American Dietetic Association. The coordinated program in dietetics is currently granted continuing accreditation by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (formerly CADE 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.

**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 accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). Most recent site visit 2011.

**PHYSICAL THERAPY:** Started in 1941. Initially approved by the Council on Medical Education of the American Medical Association June 6, 1942. Currently accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). Most recent site visit 2012.

**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 December 2011 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]) as of 2010.

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). Accreditation renewal in 2025.

**MARITAL AND FAMILY THERAPY (D.M.F.T.):** Accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE). Accreditation renewal in 2025.

**MARITAL AND FAMILY THERAPY (Ph.D.):** Accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE). Next accreditation renewal in 2025.

**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). Next Commission visit during 2023-24 academic year.

#### **Department of Psychology**

CLINICAL PSYCHOLOGY (Ph.D.): Accredited by the Commission on Accreditation of the American Psychological Association. Next accreditation renewal in 2029.

CLINICAL PSYCHOLOGY (Psy.D.): Accredited by the Commission on Accreditation of the American Psychological Association. Next accreditation renewal in 2029.

#### **Department of Social Work and Social Ecology**

MASTER OF SOCIAL WORK (M.S.W.): Accredited by the Council on Social Work Education to provide master's degree-level education, with the next affirmation to be completed in 2025.

### **School of Dentistry**

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 started in 2011. Approved by the Commission on Dental Accreditation of the American Dental Association since May 2011.

DOCTOR OF DENTAL SURGERY: Started in 1953. Approved by the Commission on Dental Accreditation of the American Dental Association since May 23, 1957.

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**

The School of Medicine was started in 1909 and has been approved by the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association since November 16, 1922. Accreditation for the medical education program leading to the M.D. degree is by The Liaison Committee on Medical Education (LCME (<http://lcme.org/>)). The LCME is jointly sponsored by the Association of American Medical Colleges (AAMC (<https://www.aamc.org/>)) and the American Medical Association (AMA (<http://www.ama-assn.org/ama/>)). LCME is recognized by the U.S. Department of Education (<http://www.ed.gov/>) and World Federation of Medical Education as the reliable authority for the accreditation of medical education programs leading to the M.D. degree. LCME accreditation is a voluntary, peer-reviewed process of quality assurance that determines whether the medical education program meets established standards. This process also fosters institutional and programmatic improvement.

Programs offered through the School of Medicine in conjunction with the Faculty of Graduate Studies are accredited through University accreditation.

### **School of Nursing**

The hospital-based School of Nursing program began in Loma Linda in 1905 and added the White Memorial Hospital in Los Angeles as an affiliate in 1924. The college-based program was accredited by the National Nursing Accrediting Service December 10, 1951, with approval continuing under the National League for Nursing until 2001. The school has been accredited by the Commission on Collegiate Nursing Education (CCNE) since 1999. Initial approval by the California State Board of Health in 1917 was extended until the college program was approved July 1, 1952, by the California Board of Registered Nursing. The master's degree program started in 1957, the Ph.D. degree program in 2002, and the Doctor of Nursing Practice (D.N.P.) degree program in 2010.

### **School of Pharmacy**

Started in 2002, the Doctor of Pharmacy degree program was first approved by the Accreditation Council for Pharmacy Education (ACPE) on June 23, 2007, and is accredited until 2029.

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; website: <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), and School of Religion (2007 to present). Programs accredited through University accreditation.

## Accrediting and Approving Agencies

### The University

Loma Linda University is accredited by the Western Association of Schools and Colleges (WASC) Senior College and University Commission (WSCUC).

