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. ***2/21***

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. or MLS 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 310: Climate Science (3)
SUST 350: Sustainability Expedition S
SUST 375: Strategies in Sustainability (3) F

Molecular & Microbiology

BIOL 316 General Microbiology (4) #
BIOL 351 Cell Biology (4) #
BIOL 390 Biotechnology (4) F # BIOL 391 Molecular Genetics (4) S* $ BIOL 416 Microbial Genetics (4) F*& BIOL 418 Applied Microbiology (4) S*&

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* #

Anatomy & Physiology

BIOL 220 Exercise Science (3) @*
BIOL 303 Comparative Vertebrate Anatomy (4) F* ^
BIOL 350 Intro to Human Anatomy (4) S* (*) or >
BIOL 354 Immunology (3) *&
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) F (recommended) OR PHYS 103 Gen. Physics I (4) F
PHYS 154 Calculus-Based Physics II (4) S (recommended) OR PHYS 104 Gen. 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
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, 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

ALTERNATE COURSE OFFERINGS

Fall Even Years: Conservation Biology, Comparative Vertebrate Anatomy

Fall Odd Years: Ecology, Zoology, Physical Chemistry 1, Microbial Genetics

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

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

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

COREQUISITES
^ = 270 a = 394