

BIOCHEMISTRY AND MOLECULAR BIOLOGY (BMB) – POSTDOCTORAL MASTERS

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Biochemistry and Molecular Biology Track:

- Biochemistry and Structural Biology
- Cell Biology and Genetics
- Cancer Biology Sub-tracks

Application

Candidates must complete a formal application. More details are available on the MCGSBS Master's Programs web page. Additional details specific to the CTS Master's Program can be found here (<https://www.mayo.edu/research/centers-programs/center-clinical-translational-science/education/postdoctoral-masters-degree-program/application-process.html>). Applicants must be approved by the track program director and admission endorsed by MCGSBS.

Eligibility

Applicants must be employed at Mayo Clinic. The employment appointment, as documented at the time of application, must be greater in length than the time required for completion of all requirements of the program. Eligible roles include: Any Mayo Clinic physician, scientist, fellow or resident with a doctoral degree in a discipline applicable to clinical research or medical student who plans to have a research career. Visiting clinicians, research trainees and research collaborators are not eligible.

Time Requirement

Applicants must have adequate protected time to complete course and research requirements within designated program length. Applications with inadequate protected time to complete the program will **not** be accepted. Time to completion can vary by program and Mayo Clinic role from two to five years. All scholars must be in their program a minimum of 1 year in order to meet the MCGSBS residency requirement. Scholars must complete all program requirements within 5 years.

Students must have dedicated time for their program commitments and abide by course attendance requirements as defined in course syllabi. Students must be appropriately engaged in their program and demonstrate continued progress towards graduation.

Registration Requirement

At least 75% of the coursework for the Master's degree must be completed in MCGSBS. It is expected that a minimum of one year will be devoted to research. Students must be enrolled in a minimum of one course per term. If students are not registered for courses, they will be considered inactive to some reporting agencies and subject to any implications of the inactive status, e.g. eligibility for student loan deferral if applicable.

Minimum Credit Requirements

Students must complete a minimum of 45 credits, which can include a maximum of 16 Research credits. (See individual specialty track descriptions for specific course requirements.)

Transfer Credits

A total of 6 didactic credits may be transferred into the program. For more details, see the Credit Transfer Policy on the MCGSBS Policies and Procedures intranet site.

This Master's degree track in Biochemistry and Molecular Biology is open only to residents and research fellows in the Mayo School of Graduate Medical Education. It offers a flexible course for Master's study that can be designed to emphasize one of three areas of specialty: Biochemistry and Structural Biology (BSB), Cell Biology and Genetics (CBG) or Cancer Biology (CB).

Course Requirements

The curriculum for the Basic Science Master's degree consists of **45 credits**, which can include a maximum of 16 Research credits.

Code	Title	Hours
MGS Course Requirements ¹		
MGS 6100	Master's Thesis Proposal	3
MGS 6840	Master's Research (4 cr/qtr - 4 qtrs required)	16
Biomedical Science Requirements		
MGS 6000	Responsible Conduct of Research	1
BMB 5100	Chemical Principles of Biopolymer Systems	2
BMB 5150		2
Advanced Coursework		
Select 12 credits ²		17
Journal Clubs		
Select 4 credits ³		4
Total Hours		45

¹ It is expected that a minimum of one year will be devoted to research.

² Any courses approved for graduate credit. Courses to be selected in consultation with your project mentor.

³ Any graduate school approved Journal Clubs. Courses to be selected in consultation with your project mentor.

Written Qualifying Exam

The Master's candidate must pass the BMB Written Qualifying Exam to complete the degree requirements. Students take the written qualifying exam once they have completed the core courses and have considered whether to take the others featured in the exam. The exam is a one-day exam held at the beginning of July and consists of demonstrating critical evaluation and understanding of two published primary research papers relevant to the broad field of Biochemistry and Molecular Biology as covered in the core courses BMB 5100 and BMB 5150. Three sets of papers reflecting the three areas of emphasis of the track: BSB, CBG and CB, will be made available to the students three days before the exam. On the day of the exam, students are required to answer a series of specific questions associated with any two of the six papers. The questions will cover foundation of knowledge in addition to synthesis of concepts. The

exam is prepared and graded by the faculty and an overall grade of 70% is required for successful completion of the exam.