Twin Cities Campus

Medical Laboratory Sciences MMLS
Allied-Medical Technology
Academic Health Center Shared

Link to a list of faculty for this program.

Contact Information:
420 Delaware St SE, MMC 711, Minneapolis, MN 55455  877-334-2659
Email: cahpinfo@umn.edu
Website: https://www.alliedhealth.umn.edu/medical-laboratory-sciences

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30 to 55
- This program requires summer semesters for timely completion.
- Degree: Master of Laboratory Sciences

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 Pathology's 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. There 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 - Foundations in Interprofessional Communication and Collaboration (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 Diagnostics 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.
Twin Cities Campus
Occupational Therapy M.O.T.
Allied-Occupational Therapy
Academic Health Center Shared

Link to a list of faculty for this program.

Contact Information:
Program in Occupational Therapy
MMC 368
420 Delaware Street SE
Minneapolis, MN 55455
877-334-2659; fax: 612-626-8127
Email: cahpinfo@umn.edu
Website: http://www.cahp.umn.edu/ot

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 78
- This program requires summer semesters for timely completion.
- The program admits students to two locations, the Minneapolis campus and the Rochester campus.

Level I Fieldwork occurring within select courses, will be located across the state of Minnesota. Two full-time Level II Fieldwork placements occur in Minnesota with rare exceptions. Students are responsible for all costs associated with Level I and Level II fieldwork including housing arrangements and transportation for all fieldwork placements.

- Degree: Master of Occupational Therapy

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 Occupational Therapy (OT) program is a 22-25 month, 78-credit, graduate-level professional program completed over five semesters.

Graduates of the program will be eligible to sit for the National Certification Examination for the Occupational Therapist, administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this examination, the graduate will be an occupational therapist, registered (OTR). In addition, most states require licensure to practice; however, state licenses are usually based on the results of the NBCOT certification examination.

A felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure. Information is available from:
National Board for Certification in Occupational Therapy
12 South Summit Avenue, Suite 100
Gaithersburg, MD 20877-4150
(301) 990-7979
FAX (301) 869-8492
www.nbcot.org
info@nbcot.org

The program has been continuously accredited since 1946. In 2007, a new performance site was accredited making the OT program available in both Minneapolis and Rochester, Minnesota.

The OT program at both performance sites is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA).
4720 Montgomery Lane, Suite 200
Bethesda, MD 20814-3449
ACOTE's telephone number, c/o AOTA, is (301) 652-AOTA
www.acoteonline.org.

Accreditation
This program is accredited by Accreditation Council for Occupational Therapy Education (ACOTE) - see above contact information.
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.

Applicants must have a bachelor's degree completed prior to fall enrollment in order to apply to the Occupational Therapy program. There are no preferred undergraduate majors.

Required prerequisites
Core Prerequisite Courses
Courses must be satisfactorily completed at a regionally accredited institution. Six of the seven courses must be completed at the time of application. All prerequisites must be completed no later than the end of summer session of the year of admission. The non-core prerequisite, medical terminology, may be taken as a college course or as an online course equivalent to 1 college credit.

Prerequisites must be fulfilled with a minimum number of semester credits, listed next to each course.
Human Anatomy (3 cr)
Human Physiology (3 cr)
Statistics (3 cr)
This course must include descriptive and inferential statistics. Courses that focus on Research Methods are not sufficient to fulfill this requirement.
General Psychology (3 cr)
Abnormal Psychology (3 cr)
Human Development Across Life Span (3 cr)
Students will be required to verify that the course(s) taken covered content from conception to death. Students may need to take a series of courses to complete this prerequisite.

Sociology/Anthropology
This course should include content related to human societies and behaviors, social theory and theories of social change, methods of study in sociology, characteristics of social units (for example, race/ethnicity, economics/social organizations, gender, politics, religious systems) and the impact of cultural diversity. Courses that focus on one topic (e.g. sociology of education or sociology of sports) are not sufficient to fulfill this requirement.
Intro to Sociology (3 cr)
or Cultural Anthropology (3 cr)

Non-Core Prerequisite
Medical Terminology (1 cr)
Or the equivalent to 1 college credit may be substituted.

Other requirements to be completed before admission:
Computer Competency:
Admitted applicants must be proficient at using a personal computer, including but not limited to sending and receiving email, using data and word processing software (primarily Microsoft Office software), using the Internet, and navigating the U of MN and other websites. See computer requirements for online courses http://cahp.umn.edu/minimum-technical-standards.

Practice Experience:
Minimum of 20 hours of OT observation in at least two practice areas OR completion of an Orientation to OT course is required.

Recommended:
-Additional OT observation experience, above that which is required.
-Work, volunteer or observation experience in health or education related fields (e.g. nursing, physical therapy, education/teaching, speech pathology, long term care, home health, children and youth, neurotypical or disability populations). Experiences must be direct interaction with patients/clients/students.
-Participation in research.
-Leadership experiences.

Special Application Requirements:
Applicants whose native language is not English or whose academic studies were done exclusively at a non-English speaking institution(s) must prove English proficiency by providing official Test of English as a Foreign Language (TOEFL) scores.

International Applicants: The OT Program is NOT able to accept students on F1 or F2 visas due to federal regulations regarding online degree programs. Applicants with other visa types should contact cahpinfo@umn.edu for information about admission eligibility.

