

**BIOLOGY DEPARTMENT**

Professors: Ingles (Chairman), Hadsall, Hawbecker, McCoy, C. Quibell, Rees  
 Associate Professors: J. Carr, D. Falk, McClintic, Staebler  
 Assistant Professors: Arce, Broseghini, Latimer, P. N. Smith, Standing, Stocking, Woodwick  
 Instructor: Burdick  
 Part-time: Reinhardt, Turmon

The Biology Department includes the following fields: bacteriology, biology, botany, entomology, physiology, and zoology. Courses in each of these fields may be found under these headings. Courses are provided for general students, for those who are training for vocational and preprofessional work in biological fields, for students planning to become teachers, and for those who plan to enter the biological services of government agencies.

In addition to the general education offerings, the department offers majors and minors for the bachelor of arts degree; the bachelor of science degree; junior high and general secondary teaching majors and minor; and the master of arts degree.

**PREPROFESSIONAL PREPARATION**

For preprofessional preparation in dentistry and medicine, see page 81.

**FOREIGN LANGUAGE REQUIREMENT**

Two years of satisfactory collegiate study (or equivalent) in one foreign language are required for the bachelor of arts degree majors in biology, botany, zoology, and life science-general science, and the bachelor of science degree major in microbiology. *This requirement applies to students who will be graduated in June of 1963 and thereafter.* See the general statement on page 69 for equivalents and alternative ways of meeting the requirement. Any student planning advanced study is advised also to meet the foreign language requirement of the school he plans to attend.

**BACHELOR OF ARTS DEGREE MAJORS**

The biology department offers majors for the bachelor of arts degree in biology, botany, and zoology for students planning to enter graduate schools and research, professional schools, and biological field work. These majors consist of 36 to 40 units of which 24 must be upper division. Students must be reasonably prepared in physics, inorganic and organic chemistry.

For bachelor of science degree in biology and microbiology, and junior high and general secondary credential majors, see pages 218-219.

Biology Major for A.B.	Units
Bot. 1, General Botany	5
Zool. 1, General Zoology	5
Biol. 120, Genetics, or Biol. 151, Heredity and Evolution	3
Field course in biological science	3
Biological science electives (incl. 8 units each in plant and animal science)	24
	40

Additional requirements: 12 units physical science including chemistry and physics. (Recommended: Chem. 2a-b, 8, 109; Physics 2a-b, 2a-bL; Geol. 1.) See foreign language requirement above.

Botany Major for A.B.	Units
Bot. 1, General Botany	5
Bot. 104, Plant Physiology	4
Bot. 106, Plant Taxonomy	4
Bot. 107, Plant Ecology	3
Bot. 134, Plant Anatomy	4
Bot. 135, Morphology of Non-vascular Plants	3
Bot. 136, Morphology of Vascular Plants	4
Biol. 120, Genetics, or Biol. 151, Heredity and Evolution	3
Biological science electives	6
	36

Additional requirements: \* Zool. 1; Chem. 1a or 2a-b; Physics 2a-b or Phys. Sci. 10a. Recommended (one or more of the following): Ag. 130, 136; OH 3. See foreign language requirement, page 216.

Zoology Major for A.B.	Units
† Bot. 1, General Botany	5
Zool. 1, General Zoology	5
Zool. 114, Advanced Invertebrates, or Entom. 101, Gen. Entom.	3
Zool. 160, Embryology	4
Zool. 164, Comparative Anatomy	4
Biol. 120, Genetics, or Biol. 151, Heredity and Evolution	3
Biological science electives (at least 6 units animal science)	12
	36

Additional requirements: at least 10 units chemistry, 6 physics, 3 statistics. See foreign language requirement, page 216.

BIOLOGY MINOR	Units
The biology minor for the bachelor of arts degree consists of 20 units of which 6 must be upper division. For general secondary credential minor see page 219.	
Biol. 1a-b or 2a-b	6
Biol. 112 or an approved field course	3
Biological science elective (3 u.d.)	11
	20

Additional requirements: physical science including chemistry and physics. (Recommended: high school chemistry or Chem. 2a-b; high school physics or Phys. Sci. 10a.)

BACHELOR OF SCIENCE DEGREE	Units
The bachelor of science degree in biology and in microbiology is offered for students preparing for careers such as medical technologist and bacteriologist. This degree requires a total of 128 units, including one of the majors listed below. The general degree regulations and general education requirements (page 70) must also be fulfilled.	

\* Students with less than 4 units of general zoology must take an upper division course in zoology.

† Students with less than 4 units of general botany must take an upper division course in botany.