

Biology

with laboratory and a biochemistry laboratory course among their elective courses.

Units

Major requirements 40

Biology Core (22)

Option requirements (18)

A. Molecular Biology (4)

GENET 142

B. Cell Structure

and Development (3-4)

Select one from the following list: BOT 133, 137; GENET 172, PHYAN 134, 158

C. Cellular/Molecular Physiology of Organisms/Organ Systems (3-5)

Select one from the following list: BOT 142; MICRO 161, 171, 181, 185; PHYAN 140, 160 (with lab 160L or without), 165; ZOOL 148

D. Molecular/Cellular

Techniques (3-4)

Select one from the following list: ECOL 174; GENET 171, 182

Note: A minimum of two laboratory experiences from B, C, and D are required.

E. Seminar (1)

GENET 170

F. Choose one additional course from above or any upper-division biology course, including independent study or research (0-4)

Additional requirements 37

1. CHEM 1A-B, 128A-B, 129A, 150 or 155 (21)

2. PHYS 2A-B (8)

3. MATH 70 or 75 (4)

4. MATH 101 or PSYCH 42 (4)

General Education 51

Electives and remaining degree requirements 5

(See *Degree Requirements*); may be used toward a dual major or minor.)

Total 124*

* See *Advising Note 1* on page 363.

Physiology and Anatomy Option

This degree program is designed to help students understand basic cellular phenomena and to analyze complex multicellular biological systems in preparation for medical, clinical, academic or research careers that require physiology as a foundation. The ultimate goal of physiology is to understand, in physical and chemical terms, the mechanisms that operate in living organisms. This option encompasses three major branches of physiology: cellular; systemic; and whole organism. Physiology is one of the central disciplines in biology and is of particular importance in the health professions and agriculture. This option offers excellent preprofessional preparation for medicine, dentistry, pharmacy, various careers requiring physiology, and for advanced graduate study. Students planning to enter professional and graduate programs should elect CHEM 1A-B and 128A-B rather than CHEM 3A and 8, and should consult an adviser about additional mathematics requirements as well.

Units

Major requirements 42

Biology Core (22)

Option requirements (20)

A. Select one course

from each of these three lines (9-12)

1. *Anatomy*: BOT 133; PHYAN 130, 134, 135; ZOOL 132, 141

2. *Molecular and Cellular Biology*:

BOT 137; GENET 172; MICRO 161; PHYAN 160 and 160L

3. *Organismal Physiology*: BOT 130; PHYAN 151

B. Select two additional

courses from the following list or from other courses listed in category A (6-8)

PHYAN 64 or 65, 140, 158, 163, 165, 172

C. Biological

Science Electives (5)

Select sufficient Biology Department courses to complete the option. Only one

elective course may be lower division.

Additional requirements 29-38

1. CHEM 3A or 1A-B, 8 or 128A-B, 109 or 129A, 150 or 155 (13-22)
2. PHYS 2A-B (8)
3. MATH 70 or 75 (4)
4. MATH 101 or PSYCH 42 (4)

General Education 51

Electives and remaining

degree requirements 2-11

(See *Degree Requirements*); may be used toward a dual major or minor.

Total 124*

* See *Advising Note 1* on page 363.

Ecology and Evolutionary Biology Option

This degree program is intended for students who wish to study the interrelationships between living things and their environments. This option has a strong field component that takes full advantage of the outstanding natural environments conveniently located near our campus. Students in this program gain an in-depth understanding of ecology and evolution, and acquire the skills to apply that understanding to important question in freshwater, marine, and terrestrial systems, in fisheries and wildlife management, or other branches of applied ecology. Students completing this option are well prepared for entry into a wide range of environmental careers with governmental field research agencies, in agriculture-related areas, environmental microbiology, environmental law and consulting firms, or for graduate programs leading to advanced degrees in ecology, management, and evolution. Students may obtain an emphasis in marine science by selecting electives offered at the Moss Landing Marine Laboratories. Faculty advising plays an important role in this program. Students must consult an adviser for help in selecting courses appropriate to their interests and career objectives.

Units

Major requirements 47

Biology Core (22)

Option requirements (25)

A. *Ecosystem Ecology*:

Select one course from the following (4)