

# **College of Arts and Sciences**

# COLLEGE OF ARTS AND SCIENCES

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## PRE-PROFESSIONAL PROGRAMS

Although essentially a liberal arts college, the College of Arts and Sciences offers certain pre-professional curricula for students who plan to enter professional schools. For medical and paramedical curricula, Andrews University maintains a special relationship with Loma Linda University.

### CHIROPRACTIC

Robert A. Wilkins, Coordinator  
(616) 471-6288  
Halenz Hall (Science Complex)

Entrance requirements for colleges of chiropractic vary; therefore, students are advised to consult an admissions adviser at the chiropractic school and familiarize themselves with the requirements of the school of their choice. Students choosing a chiropractic career should complete at least 90 quarter credits with a minimum GPA of 2.50 (no grade below C is transferable). The courses listed below satisfy the requirements for Palmer College of Chiropractic. For a list of these schools, see the chiropractic coordinator.

### Pre-chiropractic Curriculum

#### First Year

Biology (111, 112; 113 recommended)—10  
General Chemistry—12  
Communication Skills—3  
English Composition—6  
Introduction to Psychology—5

#### Second Year

Organic Chemistry—12  
General Physics—12  
Social Sciences/Humanities—23  
(excluding Geography)

### CYTOTECHNOLOGY

Marcia Kilsby, Coordinator  
(616) 471-6294  
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Cytotechnology is a specialty within a broad field of clinical laboratory science. Cytotechnologists aid in the early detection of disease by differentiating normal, atypical, and malignant cells. In recognizing microscopic abnormalities of cells and cellular patterns from the various body sites, the cytotechnologist assists the pathologist in detecting cancer at its earliest and potentially most curable stage. Medical applications of cytologic techniques are constantly expanding, particularly

in the diagnosis and management of the cancer patient.

Students pursuing a career in cytotechnology should complete the first two or three years (according to their selection of school for technical education) and then complete the professional courses offered at Loma Linda University or another school accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Grades of C- or below cannot be transferred for credit.

### DENTAL ASSISTANT AND DENTAL HYGIENE

James Hayward, Coordinator  
(616) 471-3241  
Price Hall (Science Complex)

Students interested in a dental assistant career should obtain information concerning the program from the school to which they wish to apply.

Students planning a career in dental hygiene should complete two years of college work before entering a professional school.

Upon completion of an additional two years of prescribed college work, Loma Linda University grants the Bachelor of Science degree in dental hygiene.

The following courses are recommended for the first two years before entering Loma Linda University. Students interested in applying to other professional schools should obtain specific entrance requirements for those schools.

### Pre-dental Hygiene Curriculum

Cultural and Spiritual Heritage—24

*Cultural*—16

History/civilization, literature, fine arts, foreign language, performing arts—2-credit limit; philosophy

*Spiritual*—8

Required only of students applying from Adventist or other religious colleges/universities.

Scientific Inquiry and Analysis—32

Physical/Natural Sciences—20

\*Chemistry—one academic year covering inorganic, organic, and biochemistry; \*human anatomy and human physiology—two separate or sequential courses; \*microbiology)

Social Science—12

\*Introduction to sociology with remaining credits in anthropology, economics, geography, political science, psychology

Communication—13

\*Freshman English, one complete sequence for BS degree; \*speech—interpersonal, introduction to, or persuasion)

Health and Wellness—5

*Health* (personal health or nutrition)—3

*Physical education* (2 activity courses)—2

\*required courses

### DENTISTRY

James Hayward, Coordinator  
(616) 471-3241  
Price Hall (Science Complex)

Preference is given to applicants who have a broad academic background with a baccalaureate degree. The minimum entrance requirement is 144 quarter credits with a 2.70 GPA (C= 2.00) in both science and non-science courses. The Dental Aptitude Test (DAT) must be taken not later than October of the year preceding admission. Minimum entrance requirements for most dental schools follow.

### Pre-dentistry Suggested Curriculum

#### First Year

English Composition—6  
General Chemistry—12  
Foundations of Biology—15  
Physical Education—3  
Topics in Dental Aptitude—1

#### Second Year

Freshman Physics—12  
Organic Chemistry—12  
Electives—11-12  
Electives (to bring total credits to 96)

*Recommended:* anatomy, basic human nutrition, biochemistry, histology, computer science, systems physiology, management and organization, fundamentals of accounting, a survey of calculus, machine shop, two courses in psychology, and religion.

