

# Medical Laboratory Science

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## Contact Information

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- Medical Laboratory Science
- Pre-Medical Concentration

## Accreditation

The UIS Medical Laboratory Science (MLS) Program is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS), 5600 N. River Rd., Suite 720, Rosemont, IL 60018 (773) 714-8880. The MLS program's current full ten-year accreditation is the result of two consecutive accreditation cycles with no deficiencies.

Upon completion of a NAACLS approved laboratory education route, an individual may sit for the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) MLS professional certification examination. Graduates of the Bachelor of Science (BS) MLS Program at UIS are eligible to sit for the ASCP BOC examination via Route 1.

## Honors in Medical Laboratory Science (Department Honors)

MLS majors with a cumulative GPA equal to or greater than 3.25 and one semester in residency at UIS may elect to participate in the MLS honors option. In addition to the MLS Program requirements, honors students must:

- Maintain a minimum cumulative GPA of 3.25.
- Earn a minimum grade of B- for each course in the MLS Program.
- Successfully complete three credits of MLS 400.
- Present their findings in a formal paper and public presentation.

Students must apply for participation in the honors program to the MLS Program Director and obtain approval of a faculty research advisor prior to their final semester. This is not connected with the CAP Honors Program. Details can be found in the MLS Student Handbook

## Program Background

The BS in MLS degree provides exciting opportunities for individuals with an interest in science who wish to pursue a career as a medical laboratory practitioner. An MLS education also provides excellent preparation for medical and graduate schools or employment opportunities outside of a typical hospital setting. MLS graduates have gone on to medical school; law school; and physician assistant, pathologist assistant, and public health programs. Diverse job opportunities include employment in medical laboratories, research laboratories, forensic science laboratories, veterinary laboratories, fertility centers, higher education, healthcare information technology, and consulting. In the past three years, 100% of UIS MLS graduates

who sought employment have found employment in the field/closely related field or have pursued further education within one year of graduation.

Medical Laboratory Scientists play an integral role in the interdisciplinary spectrum of healthcare by: performing and interpreting a wide array of testing; investigating and correcting incidences of patient misidentification; researching and developing evidence-based testing algorithms; selecting and implementing new testing platforms; and validating, maintaining, and troubleshooting analytical instrumentation. Medical Laboratory Scientists serve as a valuable resource for the diverse healthcare workforce by providing guidance in the collection, selection, and interpretation of laboratory testing. Medical laboratory professionals must evolve continuously in the unpredictable and innovative healthcare atmosphere; carrying on rigorous continuing education programs throughout their careers.

Medical Laboratory Science has experienced several nomenclature changes throughout the history of the profession; beginning with Medical Technology (MT), then on to Clinical Laboratory Science (CLS), and finally, an amalgamation of the two, Medical Laboratory Science (MLS). For this reason, the professional laboratory environment is occupied by a workforce exhibiting all three certification terminologies (i.e. MT, CLS, MLS); though, each reflects the same level of laboratory education.

## Program Features/Requirements

The MLS major consists of two distinct academic phases: the pre-professional phase and the professional phase. During the pre-professional phase, the first two years of the four-year major, students complete UIS general education requirements and MLS prerequisites. During the professional phase, the final two years of the four-year major, students complete the MLS core courses and obtain clinical experience during practicum courses. The professional phase is the NAACLS-accredited Medical Laboratory Science program. All students must complete a secondary admissions process and be accepted by the MLS Program before they may begin the professional phase. See the MLS website for application information.

According to NAACLS curriculum requirements, the UIS MLS Program includes didactic and laboratory coverage of: Clinical Chemistry, Hematology, Hemostasis, Immunology, Immunohematology, Microbiology, Urine and Body Fluid Analysis, and Laboratory Operations. Due to content distribution and complexity, Clinical Chemistry, Hematology, Immunohematology, and Microbiology are considered major content areas while Hemostasis, Immunology, Urine and Body Fluid Analysis, and Laboratory Operations are considered minor content areas. Additional MLS Program content areas not required by NAACLS but relevant and necessary for professional preparation include: Phlebotomy, Molecular Diagnostics, Education, and Management.

During the first year of the professional phase, students complete a blend of online, classroom, and laboratory learning experience. After successful completion of all first-year course work, students rotate through clinical practicum courses in each of the four major content areas. Additionally, students complete a Special Topics practicum course in which they experience minor or highly specialized laboratory areas. Over the course of an academic year, students rotate through the MLS Program's clinical affiliate laboratories. This allows students the opportunity to see a variety of laboratory and healthcare environments; serve diverse patient populations; and utilize

several computer platforms. See the MLS Student Handbook for a current list of clinical affiliates. The program concludes with a two-part research and exam preparation capstone course series. Students must successfully pass a comprehensive closure exam to graduate from the MLS Program.

