

BIOCHEMISTRY AND MOLECULAR BIOLOGY: SECONDARY EDUCATION, BSAG

Requirements for Students Matriculating in or before Academic Year 2026-2027. Learn more about University Academic Regulation 3.1 (<https://catalog.okstate.edu/university-academic-regulations/#matriculation>).

Minimum Overall Grade Point Average: 2.00

Total Hours: 120

Code	Title	Hours
General Education Requirements		
<i>English Composition</i>		
See Academic Regulation 3.5 (https://catalog.okstate.edu/university-academic-regulations/#english-composition/)		
ENGL 1113	Composition I	3
or ENGL 1313	Critical Analysis and Writing I	
ENGL 1213	Composition II	3
or ENGL 1413	Critical Analysis and Writing II	
<i>American History & Government</i>		
Select one of the following:		3
HIST 1103	Survey of American History	
HIST 1483	American History to 1865 (H)	
HIST 1493	American History Since 1865 (DH)	
POLS 1113	American Government	3
<i>Quantitative Thought & Logical Reasoning (Q)</i>		
Select one course from the following:		3
STAT 2013	Elementary Statistics (Q)	
STAT 4013	Statistical Methods I (Q)	
Select one course from the following:		3
MATH 1813	Preparation for Calculus (Q)	
MATH 2144	Calculus I (Q)	
<i>Understanding Humanities-Human Heritage & Cultures (H)</i>		
Courses designated (H)		3
Courses designated (DH)		3
<i>Reasoning in the Natural Sciences (N)</i>		
CHEM 1314	Chemistry I (LN)	4
Select two hours of courses designated (N)		2
<i>Exploring Society & Human Behavior (S)</i>		
AGEC 1113	Introduction to Agricultural Economics (S)	3
<i>Global Cultural Competency (G)</i>		
Courses designated (G)		3
<i>Additional General Education</i>		
Additional general education credit hours (at least 4 hours) are required to meet the total 40-hour minimum. If courses carry more than one general education designation and can be used to meet multiple minimum general education designation hours above, more than 4 hours of additional general education will be required here to meet the 40-hour minimum.		

Courses designated (Q), (H), (N), (S), (D), (G), or (F).		4
Hours Subtotal		40
College/Departmental Requirements		
UNIV 1111	First Year Seminar (or other approved first year seminar course)	1
From two of the following groups, select one course:		6
<i>Group 1</i>		
PLNT 1213	Introduction to Plant and Soil Systems (N)	
HORT 1013	Principles of Horticultural Science (LN)	
NREM 1113	Elements of Forestry	
<i>Group 2</i>		
SOIL 1113	Land, Life and the Environment (N)	
SOIL 2124	Fundamentals of Soil Science (N)	
<i>Group 3</i>		
ANSI 1023 & ANSI 1021	Introduction to the Animal Sciences for NON-MAJORS and Introduction to the Animal Sciences Lab	
or ANSI 1124	Introduction to the Animal Sciences	
FDSC 1133	Fundamentals of Food Science	
ENTO 2993	Introduction to Entomology (LN)	
ENTO 3003	Livestock Entomology	
<i>Group 4</i>		
NREM 1014	Introduction to Natural History (LN)	
NREM 3013	Applied Ecology and Conservation	
ENVR 1113	Elements of Environmental Science (N)	
BIOC 2344	Chemistry and Applications of Biomolecules	
BIOC 3713	Biochemistry I	
LA 1013	Introduction to Landscape Architecture	
<i>Written and Oral Communication</i>		
Select one of the following:		3
AGCM 3103	Written Communications in Agricultural Sciences and Natural Resources	
BCOM 3113	Written Communication	
ENGL 3323	Technical Writing ²	
Select one of the following:		3
AGCM 3203	Oral Communications in Agricultural Sciences & Natural Resources (S) ³	
SPCH 2713	Introduction to Speech Communication (S) ³	
SPCH 3733	Elements of Persuasion (S) ³	
Hours Subtotal		13
Major Requirements		
Biochemistry Core		
BIOC 1990	Freshman Research in Biochemistry and Molecular Biology ⁴	1
BIOC 3723	Biochemistry and Molecular Biology Laboratory	3
BIOC 3813	Biochemistry II	3
CHEM 1515	Chemistry II (LN) ¹	5
CHEM 3053	Organic Chemistry I	3
CHEM 3112	Organic Chemistry Laboratory	2
CHEM 3153	Organic Chemistry II	3

MICR 2123	Introduction to Microbiology	3
MICR 2132	Introduction to Microbiology Laboratory	2
PHYS 1114 or PHYS 2014	College Physics I (LN) University Physics I (LN)	4
BIOL 1113 & BIOL 1111 or BIOL 1114	Introductory Biology (N) and Introductory Biology Laboratory (LN) Introductory Biology (LN)	4
BIOL 1604 or PBIO 1404	Animal Biology Plant Biology (LN)	4
Secondary Education Core		
Minimum GPA 2.50 with a minimum grade of "C" or "P" in each course		
SMED 1012	Inquiry Approaches to Teaching	2
SMED 3013	Knowing and Learning in K-12 Education	3
SMED 4611	Authentic Research in the Science Classroom	1
SMED 4613	Teaching the Nature of Science Through an Inquiry Approach	3
SMED 4713	Teaching and Learning Science in the Secondary School	3
CIED 3313	Field Experience in the Secondary Schools	3
CIED 4720	Internship in the Secondary Classroom	8
CIED 4724	Classroom Management in the Multicultural PK-12/ Secondary School	4
SPED 3202	Educating Exceptional Learners	2
Hours Subtotal		66
Electives		
Select 1 hour to complete required total for degree (3 hours may need to be foreign language)		1
Hours Subtotal		1
Total Hours		120

these changes do not result in semester credit hours being added or do not delay graduation.

- Degrees that follow this plan must be completed by the end of Summer 2032.

¹ College & Departmental requirements that may be used to meet General Education requirements.

² If ENGL 3323 Technical Writing is substituted for ENGL 1213 Composition above; hours in this block are reduced by 3.

³ If used as (S) course above, hours in this block are reduced by 3.

⁴ Total hours of BIOC 1990 Freshman Research in Biochemistry and Molecular Biology and BIOC 4990 Undergraduate Research may not exceed 10 hours.

Other Requirements

- A minimum of 40 semester credit hours and 100 grade points must be earned in courses numbered 3000 or above.
- A 2.00 GPA or higher in upper-division hours.

Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as