APPROVED
COMMISSION ON UNDERGRADUATE STUDIES AND POLICIES

College of Science
Department of Biological Sciences
For Students Graduating in Calendar Year 2021
Bachelor of Science in Biological Sciences
Major: Biological Sciences
Option: Biomedical Option

Curriculum for Liberal Education Requirements (38 credits)

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 (6 credits): 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) _____

Degree Core Requirements (21 credits)

BIOL	2004	Genetics#	(3)	_____	BIOL	2134	Cell Function Differentiation#*	(3) _____
BIOL	2704	Evolutionary Biology#	(3)	_____	BIOL	2804	Ecology#	(3) _____
CHEM	1035	General Chemistry[1]*	(3)	_____	CHEM	1036	General Chemistry[1]*	(3) _____
STAT	3615	Biological Statistics#	(3)	_____				

Biological Sciences Major Requirements (19 credits)

1. Complete the following courses:

BIOL	1004	Biology Orientation Seminar[2]	(1)	_____				
CHEM	1045	General Chemistry Lab*	(1)	_____	CHEM	1046	General Chemistry Lab*	(1) _____
CHEM	2535	Organic Chemistry#*	(3)	_____	CHEM	2536	Organic Chemistry#*	(3) _____
CHEM	2545	Organic Chemistry Lab#*	(1)	_____	CHEM	2546	Organic Chemistry Lab#*	(1) _____
PHYS	2205	General Physics#*	(3)	_____	PHYS	2206	General Physics#*	(3) _____
PHYS	2215	General Physics Lab#*	(1)	_____	PHYS	2216	General Physics Lab#*	(1) _____

Biomedical Option Requirements (5 credits)

BIOL	2604	General Microbiology#	(3)	_____
BIOL	2614	General Microbiology Lab#	(2)	_____

Biomedical Option Electives (18-25 credits)[3]

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

BIOL	3774	Molecular Biology#	(3)	_____	BIOL	4844	Proteomics Mass Spectrometry#	(3)	_____
BIOL	4104	Developmental Biology#	(3)	_____	BIOL	4884	Cell Biology#	(3)	_____
BIOL	4134	Evolutionary Genetics#	(3)	_____	BIOL	4994	Undergraduate Research (A-F)[4]	(3)	_____
BIOL	4824	Bioinformatics Methods#	(3)	_____	BCHM	3114	Biochem for Biotech#	(3)	_____

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

BIOL	1054	Human Biol: Cncpts Curr Issues	(3)	_____	BIOL	4994	Undergraduate Research (A-F)[4]	(3)	_____
BIOL	3134	Human Genetics#	(3)	_____	NEUR	2025	Intro to Neuroscience#	(3)	_____
BIOL	3404	Introductory Animal Physiology#	(3)	_____	NEUR	2026	Intro to Neuroscience#	(3)	_____
BIOL	3514	Introduction to Histology#	(3)	_____	PSYC	2064	Intro Neuroscience of 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	1024	Cancer Causes Treatment Costs	(3)	_____	BIOL	4674	Pathogenic Bacteriology#	(3)	_____
BIOL	3254	Med and Vet Entomology#	(3)	_____	BIOL	4734	Inflammation Biology#	(3)	_____
BIOL	3454	Introductory Parasitology#	(4)	_____	BIOL	4854	Cytogenetics#	(3)	_____
BIOL	4564	Infectious Disease Ecology#	(3)	_____	BIOL	4874	Cancer Biology#	(3)	_____
BIOL	4664	Virology#	(3)	_____					

4. Students must complete two laboratory courses from the following list (0-7 credits[5]):

BIOL	3104	Cell Molecular Biol Laboratory#	(1)	_____	BIOL	4714	Immunology Laboratory#	(1)	_____
BIOL	3264	Med & Vet Entomology Lab#	(1)	_____	BIOL	4724	Pathogenic Bacteriology Lab#	(2)	_____
BIOL	3454	Introductory Parasitology#	(4)	_____	BIOL	4824	Bioinformatics Methods#	(3)	_____
BIOL	3514	Introduction to Histology#	(3)	_____	NEUR	2035	Neuroscience Laboratory#	(1)	_____

Degree / Major Requirements	**21 Credits**
Biological Sciences Major Requirements	**19 Credits**
Biomedical Option Requirements	**5 Credits**
Biomedical Option Electives	**18-25 Credits**
Total Curriculum for Liberal Education Requirements:	**38 Credits**
Total Free Electives	**12-19 Credits**
Total Credits Required for Graduation	**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] BIOL 1004 is required but will not be used to calculate in-major GPA.

[3] 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.

[4] A 3-credit BIOL 4994 experience taken for grade of A-F may count EITHER toward Biomedical elective section 1 OR 2.

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

#Some courses listed on this checksheet may have prerequisites; please consult the University Course Catalog or check with your advisor.

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.

***Acceptable Substitutions**

BIOL 1105: BIOL 1005 General Biology
BIOL 1106: BIOL 1006 General Biology
BIOL 1115: BIOL 1015 General Biology Lab OR BIOL 1125 Biological Principles Lab
BIOL 1116: BIOL 1016 General Biology Lab OR BIOL 1126 Biological Principles Lab
BIOL 1105, 1115: BIOL 1205H Honors Biology (4)
BIOL 1106, 1116: BIOL 1206H Honors Biology (4)
BIOL 2134: BIOL 2104 Cell & Molecular Biology
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

NEUR 2025-2026: APSC 2025-2026 Introduction to Neuroscience

Cross-listed Courses on this Checksheet

ALS/BIOL 4554: Neurochemical Regulation
ENT/BIOL 3254: Med and Vet Entomology
ENT/BIOL 3264: Med and Vet Entomology

Satisfactory Progress Toward Degree

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-maior 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
   MATH 1025, 1026 or Equivalent

College of Science Foreign Language Requirement:

Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.