

BIOCHEMISTRY AND MOLECULAR BIOLOGY (BMB) – PROFESSIONAL MASTER'S

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Professional Master's Degree

The Biochemistry and Molecular Biology (BMB) Track offers a customizable course load and training environment for Professional Master's study that can be designed to emphasize one of three areas of broad specialty: Biochemistry and Structural Biology (BSB), Cell Biology and Genetics (CBG) or Cancer Biology (CB). The requirements for the Professional Master's Degree in Biochemistry and Molecular Biology conform to the general requirements of the MCGSBS.

Biochemistry and Molecular Biology Specialties:

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

Application

Candidates must complete a Professional Master's Degree Application form. This form is available on the MCGSBS Master's Programs intranet site. Supporting documents include a program fee agreement form, transcripts from previous colleges and two letters of recommendation - one preferred from your direct supervisor/manager.

Eligibility

Enrollment is restricted to current Mayo employees/appointees and is available at all three sites: Arizona, Florida, and Minnesota, as well as the Mayo Clinic Health System. Visiting clinicians, research trainees, and research collaborators are not eligible.

Applicants must have received a bachelor's degree from an accredited college or university, must have taken appropriate undergraduate science courses to adequately prepare for the Master's program, must have a minimum undergraduate grade point average that demonstrates a record of academic excellence.

Time Requirement

Time to completion can vary by student (three to five years), but all requirements for the Master's degree must be completed within five years. The five-year period begins on the start date of the term the student is appointed to. If the student's Mayo employment ends prior to completion of the program, the MCGSBS appointment will also end.

Registration Requirement

At least 75% of the coursework for the Master's degree must be completed in MCGSBS.

Minimum Credit Requirements

Students must complete a minimum of 45 credits, including MGS 6000 Responsible Conduct of Research. Didactic credits may vary by track - refer to specific program requirements for details.

Transfer Credits

A total of 9 didactic credits may be transferred into the Professional Master's Program. For more details, see the Credit Conversion, Transfer, Waiver and Substitution Policy on the MCGSBS intranet site.

Course Requirements

A total of **45 credits** with maintenance of at least a 3.0 GPA are required for graduation.

Code	Title	Hours
MGS Courses		
MGS 6000	Responsible Conduct of Research	1
MGS 5031	Fundamental Principles in Genome Dynamics, Biochemistry, and Cellular Biology	3
BMB 5100	Chemical Principles of Biopolymer Systems (Advanced Chemical Principles of Biological Syst)	2
BMB 5150	Molecular Cell Biology (Advanced Molecular Cell Biology)	2
MGS 6400	Master's Capstone Project	6
Journal Clubs		
BMB 6500	Biochemistry and Molecular Biology Journal Club (1 cr./yr) ¹	1
Advanced Coursework		
Any course approved for graduate credit regardless of the "track" it is offered by.		30
Total Hours		45

¹ Two credits maximum. Students must attend all years after completing the written qualifying exam and present at least once. The second journal club credit may be obtained by taking and participating in any other JC offered by the graduate school should a different JC be more aligned with the student's area of interest.

Program milestones are included in the Academic Progress and Graduation Requirements for Masters Programs Policy. See below for BMB-specific program highlights and instruction.

Students are expected to make continuous and successful academic and professional progress toward graduation requirements for the M.S. degree. The concept of satisfactory progress mandates monitoring of a students' academic and professional performance through items including, but not limited to:

- Complete Degree Planning Tool (DPT)
- Project Advisor Selection
- Pass Written Qualifying Exam
- Masters Capstone Project
- Meet any program specific competencies as defined by track

Full details are included in the Academic Progress and Graduation Requirements for Masters Programs Policy on the MCGSBS intranet site.

Minimum Grade Requirements

Students are expected to maintain a grade point average of 3.0 in didactic course work. Students whose performance falls below this standard in a given quarter will be placed on academic probation, as described in the Deficiencies and Unsatisfactory Progress Policy and

Warning, Probation, Dismissal and Appeal Policy outlined on the MCGSBS intranet site.

Degree Planning Tool

The use of a Degree Planning Tool (DPT) is required and allows students to list the course work to fulfill degree requirements, including transfer credits. The DPT must be completed during the first academic year and should be updated as courses are completed throughout the training program. A final completed DPT must be submitted to the school when a tentative defense date has been determined to be cleared to graduate.

Project Advisor Selection

Project Advisor is selected with counsel from Program Director, done at any time during training but no later than end of year. A list of Faculty with Privileges can be found on the MCGSBS intranet site.

Written Qualifying Examination

The written qualifying examination will test the breadth of biomedical knowledge, and analytic and critical reasoning skills. The content and format of the examination is determined by each track. The written qualifying examination must be passed before the Master's final project review may be scheduled.

For more details, see the Written Qualifying Exam Procedure on the MCGSBS intranet site.

Masters Capstone Project

This is required for all students in the Professional Master's Program and serves as the final academic milestone of the degree. Students will complete a scholarly project that demonstrates mastery of their chosen track and area of interest. Projects may take the form of a critical review article, original research manuscript, case study, or another approved scholarly product suitable for presentation or publication. Students must register for MGS 6400 Masters Capstone Project during their final quarter in the program. The course may only be taken once for credit. Students must register with the Program Director for their track as the course director.

Suggested Sequence

This is a suggested sequence based on a summer term start. Individual course plans may vary depending on true start date, program, employment/ personal commitments, and research interests. Be sure to confirm you have met your requirements using your degree planning tool. Course offerings may vary slightly. Current course offerings are posted in the course catalog.

Code	Title	Hours
First Year - Summer Term		
MGS 6000	Responsible Conduct of Research	1

Code	Title	Hours
First Year - Fall Term		
BMB 5100	Chemical Principles of Biopolymer Systems	2
MGS 5031	Fundamental Principles in Genome Dynamics, Biochemistry, and Cellular Biology	3

Code	Title	Hours
First Year - Winter Term		
BMB 5150	Molecular Cell Biology	2

Code	Title	Hours
First Year - Spring Term		

Code	Title	Hours
Second Year - Summer Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Second Year - Fall Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Second Year - Winter Term		

Code	Title	Hours
Second Year - Spring Term		

Code	Title	Hours
Third Year - Summer Term		

Code	Title	Hours
Third Year - Fall Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Third Year - Winter Term		

Code	Title	Hours
Third Year - Spring Term		

Code	Title	Hours
Fourth Year - Summer Term		

Code	Title	Hours
Fourth Year - Fall Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Fourth Year - Winter Term		

Code	Title	Hours
Fourth Year - Spring Term		

Code	Title	Hours
Fifth Year - Summer Term		

Code	Title	Hours
Fifth Year - Fall Term		

Code	Title	Hours
Fifth Year - Winter Term		

Code	Title	Hours
Fifth Year - Spring Term		