**Total pre-dental credits—96**

### HEALTH INFORMATION ADMINISTRATION

#### Medical Records Administration

Marcia A. Kilsby, Coordinator  
(616) 471-6294  
Halenz Hall (Science Complex)

Health information administration includes the development of information systems to provide optimal user access to medical records and other vital patient data. The health information specialist also manages or consults in maintenance of quality and legal standards for data used in administrative planning, research, patient care evaluation, and financial reimbursement.

C- or lower grades may not be transferred for credit.

For certificate program, applicants must have baccalaureate degrees and complete the following requirements: accounting, typing, computer science, college algebra, anatomy and physiology sequence, general psychology, and medical terminology.

### LAW

John W. Young, Coordinator  
(616) 471-3293  
Nethery Hall

In general, law schools prescribe no special college program. Therefore, pre-law students may select from a variety of majors and minors without adversely affecting admission to law school. It is important to maintain a high level of academic achievement. The prospective lawyer's education should be as broad as possible, including the development of writing and reading skills, logical thinking, and understanding of legal, social, and economic institutions.

Pre-law students might consider the concentration in political economy as preparation for a legal career.

The booklet *Law Schools and Bar Admission Requirements* provides detailed information concerning a desirable academic background for the study of law. Copies are available upon request from the section of Legal Education and Admissions to the Bar, American Bar Association, 1115 East 60th Street, Chicago, Illinois 60600. Because competition for admission to a reputable law school is intense, students should structure their college course work to prepare for alternate careers.

Students applying to law schools should consult the pre-law adviser at least once a year, preferably at fall registration. An active Law Club

functions on campus.

## MEDICINE

Bill Chobotar: (616) 471-3262

Marcia A. Kilsby: (616) 471-6294

Robert A. Wilkins: (616) 471-6288

Science Complex

Although allopathic (MD) and osteopathic (DO) medicine represent different philosophies of patient care, a physician in either branch of medicine is required to pass the same national board examination to practice.

Students seeking admission to medical schools are encouraged to plan a baccalaureate degree that includes courses which meet the stated entrance requirements of the medical school of their choice as listed in Medical School Admission Requirements (available at the Counseling and Testing Center). The pre-medical student may choose any major or minor and is encouraged to become acquainted with the main bodies of knowledge as represented by the various academic disciplines.

### Required Courses for Applicants to Loma Linda University School of Medicine

English Composition/Writing Seminar—9

Foundations of Biology—15

General Chemistry—12

General Physics—12

Organic Chemistry—12

Religion—12

Students should maintain an A/B average in science as well as overall.

## OCCUPATIONAL THERAPY

Bill Chobotar, Coordinator

(616) 471-3262

Price Hall (Science Complex)

The occupational therapist helps people cope with psychological or physiological dysfunction.

## PRE-OCCUPATIONAL THERAPY CURRICULUM

### LLU Requirements and AU Equivalents

Religion

*LLU*: 4 credits/yr. (only for students from Adventist colleges/universities)

*AU*: A general education religion course (4-8 credits: 4 credits each year)

Cultural Heritage

*LLU*: 12 credits from Cultural Diversity and areas of art/music (2-credit limit in performing arts), literature, philosophy, history of civilization—American, and any foreign language  
*AU*: ANTH 124 or 200; select remainder from ARTH220; MUHL214; ENGL225, 275, 276; GCAS224; HIST115, 116, 204, 205; any foreign language

Physical/Natural Sciences

*LLU*: anatomy and physiology sequence, 1 quarter chemistry, 1 quarter physics/lab; math—2 years HS with at least a grade of C  
*AU*: BIOL111-113; CHEM111; PHYS105; MATH106 (no credit)

Social Sciences

*LLU*: anthropology, sociology, general psychology; Growth and Development; and select one other behavioral science  
*AU*: ANTH124, 200; SOCI119; PSYC101; EDPC301; and select from other ANTH, PSYC, or SOCI courses

Communication

*LLU*: Freshman English—complete sequence;

Speech; Computer; select additional from computer science and persuasion

*AU*: ENGL111, 112, and 306; COMM104; INSY110; select additional from COMM320, 405; INSY315

Health and Wellness

*LLU*: Health Education: 4-5 credits (personal health or nutrition)

*AU*: HLED130 and 2 activity credits

Electives—to meet total of 96 credits

Required Work Experience—80 hours (minimum) of work/observation experience of volunteer or paid employment in an occupational therapy department.

Grades of C- or below will not be transferred.

## OPTOMETRY

James L. Hayward, Coordinator

(616) 471-3241

Price Hall (Science Complex)

As a general rule, a minimum of two years of college work is required by optometry school.

