

BIOCHEMISTRY (PLEASE SEE NOTE BELOW)

Please Note: Admission to this program was discontinued effective October 5, 2021 and a teach-out plan is in place for current students.

Home Department: Natural Sciences

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Biochemistry Program Curriculum Requirements

Code	Title	Credit Hours
First Year Experience		
CILE-101	First Year Foundations	1
General Education		
COMM-101	Rhetoric & Writing	4
ECON-201	Economic Principles	4
LA-201	Sophomore Seminar: Exploring the Human Condition	4
LA-489	Sr. Seminar: Leadership, Ethics	4
Advanced Humanities Electives ¹		8
Advanced Social Science Electives ¹		8
Total Credit Hours		33

¹ Humanities and Social Science advanced electives must be selected from approved 300 and 400 level courses.

Code	Title	Credit Hours
Biochemistry Core		
Select one of the following:		4
CHEM-137 & CHEM-136	General Chemistry I and Principles of Chemistry Lab	
CHEM-135 & CHEM-136	Principles of Chemistry and Principles of Chemistry Lab	
CHEM-237 & CHEM-238	General Chemistry II and General Chemistry II Lab	4
CHEM-345 & CHEM-346	Organic Chemistry I and Organic Chemistry I Lab ²	6
CHEM-347 & CHEM-348	Organic Chemistry II and Organic Chemistry II Lab ²	6
CHEM-351 & CHEM-352	Biochemistry I and Biochemistry Lab	7
CHEM-361 & CHEM-362	Physical Chemistry I and Physical Chemistry I Lab	7
CHEM-373 & CHEM-374	Analytical Chemistry and Analytical Chemistry Lab	7

CHEM-437 & CHEM-438	Inorganic Chemistry and Inorganic Chemistry Lab	7
CHEM-451 & CHEM-452	Biochemistry II and Biochemistry II Lab	7
CHEM-491	CHEM Special Topics	2
CHEM-494	Research Methods	4
<i>Credit Hours Subtotal:</i>		<i>61</i>

Biology Core		
BIOL-141 & BIOL-142	General Biology and General Biology Lab	4
BIOL-241 & BIOL-242	Human Biology and Human Biology Lab	4
BIOL-351	Genetics	4
BIOL-381 & BIOL-382	Molecular Biology and Molecular Biology Lab	7

Mathematics		
MATH-101 or MATH-101X	Calculus I	4
Select one of the following:		
MATH-102	Calculus II	4
MATH-102X	Calculus II	
MATH-102H	Calculus II - Honors	
MATH-203 or MATH-203H	Multivariate Calculus	4
MATH-258	Probability and Statistics	4

Physics		
PHYS-114 & PHYS-115	Newtonian Mechanics and Newtonian Mechanics Laboratory	4
PHYS-224 & PHYS-225	Electricity and Magnetism and Electricity and Magnetism Laboratory	4
<i>Credit Hours Subtotal:</i>		<i>43</i>

Electives		
Technical Electives ³		12
Free Electives		8
<i>Credit Hours Subtotal:</i>		<i>20</i>

Undergraduate Thesis		
CILE-400	Culminating Undergraduate Experience: Thesis ⁴	4
Total Credit Hours		128

(Minimum) Total Credits Required for Program: 161⁵

² Alternatively an extended (X) section of this lecture course may be taken. Extended versions of courses offer additional hours with the instructor.

³ A technical elective may be any 300 or 400 level courses in BIOL, CE, CHEM, CHME, CS, EE, IME, ISYS, MATH, MECH, or PHYS that is not used to complete core degree requirements. MATH-204 and PHYS-224/PHYS-225 can also count as a technical elective. All other courses must be approved by the department head.

⁴ Students are automatically registered for CILE-400 in a co-op term when they reach Junior II status.

