Twin Cities Campus

Medical Laboratory Sciences MMLS

Allied-Medical Technology

Acad Health Sci, Assoc VP

Link to a list of faculty for this program.

Contact Information:
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Website: https://www.alliedhealth.umn.edu/medical-laboratory-sciences

- Program Type: Master's
- Requirements for this program are current for Spring 2019
- Length of program in credits: 30 to 55
- This program requires summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

The masters in medical laboratory sciences (MMLS) is a 5 semester full-time or 8 semester part-time, graduate level program for students with a baccalaureate (or higher) degree in biology or a related field. The program includes all of the essentials of the bachelor of science in medical laboratory science (BS in MLS) program, plus additional graduate work. Upon completion of the coursework, students are eligible to take the American Society of Clinical Pathologys Generalist (MLS) Board of Certification exam (ASCP BOC) as well as the categorical exam in molecular biology (MB).

Accreditation

This program is accredited by National Accrediting Agency for Clinical Laboratory Science (NAACLS)

Program Delivery

This program is available:

- partially online (between 50% to 80% of instruction is online)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Completion of a baccalaureate degree from an accredited institution completed no later than June 1 prior to start of fall semester for year admitted.

Required prerequisites

Prerequisite Biology

8 credit hours of biology must be taken prior to entry to the program.
BIOL 1009 - General Biology [BIOL] (4.0 cr)
PHSL 3051 - Human Physiology (4.0 cr)

Prerequisite Calculus

3-4 credits of calculus must be completed prior to program entry.
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)

Prerequisite Statistics

3-4 credit hours of statistics is required prior to being admitted to the program.
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Prerequisite Chemistry

14 credits of chemistry must be completed prior to entering the program.
Chemistry Principles I and II
Chemistry Principles I
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
Chemistry Principles II

CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)

Organic Chemistry

Organic Chemistry I and II

CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)

Microbiology with Lab

5 credit hours of microbiology with laboratory component must be completed prior to entry to the program.
VBS 2032 - General Microbiology With Laboratory (5.0 cr)
or MICB 3301 - Biology of Microorganisms (5.0 cr)

Genetics

3 credit hours of genetics must be completed prior to entry to the program.
GCD 3022 - Genetics (3.0 cr)
or BIOL 4003 - Genetics (3.0 cr)

Biochemistry

3 credit hours of biochemistry must be completed prior to entry to the program.
BIOC 3021 - Biochemistry (3.0 cr)

Immunobiology

3 credit hours of immunobiology must be completed prior to entry to the program.
MLSP 5511 - Principles of Immunobiology (3.0 cr)

Other requirements to be completed before admission:
There are fourteen prerequisite courses to complete before the start of the master in medical laboratory sciences program (MMLS) program: biology, general chemistry (2 semesters with lab), organic chemistry (2 semesters), biochemistry, calculus, statistics, human physiology, microbiology with lab, plus upper division genetics and immunology. At least ten courses must be completed, with final grades sent to the MLS program, by the application deadline.

Special Application Requirements:
Prior to matriculation to the program, students must complete a Minnesota background check, immunizations, and meet the Medical Laboratory Sciences Program published technical standards. Application to the MMLS program is available on the Medical Laboratory Sciences Program website. After a preliminary review of submitted materials, selected applicants are invited to participate in an interview with representatives of the admissions committee.

International applicants must submit score(s) from one of the following tests:

- TOEFL
  - Internet Based - Total Score: 95
  - Paper Based - Total Score: 586
- MELAB
  - Final score: 85
  - Speaking test score: 0

The preferred English language test is Test of English as Foreign Language

Key to test abbreviations(TOEFL, MELAB).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

Plan C: Plan C requires 30 to 55 major credits and up to null credits outside the major.The is no final exam.A capstone project is required.
Capstone Project: The capstone project is an examination of a clinical problem in the setting where students complete their final clinical rotation. It may also be a type of research experience or research paper with an MLS program faculty member.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semesters must be completed before filing a Degree Program Form.

Required Coursework (55 Credits)

Take the following courses for a total of 55 credits:

MLSP 5011W - Professional Issues in the Health Care Community [WI] (2.0 cr)
MLSP 5012 - Educational Methods and Interprofessional Practice (1.0 cr)
MLSP 5013 - Scholarly Inquiry and Analysis in Medical Laboratory Sciences (1.0 cr)
MLSP 5014W - Laboratory Operations and Management in Health Care Systems [WI] (2.0 cr)
MLSP 5112 - Application of Diagnostic Microbiology Principles (2.0 cr)
MLSP 5212 - Application of Hematology & Hemostasis Principles (1.0 cr)
MLSP 5214 - Advanced Hematology Morphology (1.0 cr)
MLSP 5311 - Fundamental Biomedical Laboratory Techniques (4.0 cr)
MLSP 5312 - Body Fluid Analysis (2.0 cr)
MLSP 5514 - Application of Transfusion Medicine Principles (2.0 cr)
MLSP 5701 - Clinical Experience in Microbiology (2.0 cr)
MLSP 5702 - Clinical Experience in Hematology and Hemostasis (2.0 cr)
MLSP 5703 - Clinical Experience in Clinical Chemistry and Urinalysis (2.0 cr)
MLSP 5704 - Clinical Experience in Transfusion Medicine (2.0 cr)
MLSP 6024 - Advanced Laboratory Operations and Management (3.0 cr)
MLSP 6111 - Concepts in Diagnostic Microbiology (3.0 cr)
MLSP 6113 - Advanced Diagnostic Microbiology (3.0 cr)
MLSP 6211 - Advanced Principles in Hematology and Hemostasis (3.0 cr)
MLSP 6213 - Advanced Diagnostic Hematology (3.0 cr)
MLSP 6313 - Advanced Chemical Analysis in Health and Disease (3.0 cr)
MLSP 6401 - Fundamentals of Molecular Diagnostics (3.0 cr)
MLSP 6513 - Advanced Principles in Transfusion Medicine (3.0 cr)
MLSP 6801 - Advanced Practicum in Medical Laboratory Science (2.0 cr)
MLSP 6905 - Research Methods and Capstone Project (3.0 cr)

Program Sub-plans

A sub-plan is not required for this program.
Students may not complete the program with more than one sub-plan.