

College of Science
Department of Biological Sciences
For Students Graduating in Calendar Year 2019
Bachelor of Science in Biological Sciences
Major: Biological Sciences
Option: Biomedical Option

Curriculum for Liberal Education Requirements

I. Writing and Discourse (6 credits)

ENGL 1105 First-Year Writing (3) _____ ENGL 1106 First-Year Writing (3) _____

II. Ideas, Cultural Traditions and Values (6 credits)

_____ (3) _____ (3) _____

III. Society and Human Behavior (6 credits)

_____ (3) _____ (3) _____

IV. Scientific Reasoning and Discovery (8 Credits): Completed within Biological Sciences Major Required Courses

BIOL 1105 Principles of Biology^{1*} (3) _____ BIOL 1106 Principles of Biology^{1*} (3) _____
BIOL 1115 Principles of Biology Lab^{1*} (1) _____ BIOL 1116 Principles of Biology Lab^{1*} (1) _____

V. Quantitative and Symbolic Reasoning: Completed within Biological Sciences Major Required Courses

MATH 1025 Elementary Calculus* (3) _____ MATH 1026 Elementary Calculus* (3) _____

VI. Creativity and Aesthetic Experience (3 credits)

_____ (3) _____

VII. Critical Issues in a Global Context (3 Credits)

_____ (3) _____

Core Major Requirements (17 credits)

BIOL 2004 Genetics (3) _____ BIOL 2614 General Microbiology Lab (2) _____
BIOL 2104 Cell & Molecular Biology* (3) _____ BIOL 2804 Ecology (3) _____
BIOL 2604 General Microbiology (3) _____ BIOL 2704 Evolutionary Biology (3) _____

Biomedical Option Electives (18-25 credits)²

1. Students must complete two Basic Biomedical Elective courses (6 credits):

BIOL 3774 Molecular Biology (3) _____ BIOL 4824 Bioinformatics Methods (3) _____
BIOL 4104 Developmental Biology (3) _____ BIOL 4844 Proteomics Biol Mass Spec (3) _____
BIOL 4134 Evolutionary Genetics (3) _____ BIOL 4884 Cell Biology (3) _____
BCHM 3114 Biochem for Biotech (3) _____

2. Students must complete two Biomedical Systems Elective courses (6 credits):

BIOL 3134 Human Genetics (3) _____ NEUR 2025 Intro to Neuroscience (3) _____
BIOL 3404 Intro Animal Physiology (3) _____ NEUR 2026 Intro to Neuroscience (3) _____
BIOL 3514 Intro to Histology (3) _____ PSYC 2064 Nerv Systems and Behavior[#] (3) _____
BIOL 4554 Neurochemical Regulation (3) _____ PSYC 4064 Physiological Psychology[#] (3) _____
BIOL 4704 Immunology (3) _____

3. Students must complete two Disease Systems Elective courses (6-7 credits):

BIOL 3254	Med and Vet Entomology	(3)	_____	BIOL 4674	Pathogenic Bacteriology	(3)	_____
BIOL 3454	Introductory Parasitology	(4)	_____	BIOL 4734	Inflammation Biology	(3)	_____
BIOL 4564	Infectious Disease Ecology	(3)	_____	BIOL 4854	Cytogenetics	(3)	_____
BIOL 4664	Virology	(3)	_____	BIOL 4874	Cancer Biology	(3)	_____

4. Students must complete two laboratory courses from the following list (0-7 credits³):

BIOL 3104	Cell & Mol Biology Lab	(1)	_____	BIOL 4714	Immunology Lab	(1)	_____
BIOL 3264	Med and Vet Ent Lab	(1)	_____	BIOL 4724	Pathogenic Bacteriology Lab	(2)	_____
BIOL 3454	Introductory Parasitology	(4)	_____	BIOL 4824	Bioinformatics Methods	(3)	_____
BIOL 3514	Intro to Histology	(3)	_____	NEUR 2035	Neuroscience Lab	(1)	_____

Core Science and Math Requirements

BIOL 1004	Biology Orientation Seminar ⁴	(1)	_____				
CHEM 1035	General Chem ^{1*}	(3)	_____	CHEM 1036	General Chem ^{1*}	(3)	_____
CHEM 1045	General Chem Lab*	(1)	_____	CHEM 1046	General Chem Lab*	(1)	_____
CHEM 2535	Organic Chem*	(3)	_____	CHEM 2536	Organic Chem*	(3)	_____
CHEM 2545	Organic Chem Lab*	(1)	_____	CHEM 2546	Organic Chem Lab*	(1)	_____
PHYS 2205	General Physics*	(3)	_____	PHYS 2206	General Physics*	(3)	_____
PHYS 2215	General Physics Lab*	(1)	_____	PHYS 2216	General Physics Lab*	(1)	_____
STAT 3615	Biological Statistics	(3)	_____				

Core Major Requirements

Biomedical Options Electives

Core Science and Math Requirements

Total Curriculum for Liberal Education Requirements:

Total Free Electives

Total Credits Required for Graduation

17 Credits

18-25 Credits

28 Credits

38 Credits

12-19 Credits

120 Credits

¹ Students must earn a grade of "C" or better in BIOL 1105, 1106, 1115, 1116, CHEM 1035, CHEM 1036, or the equivalent. Only two attempts, including course withdrawals with grade of "W", are allowed for each course.