As required by the program's clinical affiliates, prior to clinical practicum courses, all MLS students are required to submit to a background check and drug screen. In the event that a student's record includes a disqualifying conviction according to the Illinois Health Care Worker Background Check Act, the MLS program may not be able to secure clinical practicum rotation spots for the student. If clinical practicum spots are obtained, the student may not be able to be employed in healthcare after graduation.

## The Bachelor's Degree

- Pre-Medical Concentration

### Advising

All students are encouraged to meet with the UIS Academic Advisor for MLS students and/or the MLS faculty advisor for the Pre-Professional Phase students prior to applying to the MLS Program to ensure students are on track to meet all general education and MLS prerequisites.

The MLS program does not accept advance placement or experiential learning credits in lieu of MLS course work - however, students may be able to apply advance placement and/or experiential learning credits toward general education and/or university requirements.

Students are advised to be familiar with the current *MLS Student Handbook*.

The transfer option provides for the continuing education of students who have completed the first two years (60 semester hours) of lower-division work (preferably with the A.A. or A.S. degree). The MLS program has two + two articulation agreements with several community colleges; however, transfer students from other two-year and four-year institutions are also encouraged to apply.

Students should consult with the UIS Academic Advisor for the MLS students for specific guidance regarding completion of general education requirements. In MLS, the clinical practicum courses MLS 487 / MLS 488 fulfill the requirement for the ECCE Engagement Experience (six hours).

For best outcomes in the Program and on the national certification exam, part-time status is not recommended.

### Grading Policy

Since the curriculum includes clinical learning experiences performed under professional supervision, the degree candidate must satisfy the customary expectations of academic work and must also meet the high-quality standards demanded of professional practitioners. Students must maintain a minimum cumulative GPA of 2.0 at UIS. Medical Laboratory Science students are required to maintain a programmatic GPA of 2.5 and must earn a grade of C- or better in all required courses.

## Program Learning Outcomes

1. Demonstrate the entry-level competency necessary to validate, perform, maintain, troubleshoot, and interpret medical laboratory analyses with reliable accuracy while upholding quality, safety, and regulatory standards.
2. Identify, apply, and communicate evidence-based practice in laboratory medicine to meet the needs of patients, laboratory practitioners, and members of the interdisciplinary healthcare team.
3. Exhibit principles and practices of professional conduct necessary to collaborate with and serve diverse populations.
4. Demonstrate readiness to maintain professional competency and relevance through continuing professional development and to promote a diverse, inclusive, equitable profession through professional engagement.

## Requirements

### MLS Course Requirements

MLS 415	Foundations in Medical Laboratory Science	2
MLS 425	Laboratory Operations	2
MLS 432	Hematology I	3
MLS 433	Medical Microbiology I	4
MLS 434	Clinical Chemistry I	4
MLS 442	Hematology II	4
MLS 443	Medical Microbiology II	3
MLS 444	Clinical Chemistry II	3
MLS 448	Introduction to Immunology	3
MLS 449	Introductory Immunology Lab	1
MLS 468	Immunohematology	4
MLS 475	Advanced Analysis in Laboratory Medicine	2
MLS 477	Molecular Diagnostics	2
MLS 487	ECCE: Practicum I	6
MLS 488	ECCE: Practicum II	6
MLS 496	Special Topics Practicum	3
MLS 497	Senior Seminar I	3
MLS 498	Senior Seminar II	3

**Total Hours** **58**

### Online

Certified Medical Laboratory Technicians (MLT) may be eligible to complete the online Bachelor of Science in Medical Laboratory Science (BS in MLS).

All other candidates must pursue the BS in MLS degree via an on-ground degree option.

### Eligibility

To be eligible for the online MLT-MLS articulation, prospective students must meet the following criteria:

- Successfully completed an associate-level, accredited MLT program.

- Currently certified as an MLT by the American Society for Clinical Pathology (ASCP) or American Medical Technologists (AMT).
- Employed in a medical laboratory as an MLT for at least one year.
  - A minimum of one year of professional experience must be achieved before beginning the online clinical practicum courses, which are completed in the final year of the program.
  - At least one year of professional MLT experience must have occurred within the past three years.

Prospective students who do not meet criteria for the online MLT-MLS articulation must pursue the BS in MLS degree via an on-ground degree option.