Crookston Campus

Medical Laboratory Science B.S.

Math, Science and Technology

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2022
- Required credits to graduate with this degree: 126
- Required credits within the major: 100 to 104
- This program requires summer terms.
- University of North Dakota in Grand Forks, ND. The spring and summer semesters of students' junior year and their final year of the program will be taught through an agreement with the University of North Dakota School of Medicine. The final year is in a clinical setting.
- Degree: Bachelor of Science

The BS in medical laboratory science will give students a degree that will provide life-long mobility, flexibility and opportunity. Individuals who enjoy science, solving problems, and working as part of a team may find medical laboratory science to be a rewarding career. A medical lab scientist is part of a healthcare team that performs a variety of fact-finding tests that are used by physicians in making 70 to 80 percent of medical decisions. In addition, this degree provides a great background for individuals interested in entering fields of forensic science or medicine (medical doctors, dentists, pharmacists, etc.).

Modern medicine would be impossible without the problem solving skills of medical lab scientists. MLS scientists run tests that encompass areas of clinical chemistry, clinical microbiology, hematology, clinical urology, immunology, immunohematology, and molecular diagnostics. Each test run will find an additional clue in the final patient diagnosis, which will assist the physicians in determining the best treatment for the patients. Due to the national shortage of medical lab scientists, MLS graduates will have excellent opportunities in nearly all areas of the United States.

Program outcomes for graduates:

Demonstrate competencies in the following areas: collection, safe handling and analysis of biological specimens; principles of continuous assessment of data collection and analysis; compliance with laboratory safety regulations; and ethical behavior and professionalism.
Demonstrate oral and written communications skills.
Effectively work with others in groups and be able to take on leadership roles when appropriate.
Demonstrate a disposition for an entry-level, professional position in the medical laboratory sciences for the 21st century.
Learn to think critically to solve problems.
Evaluate published scientific studies through a context of research design.
Demonstrate an understanding of the significance of cultural sensitivity and awareness as it applies to the profession.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Admission to year four of the program requires a minimum GPA of 2.8, no more than one "D" in any math or science course, and recommendation by the student's academic advisor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for courses required under math, biology, chemistry, ethics and writing, MLS and technology requirements. This includes grades earned at UMC or transferred in from another institution.

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Information current as of March 29, 2024

Math

Take exactly 2 course(s) totaling 6 - 7 credit(s) from the following:
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- Take 1 or more course(s) from the following:
  - MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  - MATH 1250 - Precalculus [MATH THINK] (4.0 cr)
  - MATH 1271 - Calculus I [MATH THINK] (4.0 cr)

Biology

Take exactly 6 course(s) totaling 22 - 23 credit(s) from the following:
- BIOL 2103 - Human Anatomy and Physiology I (4.0 cr)
- BIOL 2104 - Human Anatomy and Physiology II (4.0 cr)
- BIOL 3027 - Cell Biology (3.0 cr)
- Take exactly 1 course(s) from the following:
  - BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
  - BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- Take exactly 2 course(s) from the following:
  - BIOL 2012 - General Zoology (4.0 cr)
  - BIOL 2032 - General Microbiology (4.0 cr)
  - BIOL 3022 - Principles of Genetics (3.0 cr)

Chemistry

Take 5 - 6 course(s) totaling 12 - 14 credit(s) from the following:
- CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
- CHEM 1062 - Chemical Principles II (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
- Choose from the following:
  - CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)

  or CHEM 3021 - Biochemistry I (3.0 cr)

  CHEM 2301 - Organic Chemistry I (3.0 cr)

Ethics and Writing

Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- PHIL 2002 - Introduction to Ethics [HUMANITIES, ETH/CIV RE] (3.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)

Medical Laboratory Science

Take exactly 23 course(s) totaling exactly 54 credit(s) from the following:

MLS 2220 - Introduction to Clinical Laboratory Operations (UND) (3.0 cr)
MLS 2226 - Introduction to Clinical Immunology and Molecular Diagnostics (UND) (3.0 cr)
MLS 3332 - Introduction to Clinical Hematology (UND) (3.0 cr)
MLS 3334 - Introduction to Clinical Microbiology (UND) (3.0 cr)
MLS 3339 - Introduction to Evidence Based Practice (UND) (3.0 cr)
MLS 4411 - Clinical Chemistry I (UND) (2.0 cr)
MLS 4412 - Clinical Hematology & Hemostasis I (UND) (3.0 cr)
MLS 4413 - Clinical Immunohematology I (UND) (2.0 cr)
MLS 4414 - Clinical Microbiology I (UND) (3.0 cr)
MLS 4415 - Clinical Urinalysis & Body Fluids I (UND) (2.0 cr)
MLS 4416 - Clinical Immunology & Molecular Diagnostics (UND) (1.0 cr)
MLS 4420 - Clinical Laboratory Operations (UND) (2.0 cr)
MLS 4421 - Clinical Chemistry II (UND) (2.0 cr)
MLS 4422 - Clinical Hematology & Hemostasis II (UND) (3.0 cr)
MLS 4423 - Clinical Immunohematology II (UND) (2.0 cr)
MLS 4424 - Clinical Microbiology II (UND) (3.0 cr)
MLS 4425 - Clinical Urinalysis & Body Fluids II (UND) (2.0 cr)
MLS 4431 - Clinical Chemistry & Urinalysis III (UND) (2.0 cr)
MLS 4432 - Clinical Hematology & Hemostasis III (UND) (2.0 cr)
MLS 4433 - Clinical Immunohematology III (UND) (2.0 cr)
MLS 4434 - Clinical Microbiology III (UND) (2.0 cr)
MLS 4449 - Capstone in Medical Laboratory Science (UND) (3.0 cr)
MLS 4450 - Advanced Clinical Applications in Medical Laboratory Science (UND) (1.0 cr)

Liberal Education

This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer

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Curriculum. The following are specific required liberal education courses.
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
•COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
•COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
•COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
If applicable, the course chosen to fulfill the technology requirement may also satisfy a major requirement.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
•CA 1xxx
or CA 2xxx
or CHEM 3022 - Fate and Analysis of Chemicals (4.0 cr)
or MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

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