

Medical Laboratory Science, BS

The Carver College of Medicine partners with various programs to offer the Bachelor of Science in medical laboratory science. The Kirkwood medical laboratory science program is currently seeking accreditation by the National Accrediting Agency for Clinical Laboratory Sciences. The Mercy program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

Undergraduate study in medical laboratory science is guided by the academic rules and procedures outlined in the Carver College of Medicine section of the catalog.

The Carver College of Medicine partners with affiliated institutions that provide the medical laboratory science professional training programs; students in this major are not held to the University of Iowa in-residence requirement.

Expenses

Students are responsible for all tuition, textbooks, and other associated expenses during their time in one of the affiliated programs. Tuition is assessed by the affiliated learning institution or program.

Subprogram Requirements

The Bachelor of Science with a major in medical laboratory science and a defined subprogram (Kirkwood Community College or Mercy College of Health Sciences) requires a minimum of 124 s.h., including preparatory study at the University of Iowa and the professional (clinical) program. Acceptance into the affiliated programs is competitive; see specific program websites for admission requirements.

Students who plan to pursue a BS degree in medical laboratory science at the University of Iowa enter the university as students in the College of Liberal Arts and Sciences, where they complete the preparatory coursework that is prerequisite to entering the major. Students then begin the professional program, which consists of both didactic lectures and clinical rotations. Students who successfully complete the professional requirements through one of the affiliated medical laboratory science programs graduate with a BS in medical laboratory science awarded by the University of Iowa.

To learn more about the professional programs, visit the medical laboratory science pages on the Mercy College of Health Sciences website or the medical laboratory technology page on the Kirkwood Community College website.

General Education Requirement

All students pursuing the BS in medical laboratory science complete at least 3 s.h. in each of these areas:

- Understanding Cultural Perspectives
- Historical Perspectives
- International and Global Issues (may be taken concurrently while at Kirkwood if attending UI first)
- Literary, Visual, and Performing Arts
- Rhetoric (minimum 4 s.h.)
- Natural Sciences, with lab component (minimum 4 s.h.)
- Natural Sciences, with or without lab component

- Quantitative or Formal Reasoning
- Social Sciences

See GE CLAS Core (College of Liberal Arts and Sciences) in the catalog for approved courses in the areas listed. GPA and individual course grade minimums may apply based on the clinical program students complete; see the following sections for more information.

Kirkwood Community College

Students in the Kirkwood program must maintain a cumulative grade-point average (GPA) of at least 2.00 in all courses for the major and in all University of Iowa courses. They must earn a grade of C (not C-minus) or higher in every course.

Students complete the prerequisite coursework in the first two years at the University of Iowa. Alternatively, students may choose to attend the Kirkwood program first and continue their studies at the University of Iowa. Some general education courses may be taken concurrently at the University of Iowa while completing coursework at Kirkwood.

Required Courses

Students take the following required courses at the University of Iowa. Students who begin at UI must complete all of the following before they may be admitted to the major in medical laboratory science, with the exception of five courses that may be taken concurrently with Kirkwood coursework. Enrollment in chemistry and mathematics courses requires completion of a placement exam. Courses may require prerequisites.

Course #	Title	Hours
All of these:		
BIOL:1411	Foundations of Biology	4
BIOL:1412	Diversity of Form and Function	4
BMB:3110	Biochemistry (may be taken concurrently while at Kirkwood if attending UI first)	3
CHEM:1110	Principles of Chemistry I	4
CHEM:1120	Principles of Chemistry II	4
HHP:2400	Fundamentals of Human Physiology	3
MATH:1005	College Algebra (or a math course [prefix MATH] numbered above 1005)	4
MICR:3147	Immunology and Human Disease (may be taken concurrently while at Kirkwood if attending UI first)	3
PATH:4201	Laboratory Management (may be taken concurrently while at Kirkwood if attending UI first)	3
One of these:		
CHEM:2210	Organic Chemistry I	3
CHEM:2230	Organic Chemistry I for Majors	3
One of these:		
BAIS:1500	Business Technology and Artificial Intelligence	2

CS:1020	Principles of Computing (may be taken concurrently while at Kirkwood if attending UI first)	3
One of these:		
STAT:1020	Elementary Statistics and Inference	3
STAT:1030	Statistics for Business (preferred)	4

Students who begin at the University of Iowa must complete the following courses before admission to the major. Students who begin at Kirkwood Community College must satisfy the following but may be able to transfer equivalent courses.

Course #	Title	Hours
One of these:		
HHP:1400	Human Anatomy and Physiology	3
HHP:2100	Human Anatomy	3
One of these:		
MICR:2157 & MICR:2158	General Microbiology and General Microbiology Laboratory	5
MICR:3164	Microbiology and Human Health	4

Mercy College of Health Sciences

Students in the Mercy College of Health Sciences (MCHS) program in Des Moines must maintain a cumulative grade-point average (GPA) of at least 2.50 in all courses for the major and in all University of Iowa courses.

Students in the Mercy College program complete the prerequisite coursework in the first three years at the University of Iowa and must pursue admission into the MCHS program for the fourth year.

Prerequisites for Admission to the Major, Mercy College

Students must:

- achieve a cumulative GPA of at least 2.50 on a 4.00 scale in all college-level coursework;
- achieve a cumulative GPA of at least 2.50 on a 4.00 scale in all college-level coursework in science, which includes biology, microbiology, zoology, chemistry, physics, mathematics, statistics, and related courses; and
- earn a grade of C (not C-minus) or higher in all required courses.

Students must complete the following coursework and be accepted into the program at MCHS before they may be admitted to the major in medical laboratory science.

