

APPLIED BIOLOGY (PLEASE SEE NOTE BELOW)

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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Applied Biology Program Curriculum Requirements

Code	Title	Credit Hours
First Year Experience		
CILE-101	First Year Foundations	1
General Education		
COMM-101	Rhetoric & Writing	4
	Social Science Elective (200 or higher)	4
LS-201	Sophomore Seminar: Exploring the Human Condition	4
LS-489	Senior Seminar: Leadership, Ethics, and Contemporary Issues	4
	Advanced Communications Elective ¹	4
	Advanced Humanities Elective ¹	4
	Advanced Social Science Elective ¹	4
	Advanced Communications, Humanities or Social Science Elective ¹	4
<i>Credit Hours Subtotal:</i>		33
Total Credit Hours		33

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

Code	Title	Credit Hours
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-311	Ecology	4
BIOL-321	Biological Techniques I	4
BIOL-331	Biological Techniques II	4
BIOL-351	Genetics	4
BIOL-361 & BIOL-362	Microbiology and Microbiology Lab	7

BIOL-381 & BIOL-382	Molecular Biology and Molecular Biology Lab	7
BIOL-441 & BIOL-442	Cellular Biology and Cellular Biology Lab	7
	Advanced Biology Elective and Lab	7
	Advanced Biology Elective	3
BIOL-494	Research Methods	4
Chemistry Core		
CHEM-137 & CHEM-136	General Chemistry I and Principles of Chemistry Lab	4
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	Organic Chemistry II ²	4
CHEM-351 & CHEM-352	Biochemistry I and Biochemistry Lab	7
<i>Credit Hours Subtotal:</i>		84
Mathematics		
MATH-101 or MATH-101X	Calculus I	4
Select one of the following:		
MATH-102	Calculus II	4
MATH-102X	Calculus II	4
MATH-102H	Calculus II - Honors	4
MATH-258	Probability and Statistics	4
Physics		
PHYS-114 & PHYS-115	Newtonian Mechanics and Newtonian Mechanics Laboratory	4
<i>Credit Hours Subtotal:</i>		16
Electives		
	Technical Electives ³	12
	Free Electives	12
<i>Credit Hours Subtotal:</i>		24
Culminating Undergraduate Experience		
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. Some 200 level classes can also count as technical electives but 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.

Applied Biology 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 or MATH-101X	Calculus I or 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 or MATH-102X	Calculus II or Calculus II	4
Social Science Elective (200 or higher)		4
BIOL-241	Human Biology	3
BIOL-242	Human Biology Lab	1
Credit Hours		16
Sophomore I		
BIOL-311	Ecology	4
BIOL-321	Biological Techniques I	4
PHYS-114	Newtonian Mechanics	3
PHYS-115	Newtonian Mechanics Laboratory	1
LS-201	Sophomore Seminar: Exploring the Human Condition	4
Credit Hours		16
Sophomore II		
BIOL-331	Biological Techniques II	4
BIOL-351	Genetics	4
MATH-258	Probability and Statistics	4
Adv. COMM, HUMN, or SSCI Elective		4
Credit Hours		16
Junior I		
CHEM-345	Organic Chemistry I	4
CHEM-346	Organic Chemistry I Lab	2
BIOL-361	Microbiology	4
BIOL-362	Microbiology Lab	3
Adv. COMM, HUMN, or SSCI Elective		4
Credit Hours		17
Junior II		
CHEM-347	Organic Chemistry II	4
BIOL-381	Molecular Biology	4
BIOL-382	Molecular Biology Lab	3

Free Elective		4
Technical Elective		4
Credit Hours		19
Senior I		
CHEM-351	Biochemistry I	4
CHEM-352	Biochemistry Lab	3
BIOL-441	Cellular Biology	4
BIOL-442	Cellular Biology Lab	3
Adv. COMM, HUMN, or SSCI Elective		4
Credit Hours		18
Senior II		
Advanced Biology Elective and Lab		7
Adv. COMM, HUMN, or SSCI Elective		4
Technical Elective		4
Free Elective		4
Credit Hours		19
Senior III		
BIOL-494	Research Methods	4
Advanced Biology Elective		3
LS-489	Senior Seminar: Leadership, Ethics, and Contemporary Issues	4
Technical Elective		4
Free Elective		4
Credit Hours		19
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.