1001 Marina Village Parkway, Suite 402

Alameda, CA 94501

Phone: 510/748-9001

Fax: 510/748-9797

Website: <https://www.wscuc.org/>

Email: <https://www.wscuc.org/contact> (<https://www.wscuc.org/contact/>)

WSCUC 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 WSCUC, 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)

264 Precision Blvd.

Telford, TN 37690

Telephone: 817/283-2835

Fax to plain paper: 817/354-8519

Fax to email: 817/354-1063

Website: <http://www.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

Website: <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

Website: <http://www.naacls.org>

Email: [info@naacls.org](mailto:info@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

### 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

Website: <http://www.asha.org>

Email: [accreditation@asha.org](mailto:accreditation@asha.org)

### Health Informatics, Information Management, and Administration

#### Health Information Administration

Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)

200 East Randolph Street, Suite 5100

Chicago, IL 60601

Telephone: 312/235-3255

Website: <http://www.cahiim.org>

Email: [info@cahiim.org](mailto:info@cahiim.org)

Commission on Accreditation of Allied Health Education Programs (CAAHEP)

25400 U.S. Highway 19 North, Suite 158

Clearwater, FL 33763

Telephone: 727/210-2350

Fax: 727/210-2354

Website: <http://www.caahep.org>

Email: [caahep@caahep.org](mailto:caahep@caahep.org)

### Nutrition and Dietetics

#### Nutrition and Dietetics Program—B.S.

#### Nutrition and Dietetics Program—M.S.

Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics

120 South Riverside Plaza, Suite 2190

Chicago, IL 60606-6995

Telephone: 800/877-1600, ext. 5400

Fax: 312/899-4817

Website: <https://www.eatrightpro.org/acend> (<https://www.eatrightpro.org/acend/>)

Email: [ACEND@eatright.org](mailto:ACEND@eatright.org)

### Occupational Therapy

The Accreditation Council for Occupational Therapy Education (ACOTE)

ACOTE c/o Accreditation Department

American Occupational Therapy Association (AOTA)

6116 Executive Boulevard, Suite 200

North Bethesda, MD 20852-4929

Telephone: 301/652-2682 or toll free 800/377-8555

Fax: 301/652-7711

Website: <https://acoteonline.org/>

Email: [accred@aota.org](mailto: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  
Website: <http://www.ncope.org/>  
Email: [info@ncope.org](mailto:info@ncope.org)

### Physical Therapy

Commission on Accreditation in Physical Therapy Education (CAPTE)  
3030 Potomac Avenue  
Alexandria, VA 22305-3085  
Telephone: 800/999-2782  
Fax: 703/838-8910  
Website: [www.capteonline.org](http://www.capteonline.org) (<http://www.capteonline.org/home.aspx>)  
Email: [accreditation@apta.org](mailto:accreditation@apta.org)

### Physician Assistant Sciences

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA)  
3325 Paddocks Parkway, Suite 345  
Shawnee, GA 30024  
Telephone: 770/476-1224  
Fax: 470/253-8271  
Website: <http://www.arc-pa.org>  
Email: [accreditationservices@arc-pa.org](mailto:accreditationservices@arc-pa.org)

### Radiation Technology

#### Cardiac Electrophysiology Technology

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
25400 U.S. Highway 19 North, Suite 158  
Clearwater, FL 33763  
Telephone: 727/210-2350  
Fax: 727/210-2354  
Website: <http://www.caahep.org/>  
Email: [mail@caahep.org](mailto:mail@caahep.org)

#### Medical Radiography—A.S.

#### Radiation Therapy Technology—B.S.

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  
Website: <http://www.jrcert.org>

#### Diagnostic Medical Sonography—B.S.

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
25400 U.S. Highway 19 North, Suite 158  
Clearwater, FL 33763  
Telephone: 727/210-2350  
FAX: 727/210-2354  
Website: <http://www.caahep.org>  
Email: [mail@caahep.org](mailto:mail@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  
Website: <http://www.jrcdms.org>  
Email: [sharonworthing@coarc.com](mailto:sharonworthing@coarc.com)

### Nuclear Medicine Technology—B.S.

Joint Review Committee on Nuclear Medicine Technology (JRCNMT)  
840 West Danforth Road, B1  
Edmond, OK 73003  
Telephone: 405/285-0546  
Website: [www.jrcnmt.org](http://www.jrcnmt.org) (<https://www.jrcnmt.org/>)  
Email: <https://www.jrcnmt.org/contact/>