Course #	Title	Hours
All of these:		
BIOL:1411 & BIOL:1412	Foundations of Biology and Diversity of Form and Function	8
CHEM:1110 & CHEM:1120	Principles of Chemistry I and Principles of Chemistry II	8
CHEM:2210 & CHEM:2220	Organic Chemistry I and Organic Chemistry II	6

CHEM:2410	Organic Chemistry Laboratory	3
MATH:1005	College Algebra	4
MICR:2157 & MICR:2158	General Microbiology and General Microbiology Laboratory	5
One of these:		
HHP:1400	Human Anatomy and Physiology	3
HHP:2100 & HHP:2110	Human Anatomy and Human Anatomy Laboratory	4
HHP:2400 & HHP:2410	Fundamentals of Human Physiology and Human Physiology Laboratory	4
HHP:3105	Anatomy for Human Physiology	3
HHP:3115	Anatomy for Human Physiology With Lab	5
HHP:3500	Human Physiology	3
HHP:3550	Human Physiology With Laboratory	5
MICR:3147	Immunology and Human Disease	3

Coursework taken to meet the biology and chemistry requirements completed seven or more years before application may require updating. This is determined by the MCHS program chair.

Questions about the requirements should be directed to the Mercy College of Health Sciences.

MLT to MLS

The Bachelor of Science with a major in medical laboratory science (MLS) earned through the medical laboratory technology to medical laboratory science (MLT to MLS) pathway requires 124 s.h., including 47-50 s.h. of credit for the major. Students must hold a valid American Society for Clinical Pathology (ASCP) Medical Laboratory Technician (MLT) certification or an American Medical Technologists (AMT) MLT certification and an Associate of Applied Science (AAS) in medical laboratory technology. They must maintain a grade-point average (GPA) of at least 2.00 to earn a BS in medical laboratory science at the University of Iowa.

The program is designed to provide a seamless academic pathway for certified MLTs to advance their education and professional standing by completing a bachelor's degree in MLS. Students build on their previous MLT education and experience by completing coursework in statistics, computing, physiology, higher-level biological and chemical sciences, and laboratory management. This combination of advanced science and leadership-focused coursework prepares graduates for supervisory roles, educational opportunities, and eligibility for the Medical Laboratory Scientist (ASCP) or (AMT) certification examination.

Students completing the BS through the MLT to MLS pathway must complete the same general education requirements as MLS students completing a subprogram; see General Education Requirement in this section of the catalog.

The MLT to MLS pathway to a BS in medical laboratory science requires the following coursework.

Courses Required for the Major

Course #	Title	Hours
BMB:3110	Biochemistry	3
BIOL:1411	Foundations of Biology	4
BIOL:1412	Diversity of Form and Function	4
CHEM:1110	Principles of Chemistry I	4
CHEM:1120	Principles of Chemistry II	4
HHP:2400	Fundamentals of Human Physiology	3
MATH:1005	College Algebra (or more advanced math course)	4
MICR:3147	Immunology and Human Disease	3
PATH:4201	Laboratory Management	3
One of these:		
MICR:3164	Microbiology and Human Health	4
MICR:2157 & MICR:2158	General Microbiology and General Microbiology Laboratory	5
One of these:		
HHP:1400	Human Anatomy and Physiology	3
HHP:2100	Human Anatomy	3
One of these:		
CHEM:2210	Organic Chemistry I	3
CHEM:2230	Organic Chemistry I for Majors	3
One of these:		
BAIS:1500	Business Technology and Artificial Intelligence	2
CS:1020	Principles of Computing	3
One of these:		
STAT:1020	Elementary Statistics and Inference	3
STAT:1030	Statistics for Business	4

MLT to MLS 2+2 Agreements

The MLT to MLS pathway includes 2+2 agreements with area community colleges in Iowa for qualifying MLT graduates to seamlessly transfer to the Carver College of Medicine to finish their Bachelor of Science in medical laboratory science in two years.

The MLT to MLS pathway provides access to baccalaureate education for MLTs throughout the state. The 2+2 partnership provides enhanced opportunities for unparalleled leadership experience.

See MLT to MLS tab on the Medical Laboratory Science Program page of the Carver College of Medicine website for more information about agreements with multiple higher education institutions around the state of Iowa.

Admission

Admission to the medical laboratory science professional programs is competitive; enrollment may be limited. Students must apply to the medical laboratory science program directly. Students interested in the Mercy College of Health Sciences program apply during the fall of their third year and

begin the professional program following that year; students interested in the Kirkwood Community College program would typically apply during the second year to begin the professional program the following year.

Before beginning the professional program, students must complete all prerequisites and must have earned at least 58 s.h. of college credit for the Kirkwood Community College program or at least 88 s.h. of college credit for the Mercy College of Health Sciences program. Students satisfy the English and public speaking prerequisites by fulfilling the GE CLAS Core Rhetoric requirement. They must satisfy any English as a Second Language (ESL) requirements specified by the University of Iowa before beginning the professional program.

Students should consult with a Medical Laboratory Science Program advisor as early as possible to plan preclinical studies that meet all requirements.

Career Advancement

The demand for medical laboratory scientists is much greater than the number of people qualified to fill the positions, and graduates have numerous employment opportunities nationwide. They consistently find employment before or very soon after graduation.

Opportunities for advancement include positions such as lab manager, computer specialist, technical specialist, or sales/instrument representative. An advanced degree in basic sciences, medicine, hospital administration, or business can expand earning potential.

Graduates often enjoy diverse work environments, including labs in hospitals, research institutions, public health facilities, forensic units, pharmaceutical companies, or the armed forces. They have an impact in the field as integral members of health care teams, providing information essential for the treatment and prevention of disease.

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.