BIOCHEMISTRY AND MOLECULAR BIOLOGY (BACHELOR OF SCIENCE, B.S.)

Overview

The Biochemistry and Molecular Biology degree is a combined degree offered through the Chemistry and Biology Departments. A Bachelor of Science in Biochemistry and Molecular Biology prepares graduates for entry-level work in areas such as life science industry or entry into graduate schools. It is also ideal for students who plan to pursue advanced degrees in graduate, medical, dental or pharmacy schools. Students have the option to earn this degree with American Chemical Society (ACS) certification, allowing them to graduate college with professional certification.

Our American Chemical Society approved option is the most comprehensive program available. If you are working toward an advanced degree in chemistry, biochemistry or planning a career in the chemical industry, Missouri Western's ACS track in Biochemistry and Molecular Biology is strongly recommended.

Requirements

Students who choose this bachelor degree program will have no more than 6 years from admission or subsequent declaration to meet the requirements listed below. If certification, accreditation or statutory requirements change and additional requirements become effective during this time, the new requirements take precedence.

The Bachelor of Science Major in Biochemistry and Molecular Biology is an interdisciplinary program offered jointly by the departments of Biology and Chemistry. It is designed to prepare students for graduate level education or careers in biochemistry, cell and molecular biology, and related biotechnology fields.

Code	Title	Credit Hours
General Studies		**42**
Students must complete General Studies courses (https://catalog.missouriwestern.edu/undergraduate/university-information/academic-standards-regulations/baccalaureate-degree/#bachelor-general-studies) [1]		
Major Requirements		**63**
BIO 105	Principles of Organismal Biology	4
BIO 106	Principles of Cell Biology	4
BIO 205	Genetics	4
BIO 225	Ecology	4
BIO 310	Molecular Cell Biology	4
or BIO 430	Molecular Basis of Disease	
CHE 111	General Chemistry I	5
CHE 120	General Chemistry II with Qualitative Analysis	5
CHE 310	Organic Chemistry I	3
CHE 311	Organic Chemistry Laboratory I	2
CHE 321	Quantitative Analysis	4
CHE 340	Foundations of Physical Chemistry	4
CHE 370	Biochemistry I	4
CHE 470	Biochemistry II	3
MAT 167	Calculus with Analytic Geometry I	5
PHY 110	College Physics I	4
PHY 111	College Physics II	4
Select one of the following:		
Biochemistry and Molecular Biology (No Certification)		12
Biochemistry and Molecular Biology (ACS Certification)		19

[1] Courses in general studies may also be required within the major. While the course(s) may satisfy both requirements, the credit hours will count only one time in the overall hours earned.

Biochemistry and Molecular Biology (No Certification) (p.)
Biochemistry and Molecular Biology (ACS Certification) (p.)

Biochemistry and Molecular Biology (No Certification)

Code	Title	Credit Hours
Select a minimum of twelve credit hours from Biology or Chemistry courses numbered 300 or higher		12

Biochemistry and Molecular Biology (ACS Certification)

Students are eligible to receive certification in the area of Biochemistry from the American Chemical Society (ACS) if the following course work is completed.

Code	Title	Credit Hours
Certification Requirements		
CHE 312 & CHE 313	Organic Chemistry II and Organic Chemistry Laboratory II	5
CHE 326	Instrumental Analysis	4
CHE 441	Advanced Inorganic Chemistry	3
CHE 480	Advanced Physical Chemistry	4
MAT 177	Calculus with Analytic Geometry II	3
or MAT 287	Multivariable Calculus	
Total Credit Hours		**19**

Program Graduation Requirements

1. Earn an overall GPA of at least 2.0 and a major GPA of at least 2.0.

University Graduation Requirements

1. Earn a minimum of 120 credit hours (100 level and higher, maximum of 6 continuing education credit hours applicable).
2. Earn a minimum of 30 credit hours in upper-division courses. Lower-division transfer courses accepted as meeting upper-division departmental course requirements cannot be used to fulfill this requirement.
3. Earn 30 of the last 45 credit hours at MWSU in institutional coursework (exclusive of credit by examination).
4. Participate in required departmental and campus wide assessments.
5. Fulfill the Missouri Constitution requirement.
6. Successfully pass the Missouri Higher Education Civics Achievement exam.