

# CELLULAR, MOLECULAR, AND MICROBIAL BIOLOGY MS - MOLECULAR BIOLOGY AND BIOCHEMISTRY

BCH 590 or BIOM 590 Research	Research
BCH 599 or BIOM 599 Thesis	Thesis
BCH 600	Cell Organization & Mechanisms
<b>Total Hours</b>	<b>30</b>

## General Graduate Program Requirements

Graduate School policies and standards can be found on the Graduate School Policies page (<https://catalog.umn.edu/graduate/school-policies/>).

The minimum GPA for any graduate program is 3.0. Individual programs may require more than a 3.0 to remain in good standing.

The minimum grade for a course to be accepted toward any master's or doctoral requirement is C. The minimum grade for a course to be accepted toward a certificate program is B-. Individual programs may require higher grades for specific courses.

## Master of Science - Cellular, Molecular, and Microbial Biology; Molecular Biology and Biochemistry Concentration

- All CMMB M.S. students have a common set of requirements: students must take a total of 30 semester credits, including 20 semester credits of courses (includes any course other than Thesis and Research).
- At least half of the non-thesis and non-research credits toward the degree must be at the 500 or 600 level.
- The following credit limitations apply:
  - A maximum of 6 credits of Special Topics (BCH 591, BIOB 591 and BIOM 591).
  - A maximum of 6 credits of Independent Study (BIOB 592, and BIOM 592).
  - A maximum of 10 credits of research and thesis (BCH 590, BIOB 590, BCH 599, and BIOM 599).

## Course Requirements

Code	Title	Hours
<b>Core Courses</b>		
Complete all of the following courses:		
BCH 570 or BIOM 570	Intro to Research	1
BIOB 547	Experimental Molecular, Cellular, and Chemical Biology	2
BIOM 594	Molecular and Biomedical Sciences Seminar	4
<b>Electives, Research, and Thesis</b>		
Complete 23 credits of elective courses.		23
Elective courses can include any graduate-level course in General Biology (BIOB), Microbiology (BIOM), and Biochemistry (BCH). Suggested courses include:		
BCH 581	Physical Biochemistry	
BCH 582	Proteins and Enzymes	
BCH 584	Nucleic Acids	