

# Biology (Biotechnology Concentration) Degree Planning Guide



Students must complete a minimum of 42 credits under the BIOL or SUST prefix to earn a degree. Students must complete all core classes (22-27 credits) and six courses from at least **three** of the upper level baskets (3 must be 300 level or higher with a minimum of 18 credits): Students choosing an emphasis shall select **4 courses from one basket and 2 courses from at least two** of the other baskets.

**In order to graduate 128 credit hours must be completed. Last 30 credit hours must be completed in residency.**

*This is an unofficial degree planning sheet. It is subject to change.*

## SUGGESTED COURSES FOR BIOTECHNOLOGY CONCENTRATION

Core plus four courses from the Molecular Biology and Microbiology Basket and two courses from one or more baskets. CHEM 320 and one other CHEM course 300 or higher.

## BIOLOGY CORE REQUIREMENTS: 22 - 27 CREDITS

BIOL 117 General Biology I (4)  
BIOL 260 General Genetics (4) @  
SCI 498-Advanced Topics (2) S or BIOL  
401 Research 1 (3) @ or SUST 499 (3) for  
Sustainability conc or BIOL 499 (3) for Applied  
Microbiology conc.

BIOL 118 General Biology II (4)  
BIOL 270 Evolution (4) S #  
BIOL 115 - Intro to Human Anatomy and  
Physiology (4)

### OR

BIOL 101 and BIOL 102 (8) - Anatomy and  
Physiology 1 and 2  
(101) and S (102)

## UPPER LEVEL BASKETS: MINIMUM 18 CREDITS

### Sustainability & Environmental Stewardship

SUST 101: Intro to Sustainability (3)  
SUST 201: Environmental Science and Health (3)  
SUST 150: Sustainability Exploration  
Seminar (3) S  
SUST 350: Sustainability Expedition S  
SUST 375: Strategies in Sustainability (3) F

### Ecology

BIOL 216 Plants & People (4) S \*  
BIOL 231 Conservation Biology (3)F\*@  
BIOL 314 Botany (4) S\* ^  
BIOL 352 General Ecology (4) F\* \$ or ^  
BIOL 381 Ornithology (4) S\* ^  
BIOL 304 Zoology (3) F\* #

### Molecular & Microbiology

BIOL 316 General Microbiology (4) #  
BIOL 390 Biotechnology (4) F #  
BIOL 391 Molecular Genetics (4) S\* \$  
BIOL 416 Microbial Genetics (4) F\*&  
BIOL 418 Applied Microbiology (4) S\*&

### Anatomy & Physiology

BIOL 220 Exercise Science (3) @\*  
BIOL 303 Comparative Vertebrate Anatomy (4)  
F\* ^  
BIOL 350 Intro to Human Anatomy (4) S\* (\*)  
or >  
BIOL 351 Cell Biology (4) S #  
BIOL 354 Immunology (3) S\*&  
BIOL 394 Advanced Physiology (3) F @ or >  
BIOL 395 Pathophysiology (3) S !\*

## NON-BIOLOGY SCIENCE AND MATH REQUIREMENTS: MINIMUM 30 CREDITS

MATH 151 Calculus I (4) F (recommended) OR  
MATH 125 College Algebra & Trigonometry (3)  
F/S

CHEM 103 General Chemistry I (4)  
CHEM 104 General Chemistry II (4)  
CHEM 203 Organic Chemistry I (4)  
CHEM 204 Organic Chemistry II (4)

MATH 141 Elementary Stats (3)  
F/S OR MATH 420 (3) Statistics for Sci Research  
OR PSYC 341 Understanding Statistical  
Inference

PHYS 153 Calculus-Based Physics I (4) S  
(recommended) OR PHYS 103 Gen. Physics I  
(4) F

PHYS 154 Calculus-Based Physics II (4) S

## GENERAL EDUCATION: 33 CREDITS

### I. Skills/Processes for Literacy (3 courses)

A. INTD 101 University Seminar  
B. ENGL 101 Composition: Theme Writing  
C. ENGL 104 Composition: The Essay

### II. Humanities (5 courses)

A. Fine Arts (1 course): Art Music, Performance  
B. Literature/Language (1 course): ENGL or  
Foreign Language  
C. Philosophy (1 course)  
D. Humanities Electives (2 courses)  
1. HUM 101/301 or HIST 131/331  
2. One additional elective from ENGL, The  
Arts/Aesthetics, Foreign Language, HUM,  
PHIL, REL

### III. Social Science (3 courses)

A. American History or Government  
B. Social Science Electives (2 courses from  
ECON, GEOG, HIST, PSCI, PSYC, SOC)

### IV. Natural Science/Quantitative Reasoning (met through major)

### V. General Education Electives (2 courses): From the College of Arts and Sciences

### ADDITIONAL COURSE CHOICES (not required and not part of the baskets)

CHEM 353 - Quantitative Analysis (4) F  
CHEM 320 Biochemistry (4) F  
CHEM 321 Biochemistry II (3) S  
BIOL 101 and/or 102 - Anatomy and Physiology  
ORGL 472-Understanding Organization Behavior (3)  
SCI 250 - Computational Science (3) see  
catalog for prereqs, S

**TIMING** - \* denotes that the course is offered  
every other year

**PREREQUISITES** F=Fall S=Spring  
@=117/118, # =260 > = 101/102  
& = 316 \$ = 270 != 394 (\*) = 115

### COREQUISITES

^ = 270 a = 394

### ALTERNATE COURSE OFFERINGS

**Fall Even Years:** Conservation Biology,  
Comparative Vertebrate Anatomy

**Fall Odd Years:** Ecology, Zoology, Physical  
Chemistry 1

**Spring Even Years:** Pathophys, Ex Science,  
Plants and People, Immunology, Ornithology  
Physical Chemistry 2, Inorganic Chemistry

**Spring Odd Years:** Intro to Gross, Molecular  
Genetics, Botany