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  
Website: <http://www.cdph.ca.gov/programs/Pages/RadiologicHealthBranch.aspx>  
Email: [RKubiak@dhs.ca.gov](mailto: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)  
112 South Alfred Street  
Alexandria, VA 22314-3061  
Telephone: 703/838-9808  
Fax: 703/838-9805  
Website: <http://www.aamft.org>  
Email: [coamfte@aamft.org](mailto: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: 202/336-5979  
Fax: 202/336-5978  
Website: <https://www.accreditation.apa.org/>  
Email: [education@apa.org](mailto: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  
Website: <http://www.cswe.org>  
Email: [info@cswe.org](mailto:info@cswe.org)

## School of Dentistry

Commission on Dental Accreditation (CODA)  
of the American Dental Association (ADA)  
211 East Chicago Avenue  
Chicago, IL 60611-2678  
Telephone: 312/440-250  
Fax: 312/440-2915  
Website: <http://www.ada.org>  
Email: [accreditation@ada.org](mailto:accreditation@ada.org)

## School of Medicine

### Medicine—M.D.

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)  
655 K Street NW, Suite 100  
Washington, DC 20001-2399  
Telephone: 202/828-0596  
Websites: <http://www.lcme.org>; <http://www.aamc.org>  
Email: [lcme@aamc.org](mailto:lcme@aamc.org)

### Pathologists' Assistant—M.H.S.

National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)  
5600 North River Road, Suite 720  
Rosemont, IL 60018-5119  
Telephone: 847/939-3597  
773/714-8880  
Website: <http://www.naacls.org> (<https://www.naacls.org/>)

## School of Nursing

Commission on Collegiate Nursing Education (CCNE)  
of the American Association of Colleges of Nursing (AACN)  
655 K Street, NW, Suite 750  
Washington, DC 20001  
Telephone: 202/463-6930  
Fax: 202/785-8320  
Website: <https://www.aacnnursing.org/CCNE> (<https://www.aacnnursing.org/CCNE/>)

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  
Website: <http://www.aana.com>  
Email: [info@aana.com](mailto:info@aana.com)

California Board of Registered Nursing (BRN)  
1747 North Market Boulevard, Suite 150  
Sacramento, CA 95834  
Telephone: 916/322-3350; 855/526-2262 (toll-free)  
Website: <http://rn.ca.gov>  
Email: [NEC.BRN@dca.ca.gov](mailto:NEC.BRN@dca.ca.gov) ([nec.brn@dca.ca.gov](mailto:nec.brn@dca.ca.gov))

## School of Pharmacy

Accreditation Council for Pharmacy Education (ACPE)  
190 South LaSalle Street, Suite 2850

Chicago, IL 60603-3499  
Telephone: 312/664-3575  
Fax: 866/228-2631  
Website: <https://www.acpe-accredit.org/>  
Email: [csinfo@acpe-accredit.org](mailto:csinfo@acpe-accredit.org)

## School of Public Health

Council on Education for Public Health (CEPH)  
1010 Wayne Avenue, Suite 220  
Silver Spring, MD 20910  
Telephone: 202/789-1050  
Fax: 202/789-1895  
Website: <http://www.ceph.org>  
Email: [jconklin@ceph.org](mailto: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  
Website: <http://www.eatright.org/cade> (<http://www.eatright.org/cade/>)  
Email: [education@eatright.org](mailto: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.