However, most students entering optometry schools have completed three or four years of college. A list of approved schools may be obtained by writing the American Optometry Association, 243 North Lindbergh Blvd., St. Louis, Missouri 63141. Detailed entrance requirements are available from each school on the list. The following courses with minor variations meet the entrance requirements of most optometry schools:

### Pre-optometry Suggested Curriculum

English Composition, Writing Seminars, and Research Presentations—10

Foundations of Biology—15

General Chemistry—12

General Physics—12

Introduction to Psychology—4

Mathematics—9

Microbiology or Bacteriology—5

Organic Chemistry—9-12

Physical Education—2

Religion—6

Social Sciences—12

Statistics—4

Electives—18

## PHARMACY

Robert A. Wilkins, Coordinator

(616) 471-6288

Price Hall (Science Complex)

Entrance requirements to colleges of pharmacy vary; therefore, it is imperative that students familiarize themselves with the requirements of the school of their choice. (Ferris State University [FSU], Wayne State University, and University of Michigan operate accredited colleges of pharmacy in the state of Michigan.) A list of accredited colleges of pharmacy may be secured by writing to the American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington, D.C. 20007 or from the coordinator. Pharmacy programs in the U.S. will become Doctor of Pharmacy (PharmD) programs by the year 2000 requiring 2 years of pre-pharmacy and 4 years of professional pharmacy education.

FSU requires the PCAT for admission. The following prepharmacy courses are those required by FSU. FSU offers a calculus course in the summer that satisfies the prepharmacy requirements. Science courses with a grade of D are not transferable.

## Pre-pharmacy Curriculum

### First Year

General Chemistry—12

English Composition—6

Foundations of Biology—15

Communication (COMM104 or 320)—3

Intro. to Psych. or Principles of Sociology—4

### Second Year

Elementary Statistics (STAT251 or 285) Writing Seminar—3

General Microbiology—5

Organic Chemistry—12

Calculus (MATH171)—4

Macroeconomics—4

Cultural Enrichment (one at 200 level)—14

## PHYSICIAN ASSISTANT

Bill Chobotar: (616) 471-3262

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Price Hall (Science Complex)

Physician assistants (PAs), members of a health-care team, practice medicine with supervision of licensed physicians. PAs perform a wide range of medical duties from basic primary care to high-technology specialty procedures. Professional PA education offered at any one of more than 107 accredited schools is an intensive 2-3 year program. Most PA programs are moving toward requiring a bachelors degree including courses in biology, chemistry, English, humanities/social science, mathematics, and psychology. The level of the science courses varies from program to program; consequently, each school should be consulted about its prerequisite requirements. Acceptance to a professional program typically requires an extensive health-care experience such as nursing, medical/X-ray lab technician, respiratory therapist, paramedic, hospital aide, and emergency medical technician.

The Association of Physician Assistant Programs (APAP) serves as a national information center for PA education. The National Directory of PA Programs may be ordered from APAP at 950 N. Washington St., Alexandria, VA 22314 or phone: (703) 548-5538.

## PUBLIC HISTORY

Gary G. Land, Coordinator

(616) 471-3511

Nethery Hall

Public or applied history refers to careers in history-related fields other than teaching, including museum management, archival management, and historic preservation, as well as the production of historical media programs. In most cases, a Master's degree in a public or applied history program or certification upon completion of certain graduate courses are needed prior to employment. The Department of History and Political Science recommends as curricula a major in history with a second major or minor and electives as the most advantageous undergraduate basis for a public-history career. Curriculum recommendations are available from the department chair.

## RESPIRATORY THERAPY

C. William Habenicht, Coordinator

(616) 471-6551

Physical Therapy Building

Andrews University offers prerequisite course work to prepare students who wish to enter a 2-year Associate of Science degree program or a 4-year Bachelor of Science degree program in respi-

ratory therapy. Entrance requirements vary among professional respiratory therapy programs. Not all professional programs accept transfer credits. Therefore, interested students should contact the programs of choice for the most current prerequisite requirements. A list of accredited respiratory therapy programs may be obtained from the American Association for Respiratory Care, 11030 Ables Lane, Dallas, TX 75229 (phone 972-243-2272 and ask for Education).

Students who have completed the following prerequisites may apply to Loma Linda University as a second-year student.

### Pre-respiratory Therapy Curriculum for Loma Linda University

#### Communications—9

INSY110

English—ENGL111, 112

#### Physical/Natural Sciences/Math—30+

BIOL111, 112

BIOL260

CHEM111, 112

Secondary-level physics or PHYS106

Secondary-level Algebra I & II and/or Geometry with grades of "C" (2.00) or better; College math if necessary (grades not included in 48 minimum credit)

#### Social Sciences

Psychology or Sociology

PSYC101 or SOCI119

#### Religion—4

RELG100

#### Health and Wellness

HLED115 and 2 PE required for BS

#### Electives—to meet 48-credit requirement

#### Total Credits Required

48

In addition to the course work, 4-6 clock hours of observation of a respiratory therapist participating in patient care in a hospital setting are required.

