

Biology, Minor

DEPARTMENT

Department of Biology

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MN in Biology, Minor
MS in Biology, M.S.
MBT in Biotechnology, M.Bt.
BS in Biology, B.S.
CERT in Biotechnology, Certificate of Adv. Study
CRED in Professional Clear Foundation Level General Science
CRED in Single Subject Credential - Biological Science
Courses Offered

The Department of Biology offers diversified undergraduate and graduate programs that matches the breadth and excitement of modern biology and prepares students for the hundreds of career opportunities that use biology as a foundation. The Bachelor of Science degree is awarded to those students who successfully complete the biology core and additional requirements and electives.

The undergraduate biology major we offer has three programmatic goals:

1. To provide students with a solid foundation in all aspects of modern biology and also the intellectual skills that will serve as the basis for a lifetime of future achievement.
2. To provide students with the specialized educational opportunities that will allow them to compete successfully for careers in the biological sciences or for advanced studies in major doctoral programs.
3. To provide preprofessional students with the knowledge needed for advanced study in the many fields that build upon a biological foundation.

Our undergraduate biology major is excellent preparation for graduate programs in clinical laboratory science, medicine, dentistry, pharmacy, veterinary medicine, optometry, doctoral programs, and many others. The department offers a Master of Science (M.S.) in biology and a professional science Master of Biotechnology for qualified students who wish to explore some part of biology in greater depth.

Facilities

The department is housed in a well-equipped science building. Among the specialized equipment and technologies available for students are Polymerase Chain Reaction (PCR) thermocyclers; apparatus for conducting molecular and immunological analysis of nucleic acids and proteins; genetic recombination, including use of electroporation and gene guns; a bioinformatics computing laboratory; a proteomics work station; cell and tissue culture facilities; fermenters and bioreactors; fluorescence, confocal and 4-D microscopes; ultracentrifugation; radioactive materials methodologies; and metabolic studies on all types of life forms. Excellent greenhouse and animal care facilities, as well as media/reagent production complexes, support the instructional and research programs.

Fresno's proximity to both the Sierra Nevada and the Pacific coast provides a natural laboratory with numerous field trip opportunities that are rarely equaled at other institutions. High Sierra, Mediterranean, desert, foothill, coastal, and forest environments are all within a three-hour drive of the campus. The department maintains a wealth of field equipment to observe and collect wild organisms. A self-contained pond ecosystem offers a unique, on-campus study resource. The department also maintains extensive collections of museum specimens of insects, vertebrates and a herbarium.

REQUIREMENTS

Biology Minor Requirements

The Minor in Biology may be earned by completing the 22-unit biology core: BIOL 1A, 1B and 1BL, 101, 102, 103, 104, 105.

Note: The Biology Minor also requires a 2.0 GPA and 6 upper-division units in residence.

FACULTY

Faculty expertise spans the range of biology from the molecular to the ecological, with a broad representation of taxonomic specialties. Laboratories in most upper-division majors' courses are taught by faculty, and individualized student/faculty research participation through independent study is strongly encouraged.

Faculty members have garnered independent research funding from various agencies including the National Institutes of Health, National Science Foundation, U.S. Department of Agriculture, Environmental Protection Agency, and National Sea Grant. Faculty and students also participate in collaborative studies on, for example, medical and clinical topics with local physicians and hospitals; agricultural topics with the University of California Kearney Agricultural Research and Extension Center, Agricultural Research Service San Joaquin Valley Agricultural Sciences Center in Fresno/Parlier; ecological and environmental topics with California Department of Fish and Wildlife, U.S. Forest Service and Endangered Species Recovery Program; and science educational topics with regional school districts and state and national credentialing agencies.

For faculty phone numbers and e-mail, see the campus directory.

For more on the faculty, see the faculty pages.

The faculty pages are updated by the department or program.