

Biology Core

The biology core is required of all majors (see *Note 1* at end of Bachelor of Science description).

Units

BioSc 1A-B, 130, 140A-B, 180 21

In addition to the core, all majors must complete major and additional requirements in one of the four options described as follows:

Organismic and General Biology Option

This versatile option is designed for students who wish to explore the breadth of modern biology and is highly recommended for students preparing for teaching careers. It is equally useful as preparation for a large variety of careers including clinical laboratory technology, and for additional studies in graduate and professional schools. By carefully selecting courses, students may use this option to obtain strong preparation for careers as botanists, zoologists, entomologists, microbiologists; or they may select courses that produce a broadly based program that does not emphasize a particular taxonomic group. Advising is critically important in this option. Students must consult a faculty adviser for help in determining the appropriate selection of courses and special requirements for their chosen fields.

Units

Option requirements 42

Biology Core (21)

A. Select one course from each of the following five lines (16-20)

1. Bot 131, 132, 142, 144; Micro 140, 172, 181, 185; M Sci 131

2. Micro 171; Zool 120, 141, 148, 150, 171, 172, 174, 177; M Sci 112, 113, 114

3. Bot 133, 137; PhyAn 133, 135, 158; M Sci 122; Zool 132

4. Bot 130; Genet 172; Micro 161; PhyAn 141, 151, 160, 164; M Sci 123

5. Ecol 151, 152, 162; M Sci 103

B. Biological Science Electives (1-5)

Select one or more Biology Department

courses to complete the option. Only one elective course may be lower division.

Additional requirements 25

1. Chem 3A, 8, and 150 (10)
2. Math 70 or 75 (4)
3. C Sci 101 (3)
4. Math 101 or Psych 42 or M Sci 104 (4)
5. One course selected from Phys 2A; M Sci 142, 143; Geol 1; SI 101 (4)

Remaining General

Education requirements 42*

Electives and remaining degree requirements 15

(see *Degree Requirements*); may include a minor

Total 124

*Nine units of General Education requirements are satisfied to the following extent by major and additional requirements: CORE, Category 3 by Math 70, 72, or 75; Psych 42; BREADTH, Division 1 by Chem 3A, Division 2 by BioSc 1A. Consult your major academic adviser for details.

Molecular and Cellular Biology Option

This degree option is intended for students who wish to study the molecular mechanisms underlying cellular structure and function as well as the molecular and cellular interactions occurring in the operation and development of organ systems. Molecular biology combines the knowledge and techniques of genetics, cell biology and biochemistry, forming a basis for in-depth inquiry into all aspects of biology. The option introduces students to molecular inquiry at several levels of organization and provides the requisite background for the many career opportunities in biotechnology. The option also provides a solid foundation for graduate and professional studies emphasizing cellular and molecular processes, including the postbaccalaureate certificate of advanced studies in biotechnology offered by this department. Students preparing for the biotechnology certificate program should select a general microbiology course with laboratory and a biochemistry laboratory course among their elective courses. 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

Option requirements 40

Biology Core (21)

A. Select two courses from the following list (7-8)

Bot 137; Genet 171; Micro 161, 185; PhyAn 160

B. Select two additional courses from the following list or from other courses listed in Category A (6-8)

Genet 172; PhyAn 140, 162, 165

C. Biological Science Electives (3-6)

Select sufficient Biology Department courses *other than* those listed in Categories A and B to complete the option. Only one elective course may be lower division.

Additional requirements 31-41

1. Chem 3A or 1A-B, 8 or 128A-B, 109 or 129A, 150 or 155 (12-22)
2. Phys 2A-B (8)
3. Math 70 or 75 (4)
4. C Sci 101 (3)
5. Math 101 or Psych 42 (4)

Remaining General

Education requirements 42*

Electives and remaining degree requirements 1-11

(see *Degree Requirements*); may include a minor

Total 124

*Nine units of General Education requirements are satisfied to the following extent by major and additional requirements: CORE, Category 3 by Math 70, 72, or 75; Psych 42; BREADTH, Division 1 by Chem 3A, Division 2 by BioSc 1A. Consult your major academic adviser for details.

Physiology 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