

Respiratory Care, 11030 Ables Lane, Dallas, TX 75229 (phone 972-243-2272 and ask for the Education Department) or explore the web at [http://www.aarc.org/patient\\_resources/schools.html](http://www.aarc.org/patient_resources/schools.html).

Loma Linda University: Interested students may complete the prerequisites for Loma Linda University's Respiratory Care Education Program while attending Andrews University. Check with the above listed coordinator for the required course work. The Pre-LLU/RC student may then apply and transfer to LLU through its selective admissions process as a second-year student in their program.

## ALLIED HEALTH

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

### Faculty

Marcia A. Kilsby, *Chair, CLS Program Director*  
Albert W. McMullen  
Richard D. Show, *Graduate Program Coordinator*  
Clifford Sutherland

Academic Programs	Credits
BS: Clinical Laboratory Science (BSCLS)	127
BS: Allied Health Administration	65
MS: Clinical Laboratory Science (MSCLS)	32
Biomedical	
Business and Management	
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 three years of undergraduate (pre-clinical) studies plus one year (3 semesters) of clinical (professional) education.

**Pre-clinical Program.** The first three 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 advisor according to the student's career goals and interests.

**Clinical (Professional) Program.** The year of clinical studies is comprised of lectures and student laboratories on the Berrien Springs campus and a 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 portion of the clinical year. Andrews University maintains a number of affiliations with 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 on-campus course work. 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 deportment 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 for Clinical Pathology (ASCP) and the National Credentialing Agency for 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), 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415, (773) 714-8880.

#### ACADEMIC CALENDAR 2002-2003

May 2	Senior Spring semester (Clinicals) ends
May 5	Senior Summer semester (Clinicals) begins
July 25	Senior Summer semester (Clinicals) ends
July 28	Registry Review Week begins
August 2	Clinical Laboratory Science Certificate Ceremony

# Undergraduate Programs

## BS: Clinical Laboratory Science (BSCLS)—127

### General Education requirements—37 (Adjustments for BSCLS)

Directed Electives—6

Arts & Humanities—3

Language/Communication

Social Science—3

Mathematics—3

AU students—Statistics preferred. Students transferring into clinical program—any college-level course

PE/Wellness—2

HLED130. Must also pass a physician-administered physical exam before advancement to clinical practicums

Physical/Natural Sciences: see cognate sciences below

Religion—12

(or one course per year of residence)

Service Fieldwork—fulfilled through 23 credits of clinical practicum.

### Cognate Science Requirements—29

BIOL165: BIOL166 or 111, and 3-4 credits of relevant BIOL, PHTH, or ZOOLOG courses; CHEM131, 132, 231, 232, 241, 242.

### Major Requirements—61

*Prerequisites*—11

CLSC101, 102, 230, 250, 260

*Major courses*—50

CLSC320, 400, 401, 402, 411, 412, 413, 421, 423, 431, 432, 433, 441, 442, 443, 451, 452, 453, 460, 463, 490, 495.

### Directed electives—6

Students select courses in consultation with and by the consent of their advisors in a planned program to enhance professional preparation. Courses are chosen from biology, business, chemistry, computer science, electronics, and education. Pre-medical/pre-dental students must include PHYS141 142 General Physics (8 credits).

## BS: Allied Health Administration—65

This degree is designed for health-care professionals seeking to enhance the knowledge they already have and to help them prepare for future career employment requirements. The degree format features a strong general education and administrative/business

# Graduate Programs

## **MS: Clinical Laboratory Science (MSCLS)—32**

The Department of Allied Health offers a graduate program leading to the Master of Science in Clinical Laboratory Science. In response to the diversity of career skills required by the clinical laboratory scientist (medical technologist), the degree features a variety of program emphases, including concentrations in biomedical sciences, business and management, and education.

