Twin Cities Campus

Medicinal Chemistry M.S.

Graduate Studies in Medicinal Chemistry

College of Pharmacy

Link to a list of faculty for this program.

Contact Information:
Department of Medicinal Chemistry, 8-101 Weaver-Densford Hall, 308 Harvard Street SE, Minneapolis, MN 55455 (612-624-9919; fax: 612-626-3114)
Email: medchem@umn.edu
Website: http://z.umn.edu/medchemgrad

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

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.

Note: Students are not admitted directly to the MS program. See the Medicinal Chemistry PhD or contact the director of graduate studies for more information.

The medicinal chemistry program emphasizes the application of chemical principles to research on the action of drugs on biological systems. Courses offered by the program focus on general principles of medicinal chemistry, drug design and synthesis, chemical aspects of drug metabolism, chemical mechanisms of drug toxicity and carcinogenicity, computer-assisted drug design and receptor modeling, and combinatorial chemistry.

Students must complete a core curriculum of advanced courses in organic and medicinal chemistry, as well as credits in a minor or related field.

Program Delivery

This program is available:

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

Prerequisites for Admission

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

Special Application Requirements:
Note: Students are not admitted directly to the M.S. program. See the Medicinal Chemistry Ph.D.

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

Program Requirements

Plan A: Plan A requires 14 major credits, 6 credits outside the major, and 10 thesis credits.The final exam is oral.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.0 is required for students to remain in good standing.

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

Students complete a 14-credit core curriculum of advanced courses in organic chemistry and medicinal chemistry. In addition, students take 6 credits of coursework, chosen in consultation with the advisor, which supports the course of study.

Required Courses

MEDC 8001 - General Principles of Medicinal Chemistry (3.0 cr)
MEDC 8002 - General Principles of Medicinal Chemistry (3.0 cr)
MEDC 8050 - Physical and Mechanistic Organic Chemistry (2.0 cr)
MEDC 8100 - Medicinal Chemistry Seminar (1.0 cr)
MEDC 8435 - BioAssay & Data Analysis (1.0 cr)
CHEM 8321 - Organic Synthesis (4.0 cr)

Additional Courses

Take at least 1 course from the following list. Choose remaining coursework to meet the 6-credit minimum in consultation with the advisor.

MEDC 5185 - Principles of Biomolecular Simulation (3.0 cr)
MEDC 5494 - Advanced Methods in Quantitative Drug Analysis (2.0 cr)
MEDC 8500 - Design of Chemotherapeutic Agents (2.0 cr)
MEDC 8753 - MOLECULAR TARGETS OF DRUG DISCOVERY (3.0 cr)
MEDC 8420 - Natural Products Chemistry (3.0 cr)
MEDC 8471 - High Throughput Drug Discovery (3.0 cr)
MEDC 8413 - Chemistry of Nucleic Acids (3.0 cr)
MEDC 8700 - Advanced Concepts in Drug Design (2.0 cr)

Thesis Credits

Take at least 10 masters thesis credits.

MEDC 8777 - Thesis Credits: Master's (1.0 - 18.0 cr)