Applicants should complete a prerequisite planning sheet found on the OT program web page. http://cahp.umn.edu/prerequisites

If the student's school(s) is not listed, or if the Prerequisite Planning Sheet does not list the courses taken, the student should send course description(s) for each course taken that the student believes fulfills a specific prerequisite requirement to cahpinfo@umn.edu.

Criminal Background Studies: The University of Minnesota requires Minnesota Department of Health criminal background studies on all students admitted to the OT Program. Failure to pass the background study may preclude successful completion of the program. Additional background studies may be required by specific fieldwork settings. Students will be required to complete these studies in order to participate in the experiences.

Admitted students are provided detailed instructions for how to request a criminal background study soon after beginning the program.

International applicants must submit score(s) from one of the following tests:
- TOEFL
  - Internet Based - Total Score: 100
  - Paper Based - Total Score: 550

Key to test abbreviations (TOEFL).

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 78 major credits and 0 credits outside the major. The is no final exam. A capstone project is required.

Capstone Project: Students will engage in a group or individual study of a research question related to occupational therapy. Students will demonstrate a high level of critical thinking as they plan, conduct, and evaluate their mentored scholarly project. Students will submit a written description of their project in APA format and defend their scholarly project through an oral poster presentation.

This program may not be completed with a minor.

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

A minimum GPA of 2.8 is required for students to remain in good standing.

All courses must be graded "C" or higher and a minimum semester GPA of 2.8 is also required for students to remain in good standing.

Students complete two 12-week, full-time equivalent, Level II fieldwork experiences in Minnesota after successfully completing all classroom-based coursework. All Level II fieldwork must be completed within 24 months of classroom-based coursework.

Year One
The first year builds a foundation in the study of activity and occupation; society, community, family, and environmental influences on human occupation; and foundations of occupational therapy practice when human occupation is reduced. All students participate in their communities as engaged citizens and with their inter-professional colleagues as they practice professional level skills. Five Level I fieldwork experiences provide guided practice in the occupational therapist role.

Fall Semester
6-8 sessions face-to-face
- CAHP 5110 - Foundations of Interprofessional Communication and Collaboration (1.0 cr)
- OT 6100 - Public and Professional Engagement I (0.5 cr)
- OT 6101 - Foundations of Occupational Science and Occupational Therapy (4.0 cr)
- OT 6102 - Professional Identity: Behaviors and Attitudes (2.0 cr)
- OT 6103 - Occupational Therapy Process for Society (3.0 cr)
- OT 6111 - Foundations: Occupations as Therapy (3.0 cr)
- OT 6113 - Occupational Therapy Process for Community (3.0 cr)

Spring Semester
6-8 sessions face-to-face
- OT 6200 - Public and Professional Engagement II (0.5 cr)
- OT 6201 - Functional Anatomy and Kinesiology (3.0 cr)
OT 6202 - Occupational Therapy Process for Individuals: Occupation Through Compensation (5.0 cr)
OT 6203 - Occupational Therapy Process for Family (2.0 cr)
OT 6213 - Occupational Therapy Process for Individuals: Medical Contexts (2.0 cr)
OT 7201 - Scholarly Inquiry in Health Sciences (4.0 cr)

Summer Semester
8-15 sessions face-to-face
OT 6200 - Public and Professional Engagement II (0.5 cr)
OT 6301 - Neuroscience (5.0 cr)
OT 6302 - Occupational Therapy Process for Individuals: Occupation Through Remediation (4.0 cr)
OT 6312 - Occupational Therapy Process for Individuals: Psychosocial Approaches (3.0 cr)
OT 6322 - Occupational Therapy Process for Individuals: Work Contexts (2.0 cr)
OT 7394 - Scholarly Project in OT I (2.0 cr)

Year Two
Year two shifts to a focus on practice. Students apply OT concepts to increasingly complex areas of practice in a broad range of contexts including work, school, and group settings. Level I fieldwork provides opportunities to practice within communities. Six months is devoted to Level II fieldwork where students practice under the direct supervision of an occupational therapist in a medical and/or community setting. Students should expect to travel to fieldwork sites.

Fall Semester
15 sessions face-to-face
OT 6200 - Public and Professional Engagement II (0.5 cr)
OT 6402 - Occupational Therapy Process for Individuals: Occupation Through Neurorehabilitative Approaches (4.0 cr)
OT 6403 - Management of Occupational Therapy Services (1.0 cr)
OT 6412 - Occupational Therapy Process for Individuals: Orthotics and Prosthetics (3.0 cr)
OT 6422 - Occupational Therapy Process: Group Context (2.0 cr)
OT 6432 - Occupational Therapy Process for Individuals: Educational Context (2.0 cr)
OT 7494 - Scholarly Project in OT II (4.0 cr)

Spring Semester
OT 7596 - Occupational Therapy Level II Fieldwork I (6.0 cr)
OT 7696 - Occupational Therapy Level II Fieldwork II (6.0 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.

Rochester
Sub-plan is used by the program in Occupational Therapy to differentiate between students admitted to the Minneapolis or the Rochester campus. Regardless of the assigned campus, all occupational therapy students take the same courses with the same instructors during the same semester. Instructional support staff may vary by campus.