



Bachelor of Science in Natural Sciences

Major: Biochemistry

2018-2019 Sample 4-Year Plan

Total Degree Requirements: 120 credits

Student _____ Student ID# _____ Student Phone # _____

Advisor _____ Minimum GPA 2.0 Minor/Career Interest(s) _____

Students are not limited to this plan; it is meant to be used as a guide for planning purposes in consultation with your advisor. The sample schedule is one possible path to completing your degree within four years. For official program requirements, please refer to the [Undergraduate Catalog](#).

First Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 119	First Year Seminar		1	F	
CHEM 115-115L	Atomic and Molecular Structure and Lab (SGR #6)		4	F	
BIOL 151-151L	General Biology I and Lab (SGR #6)		4	F	
ENGL 101	Composition I (SGR #1)	p. Placement	3		
MATH 123	Calculus I (SGR #5)	p. Placement	4		
Total Credit Hours			16		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 127-127L	Structure and Function of Organic Molecules and Lab	p. CHEM 115-115L	4	S	
AHSS 111	Introduction to Global Citizenship and Diversity		3	F, S	
BIOL 153-153L	General Biology II and Lab	p. BIOL 151-151L	4	S	
MATH 125	Calculus II	p. MATH 123	4		
Total Credit Hours			15		

Second Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 229-229L	Transformations of Organic Molecules and Lab	p. CHEM 127-127L	4	F	
CHEM 237	Intermediate Lab Investigations	p. CHEM 229-229L	1	F	
Advanced Biological Science Elective		Choose from list below	3		
ENGL 201	Composition II (SGR #1)	p. ENGL 101	3		
SGR #4	Arts and Humanities/Diversity	SGR #4 satisfied by coursework from 2 different disciplines or 2 courses from one modern language sequence.	3-4		
Total Credit Hours			14-15		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 236	Equilibrium and Energy in Molecular Systems	p. MATH 123 and CHEM 229-229L	2	S	
CHEM 237	Intermediate Lab Investigations	p. CHEM 229-229L	2	S	
CHEM 360	Chemistry of Biological Macromolecules		3	S	
SGR #3	Social Science/Diversity	SGR#3 satisfied by coursework from 2 different disciplines.	3		
SPCM 101	Fundamentals of Speech (SGR #2)		3		
STAT 381	Introduction to Probability and Statistics	p. MATH 125	3		
Total Credit Hours			16		



Third Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 361	Chemistry of Biological Macromolecules Laboratory	p. CHEM 360	1	F	
Advanced Biological Science Elective		Choose from list below	3		
Minor/2 nd Major Course			3		
PHYS 211-211L	University Physics I and Lab	p. MATH 123	4	F, S	
SGR #4	Humanities and Arts/Diversity	SGR #4 satisfied by coursework from 2 different disciplines or 2 courses from one modern language sequence.	3-4		
Total Credit Hours			14-15		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 465	Biochemistry II	CHEM 360 or CHEM 464	3	S	
CHEM 498	Undergraduate Research/Scholarship	Capstone	3	S	
Advanced Biological Science Electives		Choose from list below	3		
Advanced Chemistry Elective		Choose from list below	3		
PHYS 213-213L	University Physics II and Lab	p. PHYS 211-211L	4	F, S	
Total Credit Hours			16		

Fourth Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 448-448L	Biophysical Chemistry and Lab	p. MATH 125, PHYS 211-211L, CHEM 360 or CHEM 464	4	F	
Advanced Chemistry Elective		Choose from list below	3		
Minor/2 nd Major Course			6		
Total Credit Hours			13		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
Advanced Chemistry Elective		Choose from list below	3		
Minor/2 nd Major Course			9		
SGR #3	Social Science/Diversity	SGR #3 satisfied by coursework from 2 different disciplines.	3		
Total Credit Hours			15		

Comments/Notes

Students from all academic majors can pursue graduation with Fishback Honors College distinction. View the [Honors program requirements](#).

Advanced Chemistry Electives (9 credits)

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 329	Organic Chemistry III	p. CHEM 229-229L or CHEM 328-328L	2	S (even)	
CHEM 329L	Organic Chemistry Lab III	p. CHEM 229-229L or CHEM 328-328L	2	S (even)	
CHEM 332-332L	Analytical Chemistry I and Lab	p. CHEM 127-127L or CHEM 114-114L	4	F	
CHEM 345	Quantum Mechanics of Chemical Systems	p. CHEM 343, MATH 125, and PHYS 213	2	F (odd)	
CHEM 347	Chemical Kinetics	p. CHEM 343 and PHYS 213	2	F (even)	
CHEM 432	Analytical Chemistry II	p. CHEM 332-332L	2	S (odd)	
CHEM 433	Bioanalytical Chemistry	p. CHEM 332-332L and CHEM 360 or CHEM 464	2	S (even)	
CHEM 452-452L	Inorganic Chemistry and Lab	p. CHEM 332-332L	4	F (even)	
CHEM 482	Environmental Chemistry	p. CHEM 127-127L or CHEM 326-326L	3	F (odd)	
CHEM 484	Chemical Toxicology	p. CHEM 360 or CHEM 464	3	F (even)	

Information Subject to Change. This is not a contract.

p. = Course Prerequisite
Semester: F = Fall, S = Spring, SU = Summer



Advanced Biological Science Electives (9 credits)

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
BIOL 325-325L	Physiology and Lab	p. Biology 221-221L and 8 credits of CHEM	4		
BIOL 371	Genetics	p. BIOL 151-151L	3		
BIOL 373	Evolution	p. BIOL 151-151L	3		
BIOL 453	Advanced Genetics	p. BIOL 202, 204, or 371	3		
BIOL 466	Environmental Toxicology and Contaminants	p. BIOL 464	3		
BIOL 483-483L	Developmental Biology and Lab	p. BIOL 151-151L	4		
BOT 327-327L	Plant Physiology and Lab	p. BIOL. 151-151L	4		
MICR 231-231L	General Microbiology and Lab	p. CHEM 106 or 112	4		
MICR 332	Microbial Physiology	p. MICR 231/231L or MICR 233/233L	2		
MICR 332L	Microbial Physiology Lab		2		
MICR 433	Medical Microbiology	p. CHEM 106, MICR 231-231L or MICR 233-233L	3		
MICR 436	Molecular and Microbial Genetics	p. BIOL 204 or 371	4		
MICR 438L	Techniques in Molecular Biology Lab	p. MICR 436 or Co-Requisite	2		

As part of the Department of Chemistry and Biochemistry, students in this program must complete:

- a minimum of 33 upper division credits (300-400 level courses)
- a capstone course in the major (CHEM 498)
- a designated diversity, equity, and inclusion course – AHSS 111 (or AIS 211 for teaching specialization students only)
- minor, second major, or teaching specialization
- a grade of “C” or better is required in all courses required for the major.