² Biomedical Option students also enrolled in the Microbiology major or degree may count a maximum of 3 courses from the following courses as Biomedical Option electives: BIOL 3774, 3454, 4664, 4674, 4704, 4734, 4824, BCHM 3114.

³ Courses used to complete the laboratory requirement may also count as Biomedical Option electives (sections 1-3).

⁴ BIOL 1004 is required but will not be used to calculate in-major GPA.

[#]Has prerequisite not listed elsewhere on checksheet. PSYC 2064 requires PSYC 1004, and PSYC 4064 requires PSYC 1004 and 2094.

All BIOL courses (except 1004), any course taken to fulfill Biomedical Option elective credit, and all required CHEM, MATH, PHYS and STAT courses will be used to calculate in-major GPA.

Students must have an in-major and overall GPA of 2.0 to graduate.

Three years of a single foreign language in high school is required to meet the College of Science Foreign Language Requirement or a student must:

- a. Take the equivalent of an 1106 foreign language at an accredited university or community college. (Note: A student who has not completed two (2) units of a single foreign language in high school must earn six (6) semester hours of college level credit in a foreign language (i.e., both 1105 and 1106). These six hours are in addition to the 120 hours required for graduation.
- b. Credit by exam for a foreign language. The credit by exam option is available only to students who have gained knowledge of a foreign language without the benefit of formal training.
- c. Students whose native language is not English may be exempted from the foreign language through demonstrating satisfactory knowledge of the foreign language as prescribed by the Department of Foreign Languages. (No credit will be awarded)

*Acceptable Substitutions

BIOL 1105: BIOL 1005 General Biology
BIOL 1106: BIOL 1006 General Biology
BIOL 1115: BIOL 1015 General Biology Lab OR BIOL 1125 Biol Principles Lab
BIOL 1116: BIOL 1016 General Biology Lab OR BIOL 1126 Biol Principles Lab
BIOL 1105, 1115: BIOL 1205H Honors Biology (4)
BIOL 1106, 1116: BIOL 1206H Honors Biology (4)
BIOL 2104: BIOL 2134 Cell Function and Differentiation
BIOL 2604: BIOL 2604H Honors General Microbiology
BIOL 2704: BIOL 2704H Honors Evolutionary Biology
BIOL 2804: BIOL 2804H Honors Ecology
CHEM 1035-1036: CHEM 1055 -1056 General Chemistry for Majors
CHEM 1045-1046: CHEM 1065-1066 General Chemistry Lab for Majors
CHEM 2535-2536: CHEM 2565-2566 Principles of Organic Chemistry
CHEM 2545-2546: CHEM 2555-2556 Organic Synthesis and Techniques Lab
PHYS 2205, 2215: PHYS 2305 Foundations of Physics I
PHYS 2206, 2216: PHYS 2306 Foundations of Physics I
MATH 1025: MATH 1016 Elem Calculus w/ Trig OR MATH 1205 Calculus OR MATH 1225 Calculus of a Single Variable OR
MATH 1525 Elem Calculus w/Matrices
MATH 1026: MATH 2015 Elem Calculus w/ Trig OR MATH 1206 Calculus OR MATH 1226 Calculus of a Single Variable OR
MATH 1526 Elem Calculus w/Matrices

Cross-listed Courses on this Checksheet
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ALS/BIOL 4554: Neurochemical Regulation

Satisfactory Progress Toward Degree
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1. Students must earn a grade of "C" or better in BIOL 1105, 1106, 1115, 1116, CHEM 1035, CHEM 1036 or equivalent upon attempting 45 credit hours (including transfer credit, advance placement or IB credit, advance standing credit, credit by examination, courses taken P/F, and courses completed with a grade of "W"). Only two attempts are allowed for each course.

2. Students must achieve an overall GPA of 2.0 and in-major GPA of 2.2 upon attempting 45 credit hours (including transfer credit, advance placement or IB credit, advance standing credit, credit by examination, courses taken P/F, and courses completed with a grade of "W").
3. All BIOL courses except 1004, any course taken to fulfill Biological Sciences elective credit, and all required CHEM, MATH, PHYS, and STAT courses will be used to calculate in-major GPA.
4. These courses must be completed by the time the student has attempted 72 hours.
 - BIOL 1105, 1106, 1115, 1116 or Equivalent
 - CHEM 1035, 1036, 1045, 1046 or Equivalent
 - CHEM 2535, 2536, 2545, 2546 or Equivalent
 - MATH 1025, 1026 or Equivalent