

Biochemistry and Molecular Biology, BS

Requirements

The Bachelor of Science with a major in biochemistry and molecular biology requires a minimum of 120 s.h., including 70 s.h. of work for the major. Students must maintain a grade-point average (GPA) of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

All students majoring in biochemistry and molecular biology are initially placed in the Bachelor of Arts degree program. Students in good academic standing can switch to the Bachelor of Science degree program after completing one semester of organic chemistry (CHEM:2230 Organic Chemistry I for Majors or CHEM:2210 Organic Chemistry I). Students who wish to change their degree program to the Bachelor of Science should do so by sending an email from their UI email account to clas-undergrad@uiowa.edu.

The biochemistry and molecular biology major for the Bachelor of Science degree is intended primarily for students planning careers in research. The BS program prepares students to pursue graduate degrees, such as an MS, PhD, or a combined MD/PhD program, or to work as research technicians. The BS program requires 12-14 s.h. more credit in science and laboratory electives than the BA program does.

Qualified students may graduate with honors in the biochemistry and molecular biology major; see "Honors in the Major" under Honors [p.] in this section of the catalog.

The BS with a major in biochemistry and molecular biology requires the following coursework.

Requirements	Hours
Common Requirements	49
Additional Requirements	21

Common Requirements

Students complete the following during their first three years.

Course #	Title	Hours
BMB:3120 & BMB:3130	Biochemistry and Molecular Biology I-II	6
BMB:3140	Experimental Biochemistry	2
BIOL:1411- BIOL:1412	Foundations of Biology - Diversity of Form and Function	8
CHEM:1110 & CHEM:1120	Principles of Chemistry I-II	8
CHEM:2210 or CHEM:2230	Organic Chemistry I Organic Chemistry I for Majors	3
CHEM:2220 or CHEM:2240	Organic Chemistry II Organic Chemistry II for Majors	3
CHEM:2410 or CHEM:2420	Organic Chemistry Laboratory Organic Chemistry Laboratory for Majors	3
MATH:1850	Calculus I	4

or MATH:1550	Engineering Mathematics I: Single Variable Calculus	
or MATH:1460	Calculus for the Biological Sciences	
MATH:1860	Calculus II	4
or MATH:1560	Engineering Mathematics II: Multivariable Calculus	
or STAT:3510	Biostatistics	
or BIOS:4120	Introduction to Biostatistics	
PHYS:1511	College Physics I	4
or PHYS:1611	Introductory Physics I	
PHYS:1512	College Physics II	4
or PHYS:1612	Introductory Physics II	

If students take PHYS:1612 Introductory Physics II, they must take the course with the lab component.

Additional Requirements

In addition to the common requirements listed above, students must complete the following.

Course #	Title	Hours
This course:		
BMB:4240	Biophysics and Advanced Biochemistry	3
And one of these:		
CHEM:4430	Principles of Physical Chemistry	3
CHEM:4431	Chemical Thermodynamics	3
CHEM:4432	Quantum Mechanics and Chemical Kinetics	3
One of these options:		
BMB:4999	Advanced Undergraduate Biochemistry Research	6
Advanced laboratory courses		6
And:		
Advanced science electives, approved by biochemistry and molecular biology advisor		9

Students are encouraged to begin research by taking BMB:3993 Undergraduate Biochemistry Research, which has no prerequisites. The course involves experience in an active biochemistry and molecular biology research lab, which must be arranged ahead of time with a supervising faculty member. Students may make arrangements directly with the faculty member, or they may request assistance from an undergraduate advisor. Credit earned in BMB:3993 does not count toward the major, but it does count toward the minimum of 120 s.h. required to graduate.

Before students register for BMB:4999 Advanced Undergraduate Biochemistry Research, they must have completed BMB:3120 Biochemistry and Molecular Biology I, BMB:3130 Biochemistry and Molecular Biology II, BMB:3140 Experimental Biochemistry, and BMB:3150 Development of Senior Research Project, with a grade of B-minus or higher in each course. Students also are required to have prior research experience, such as in BMB:3993 Undergraduate Biochemistry Research, URES:3994 Undergraduate Research and Creative Projects, or HONR:3994 Honors Research Practicum, and permission of the instructor. Students can only count 6 s.h. in BMB:4999 toward their requirements for the degree.

Teacher Licensure

Students interested in teaching in elementary and/or secondary schools should seek admission to the Teacher Education Program (TEP) in the College of Education.

To qualify for licensure in secondary teaching, students in the TEP complete a degree in education as well as a related College of Liberal Arts and Sciences degree. See Apply on the College of Education website for details on requirements and deadlines for applying to the College of Education and about TEP choices of majors leading to licensure.