**Admission requirements.** In addition to the minimum general requirements for admission to a graduate program listed in the graduate admission section of this bulletin, the following are departmental requirements:

- Applicants' previous course work must include 16 semester credits of biological sciences, 16 semester credits of chemistry, and one college-level course in mathematics. Deficiencies must be removed prior to admission to the graduate program.
- Applicants must hold professional certification and/or licensure in clinical laboratory science (medical technology) acceptable to the admissions committee. Certification may be either general or in one of the recognized areas of specialization. Acceptable certification is usually defined as that offered by the American Society for Clinical Pathology or The National

in quality control, and principles of clinical laboratory instrumentation. Topics include carbohydrates, lipids, electrolytes, and hepatic function with selected pathologies. Weekly: Three lectures and one lab.

**CLSC260** **\$ (3)**

***Fundamentals of Human Blood Biology***

Introduces the production, maturation, function of normal blood cells and hemostasis; blood group antigen systems, antibody identification and compatibility testing. Selected routine manual hematology, hemostasis, and immunohematology procedures are performed. Weekly: Three lectures and one lab.

**CLSC320** **(3)**

***Principles of Immunology***

Innate and acquired immune systems of the human organism; immunoglobulin production, structure, function, and diversity; antigen characteristics, variety, and specific red cell groups; tolerance and memory; complement structure and function; cell mediated immunity function and regulation; autoimmune disorders; transplantation and tumor immunology; immunodeficiency

apeutic drug monitoring. Analysis of various body fluids such as serous fluids, synovial fluid, amniotic fluid, and urine. Correlations with normal physiology and selected pathological conditions. Prerequisites: CLSC451 and permission of Program Director.

**CLSC453 (5)**

***Clinical Chemistry Practicum***

Professional health-care laboratory practicum. Emphasis on patient-care applications in clinical chemistry. Prerequisites: CLSC451, 452 and permission of Program Director.

**CLSC460 (2)**

***Clinical Laboratory Systems***

Survey of current Laboratory Information Systems (LIS) including database design and maintenance, test requesting, result entry, result reporting, quality control applications, and peripheral devices. Discussion in selected areas that include health-care organizational structures; problem solving in the clinical laboratory; development of personnel evaluation procedures; supply and equipment acquisition; budget preparation and analysis; ethics; and regulatory processes. Prerequisite: Permission of the Program Director.

**CLSC463 (1)**

***Clinical Microscopy Practicum***

Professional health-care laboratory practicum. Emphasis in patient-care applications of body fluids. Prerequisites: CLSC452 and permission of Program Director.

**CLSC490 (1-4)**

***Topics in \_\_\_\_\_***

An in-depth study of selected topics in the clinical laboratory sciences. Repeatable in different specialized areas. Prerequisite: Permission of Program Director.

**CLSC495 (1-4)**

***Independent Study/Readings/Research/Project***

Topics may be from areas relevant to clinical laboratory practice and must be approved by the Program Director. Repeatable in a different subject area. Independent readings earn S/U grades. Prerequisite: Permission of Program Director.

**CLSC496 (1)**

***Extended Clinical Practicum***

A twelve-week professional health-care laboratory practicum. Emphasis in patient-care applications. Subject areas are to be coordinated with the Clinical Site Education Coordinator and the Program Director. Graded S/U. Prerequisites: successful completion of the twenty-week clinical practica of the Clinical-Year Program and permission of Program Director.

**CLSC501, 502 (1)**

***Seminar in Clinical Laboratory Science***

Introduction to educational theory, teaching methods and assessment. Cooperative research into topics of current interest in the literature. Each semester the student prepares a written and oral presentation based on current readings. Faculty and guest lectures also contribute to the seminar series. Admission by permission of Graduate Program Coordinator.

**CLSC561 (3)**

***Laboratory Management Issues and Strategies***

The health-care environment is rapidly changing, and will continue to change for the foreseeable future. In the clinical laboratory, ever-changing government regulations and reimbursement policies require a laboratory manager to be flexible and adopt new skills.

Issues faced by the manager and styles and strategies used to deal with these issues are explored. Prerequisite: Permission of Graduate Program Coordinator.

**CLSC562 (3)**

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