Primary purposes of the association are to promote the interests of the school, to secure unity among alumni, to foster alumni attachment to the 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 and staff members, students, donors, and alumni via the biannual *LLUSD Articulator* and continuous electronic media—such as, digital signage, social media, the Internet, and email 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 an Alumni Association in 1915 when only two classes totaling 18 members had graduated. The organization has functioned continuously since that time. Membership is extended to alumni who have graduated with the Doctor of Medicine degree from Loma Linda University as well as to graduates of the American Medical Missionary College, operated by the Seventh-day Adventist Church in Battle Creek, Michigan, from 1895 to 1910. Associate membership is extended to students of the School of Medicine, and affiliate membership is extended to faculty members 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 provides opportunities for fellowship, scientific exchange, and continuing education among alumni and affiliates. The organization exists to serve the alumni, future alumni (the students), alumni missionaries, and the School of Medicine of Loma Linda University, while promoting excellence in worldwide health care.

CONNECT—For almost 100 years, the Alumni Association has been providing opportunities for members to connect with one another. Events such as the Annual Postgraduate Convention (APC), class reunions, and alumni trips help alumni strengthen bonds with each other. The organization is always looking to improve and will continue to find meaningful ways to connect alumni.

CREATE—The Alumni Association aims to create a community where people work together for the greater good of humanity. Creativity thrives when alumni of similar goals, beliefs, and values combine their talents. Recently, this included creating several funds to support alumni missionaries' needs, the Emergency Student Fund for medical students facing unforeseen expenses, and the Paying It Forward scholarship—where alumni partner with the Alumni Association and the School of Medicine to provide 50 percent tuition scholarships for junior and senior students.

CARE—The Alumni Association is proud of the kind and caring hearts of Loma Linda University medical alumni. Their generosity extends beyond the hospital and clinic, and the organization wishes to thank each of its alumni for all they do to make the world a better place. The Alumni Association invites alumni to consider partnering with them to care for fellow alumni, students, and missionaries in both big and small ways so that their kindness may inspire others.

### School of Nursing

The Loma Linda University School of Nursing Alumni Association (LLUSNAA) works through the School of Nursing. A board of officers and directors carries out the goals and ongoing activities of the association. New members are welcomed into the association at graduation. 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 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 (<http://llu.edu>)

## Phone

Switchboard: 909/558-1000  
Area code: 909

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-4540	44540	President	558-0242	80242
558-8348	88348	Campus Chaplain/Campus Ministries	558-0347	80347
558-4787	44787	Diversity	558-0140	80140
558-4955	44955	International Student Services	558-4879	44879
558-9200	39200	LLU Behavioral Medicine Center	558-9243	39243
558-4510	44510	Student Affairs; student welfare, housing, visas	558-7949	87949
558-6050	66050	Student Assistance Program Spiritual Counseling	558-6051	66051
558-6028	66028	Student Counseling	558-6090	66090
558-4520	44520	Student Finance	558-7904	87904
558-4509	44509	Student Financial Aid	558-4283	44283
558-8770	88770	Student Health Service	558-0433	80433
558-4508	44508	University Records	558-0340	80340
809-1049	44270	Campus Hill Church	796-1992	
558-4570	44570	University Church	558-4186	44186

## The schools

### Faculty of Graduate Studies

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-1000, x42021	42021	Magan Hall 108	No fax	

### Allied Health Professions

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-4599	44599	Admissions	558-4291	44291
558-4545	44545	Dean's Office	558-7990	87990
558-4545	44545	Allied Health Studies	558-7990	87990
558-4932	44932	Cardiopulmonary Sciences	558-4701	44701
558-4966	44966	Clinical Laboratory Science	558-0458	80458
558-4998	44998	Communication Sciences and Disorders	558-4305	44305
558-4976	44976	Health Informatics, Information Management, and Administration	558-0404	80404
558-4593	44593	Nutrition and Dietetics	558-0837	80837
558-4628	44628	Occupational Therapy	558-0239	80239
651-5797	15797	Orthotics and Prosthetics	558-0459	80459
558-4632	44632	Physical Therapy	558-0459	80459
558-4634	44634	Physical Therapist Assistant	558-0466	80466
558-7295	87295	Physician Assistant Sciences	558-0495	80495
558-4931	44931	Radiation Technology	558-7965	87965