# ALLIED HEALTH

Halenz Hall, Room 326  
(616) 471-3336  
medtech@andrews.edu  
<http://www.andrews.edu/ALHE>

#### Faculty

Marcia A. Kilsby, *Chair*

Albert W. McMullen

Richard D. Show, *Graduate Program Director*

Clifford Sutherland

Academic Programs	Credits
BS in Clinical Laboratory Science	136-144
BS in Allied Health Administration	96
MSCLS (Clinical Laboratory Science)	48
Biomedical	
Business	
Computer Information Science	
Education	

The Department of Allied Health prepares students who are committed to preserving and protecting the dignity of life and death. They promote values and attitudes consistent with the Seventh-day Adventist Christian lifestyle. They strive to instill in students a life-long personal quest for individual growth and fulfillment and for continual excellence in health-care practice.

## Clinical Laboratory Science (Medical Technology)

The degree program includes 3 years of undergraduate (pre-clinical) studies plus one year (4 quarters) of clinical (professional) education.

**Pre-clinical Program.** The first 3 years of undergraduate study include General Education, cognate science, and pre-clinical degree requirements. Program options feature directed elective course work selected in consultation with the faculty adviser according to the student's career goals and interests.

**Clinical (Professional) Program.** The year of clinical studies is comprised of 2 quarters of lectures and student laboratories on the Berrien Springs campus and 2 quarters of clinical practicum at an affiliated hospital or clinical laboratory site.

**Clinical Experience (Practicums).** Students work side-by-side with practicing professionals in patient health care during the final 2 quarters of the clinical year.

Andrews University maintains a number of affiliated clinical institutions across the country. Student preferences for clinical site assignments are solicited and granted when possible. Final site assignments are made at the discretion of the faculty.

**Clinical Year Admission Requirements.** An independent admissions process is required for university students who wish to enter clinical studies. Application forms may be obtained from the Department of Allied Health office. Students should complete these applications and return them to

the departmental office by February 15th prior to their anticipated clinical-study year.

Admission requires an overall GPA of 2.50. In the admissions process, the GPAs for the cognate science courses and clinical laboratory science content courses are computed together. This combined GPA must be a minimum of 2.50. Should applications exceed class capacity, preference is given to students with the higher GPAs.

Applicants must be able to meet the program's published *Essential Functions*, copies of which are incorporated into the application packet, and express a willingness to comply with the principles, rules, regulations, and policies of both the university and the program as they relate to the ideals and values of the Seventh-day Adventist Church and the clinical-laboratory-science profession.

All prerequisite course work, including General Education, cognate science, and pre-clinical courses, must be completed prior to entry into the clinical year. A personal interview may be required at the discretion of the Admissions Committee.

In exceptional circumstances, the Admissions Committee may accept students outside the stated policy.

**Student Progression in Clinical Year.** The clinical year is highly structured and sequential. Enrolled students may not drop a class, audit a class, or earn a grade lower than C- in any class. Students may enter clinical practica only upon satisfactory completion of the first 2 quarters taught at Andrews. Satisfactory completion is defined as a senior-year minimum cumulative GPA of 2.50 and the recommendation of the faculty. A student receiving a cumulative GPA of less than 2.50 may be allowed to advance if the program faculty identifies exceptional circumstances and recommends that the student continue in the program.

Student continuance in the clinical practica is conditional upon acceptable ethical department and exemplary patient-care practices. The hospital supervisors and program faculty are final arbiters in determining student continuance.

**Professional Certification.** Students who complete the degree program are eligible to write national certification examinations sponsored by the American Society of Clinical Pathologists (ASCP) and the National Certification Agency of Medical Laboratory Personnel (NCA).

**Program Accreditation.** The Andrews University Program for Clinical Laboratory Sciences holds accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)—(773) 714-8880.

#### CALENDAR (CLINICAL YEAR)

July 30	Senior Summer Quarter (Clinicals) ends
Sept. 12	Senior Autumn Quarter begins (6 pm)
Nov. 12	Senior Autumn Quarter ends
Nov. 15	Senior Winter Quarter begins
Feb. 4	Senior Winter Quarter ends
Feb. 14	Senior Spring Quarter (Clinicals) begins
May 5	Senior Spring Quarter ends
May 8	Senior Summer Quarter (Clinicals) begin
July 28	Senior Summer Quarter ends