

# BIOCHEMISTRY AND MOLECULAR BIOLOGY (M.S.)

The M.S. degree in Biochemistry and Molecular Biology provides strong research training for students who are interested in a research career in academia, medicine, or industry, in related careers in which first-hand research experience is an asset, or as a prelude to more advanced degrees.

Research interests in the Department of Biochemistry, Microbiology & Immunology are diverse, allowing graduate students to choose from a broad spectrum of topics when picking a research lab. Regular interactions between students and faculty are facilitated with weekly departmental and student seminars, formal collaborations between research groups and a cooperative work environment that promotes discussion of research projects between students of different labs.

## Admission Requirements

Admission to these programs is contingent upon admission to the Graduate School (<http://bulletins.wayne.edu/graduate/general-information/admission/>) and the graduate programs of the School of Medicine (<http://bulletins.wayne.edu/graduate/school-medicine/programs/>).

The master's degree in Biochemistry and Molecular Biology is offered under Plan A only. Plan A is defined as a minimum of 30 credits, eight of which must be from thesis research, and requires the completion of an approved research thesis. Full-time thesis research can begin in the second semester with advisor approval.

M.S. candidates with less than 16 credit hours of course credits in BMB may transfer to the Ph.D. program with the approval of the Graduate Committee. Such candidates must then take and pass the Ph.D. written qualifying exam. M.S. candidates with more than 16 hours must complete the M.S. degree and reapply to the Ph.D. program if they wish.

All coursework must be completed in accordance with the regulations of the Graduate School (<https://bulletins.wayne.edu/graduate/general-information/degree-certificate-requirements/>) and the School of Medicine (<https://bulletins.wayne.edu/graduate/school-medicine/programs/>). A minimum g.p.a. of 3.0 must be maintained throughout the program, 3.5 is required to maintain the scholarship. Students should strive to be 1st or 2nd author on one peer reviewed publication to validate the quality of their research and to compete effectively in their post-graduate careers.

Successful completion of an original research project is an essential part of the M.S. program and requires a full-time commitment in the summer following Year 1 formal coursework and in Year 2. The applicant for this degree should therefore select an advisor and project as early as possible in the second semester of the program. Option 2 students need this and a Research Plan form before registering for Winter semester. "Plan of Work" and "Petition for Candidacy Degree" forms should be filed by the end of the second semester with the Office of Graduate Studies. Master's students will hear oral presentations by Faculty who are accepting Master's students in the early portion of BMB 7890. They should select an adviser and committee to initiate research in BMB 7996 Winter and Summer of Year 1, during which time they define their thesis projects.

Applicants for the Master of Science degree must complete the following coursework, including at least eight credits of master's research.

Required coursework includes the following:

Code	Title	Credits
BIO 6000	Molecular Cell Biology I	3
BMB 7010	General Biochemistry Lecture	4
BMB 7030	Core Concepts in Technologies in Biochemistry and Molecular Biology	4
BMB 7320	Protein Structure and Function	3
BMB 7330	Advanced Molecular Biology	2
or BMB 7360	Advanced Structural Biology	
BMB 7890	Journal Club (First Year)	1
BMB 7890	Journal Club (Second Year)	1
BMB 7996	Research (First Year)	2
BMB 7996	Research (Second Year)	6
BMB 8999	Master's Thesis Research and Direction	8
<b>Total Credits</b>		<b>34</b>

The completion of an original research project and the preparation and presentation of a thesis are the primary activities of the second year.

**Academic Scholarship:** All course work must be completed in accordance with the regulations of the Graduate School (<http://bulletins.wayne.edu/graduate/general-information/academic-regulations/>) and the School of Medicine (<http://bulletins.wayne.edu/graduate/school-medicine/programs/>) governing graduate scholarship and degrees.