## Behavioral Health

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-8722	88722	Admissions		
558-1900	81900	Records		
558-4528	44528	Dean		

## Dentistry

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-4222	44222	New Patient Screening	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	Dental 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
558-4600	44600	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
558-4923	44923	Admissions	558-0175	80175
558-4517	44517	Dean	558-0225	80225
558-1000	41017	Finance	558-0643	80643
558-8061	88061	Graduate	558-0719	80719
558-1000	88060	Undergraduate	558-4134	84134

## 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
558-4598	44598	Academic Affairs	558-0471	80471
558-4741	44741	Academic Programs Office	558-0471	80471
558-1000 ext 82881	82881	Academic Records	558-4087	44087 attn. Records
558-8776	88776	Admissions	558-4087	44087 attn. Admissions
558-4578	44578	Dean	558-4087	44087 attn. Dean
558-7271	87271	Executive Associate Dean	558-0867	80867
558-8322	88322	Career Center		
558-4573	44573	Center for Health Strategy and Innovation	558-0469	80469
558-8750	88750	Center for Nutrition, Healthy Lifestyle, and Disease Prevention	558-0493	40493
558-4598	44598	Center for Teaching and Learning	558-0471	80471

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
558-4988	44988	Practicum Office	651-5421	15421
558-4918	44918	Preventive Medicine Residency, Occupational Medicine, and Addiction Medicine	558-0451	80451

## Religion

Phone: Off-campus	Phone: On-campus	Office	Fax: Off-campus	Fax: On-campus
558-8434	88434	Dean	558-4856	44856
558-7478	87478	Admissions and Records	558-4856	44586
558-7478	87478	Bioethics M.A. Program	558-4856	44586
558-4956	44956	Center for Christian Bioethics	558-0336	80336
558-7786	87786	Center for Whole Person Care	558-7988	87988
558-7478	87478	Chaplaincy M.S. Chap. Program	558-4856	44856
558-7478	87478	Religion and Society M.A. Program	558-4856	44856

	Website	Email
<b>Admissions</b>	<a href="https://home.llu.edu/education/how-apply">https://home.llu.edu/education/how-apply</a> ( <a href="https://home.llu.edu/education/how-apply/">https://home.llu.edu/education/how-apply/</a> )	<a href="mailto:admissions.gs@llu.edu">admissions.gs@llu.edu</a>
<b>International Student and Scholar Services</b>	<a href="http://go.lluh.org/intlstudent">http://go.lluh.org/intlstudent</a> ( <a href="http://go.lluh.org/intlstudent/">http://go.lluh.org/intlstudent/</a> )	
<b>Student Services</b>	<a href="http://go.lluh.org/studenterv">http://go.lluh.org/studenterv</a> ( <a href="http://go.lluh.org/studenterv/">http://go.lluh.org/studenterv/</a> )	
<b>University Records</b>		<a href="mailto:registrar@llu.edu">registrar@llu.edu</a>

## The schools

	Website	Email
<b>Allied Health Professions</b>	<a href="http://llu.edu/allied-health">http://llu.edu/allied-health</a> ( <a href="http://llu.edu/allied-health/">http://llu.edu/allied-health/</a> )	
Admissions		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. Admissions
Cardiopulmonary Sciences		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. CPSC
Clinical Laboratory Sciences		<a href="mailto:clin.sahp@llu.edu">clin.sahp@llu.edu</a> attn. CLSC
Communication Sciences and Disorders		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. SPPA
Health Information Management		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. HLIN
Nutrition and Dietetics		<a href="mailto:nutrition@llu.edu">nutrition@llu.edu</a> attn. DTCS
Occupational Therapy		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. OCTH
Physical Therapy		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> u attn. PPTH
Physical Therapy Assistant		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. PTA
Physician Assistant Sciences		<a href="mailto:sahp admissions@llu.edu">sahp admissions@llu.edu</a> attn. PAST
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