⁵ The minimum total number of credit hours required for graduation is 161; however, the total number of credit hours taken may exceed 161. All Applied Biology majors must meet the general educational

requirements and their program's requirements for a minor or concentration.

Biochemistry Major Representative Program

Course	Title	Credit Hours
Freshman I		
CILE-101	First Year Foundations	1
CHEM-137 or CHEM-135	General Chemistry I or Principles of Chemistry	3
CHEM-136	Principles of Chemistry Lab	1
MATH-101	Calculus I	4
COMM-101	Rhetoric & Writing	4
BIOL-141	General Biology	3
BIOL-142	General Biology Lab	1
Credit Hours		17
Freshman II		
CHEM-237	General Chemistry II	3
CHEM-238	General Chemistry II Lab	1
MATH-102	Calculus II	4
ECON-201	Economic Principles	4
BIOL-241	Human Biology	3
BIOL-242	Human Biology Lab	1
Credit Hours		16
Sophomore I		
CHEM-345	Organic Chemistry I	4
CHEM-346	Organic Chemistry I Lab	2
MATH-203	Multivariate Calculus	4
PHYS-114	Newtonian Mechanics	3
PHYS-115	Newtonian Mechanics Laboratory	1
LS-201	Sophomore Seminar: Exploring the Human Condition ¹	4
Credit Hours		18
Sophomore II		
CHEM-347	Organic Chemistry II	4
CHEM-348	Organic Chemistry II Lab	2
MATH-258	Probability and Statistics	4
PHYS-224	Electricity and Magnetism	3
PHYS-225	Electricity and Magnetism Laboratory	1
Adv. COMM, HUMN, or SSCI Elective		4
Credit Hours		18
Junior I		
CHEM-351	Biochemistry I	4
CHEM-352	Biochemistry Lab	3
CHEM-437	Inorganic Chemistry	4
CHEM-438	Inorganic Chemistry Lab	3
Adv. COMM, HUMN, or SSCI Elective		4
Credit Hours		18
Junior II		
BIOL-351	Genetics	4
CHEM-451	Biochemistry II	4

CHEM-452	Biochemistry II Lab	3
Advanced Chemistry Elective		2
Technical Elective		4
Credit Hours		17
Senior I		
CHEM-361	Physical Chemistry I	4
CHEM-362	Physical Chemistry I Lab	3
Technical Elective		4
Free Elective		4
Adv. COMM, HUMN, or SSCI Elective		4
Credit Hours		19
Senior II		
CHEM-373	Analytical Chemistry	4
CHEM-374	Analytical Chemistry Lab	3
BIOL-381	Molecular Biology	4
BIOL-382	Molecular Biology Lab	3
Technical Elective		4
Credit Hours		18
Senior III		
CHEM-494	Research Methods	4
LS-489	Senior Seminar: Leadership, Ethics, and Contemporary Issues	4
Adv. COMM, HUMN, or SSCI Elective		4
Free Elective		4
Credit Hours		16
Any Term		
CILE-400	Culminating Undergraduate Experience: Thesis	4
Credit Hours		4
Total Credit Hours		161

(Minimum) Total Credits Required for Program: 161⁴

¹ Humanities, Social Science, and Communications advanced electives must be selected from approved 300 and 400 level courses, including one Humanities course and one Social Science Course. Additionally, two of the three advanced electives must be writing intensive.

² Alternatively an extended (X) section of this lecture course may be taken. Extended versions of courses offer additional hours with the instructor.

³ A technical elective may be any 300 or 400 level courses in BIOL, CE, CHEM, CHME, CS, EE, IME, ISYS, MATH, MECH, or PHYS that is not used to complete core degree requirements. MATH-204 and PHYS-224/PHYS-225 can also count as a technical elective. All other courses must be approved by the department head.

⁴ The minimum total number of credit hours required for graduation is 161; however, the total number of credit hours taken may exceed 161. All Applied Biology majors must meet the general educational requirements and their program's requirements for a minor or concentration.