

BIOLOGY

Master of Science Program in Biology

Graduates will be prepared to continue study at the Ph.D. level, to pursue careers in private industry or government labs, and/or teach at the community college level.

The Department of Biology offers a graduate program leading to a Master of Science in Biology degree. The Master of Science with a thesis option is intended to prepare students for professional positions in state and federal agencies, the environmental consulting industry, and for further graduate studies. The Master of Science with a non-thesis option is intended for working professionals, especially public school teachers, and emphasizes course work. A broad range of faculty research interests, easy access to diverse biological environments, and a range of modern research facilities permit the student to select from a broad spectrum of research topics. Faculty interests include field biology, conservation biology, physiology, comparative morphology, plant ecophysiology, plant anatomy, micro- and molecular biology, vertebrate paleontology, evolution, ecology, systematics, and behavior.

Some of the special features of our program include:

- Close, individual guidance by highly skilled faculty
- Incorporation of science pedagogy and teaching experience
- Many late afternoon and evening course offerings

Please visit our website for more information about entrance requirements and application forms:

<http://www.csub.edu/biology/>

Requirements for the Masters of Science in Biology

Thesis-Option (30 units)

- BIOL 5010 - Current Topics in Biology
- BIOL 5100 – Advanced Experimental Design and Analysis
- BIOL 6010 – Seminar in Biology
- BIOL 6911 – Thesis
- BIOL 6921 – Thesis Defense

*ELECTIVES (4000-, 5000-, or 6000-level courses)

Non-thesis-Option (33 units)

- BIOL 5010 - Current Topics in Biology
- BIOL 5100 – Advanced Experimental Design and Analysis
- BIOL 6010 – Seminar in Biology
- BIOL 6901– Non-thesis Examination

*ELECTIVES (4000-, 5000-, or 6000-level courses)

*Elective Courses

BIOL 4100 Evolution
BIOL 4200 Medical Microbiology
BIOL 4310 Conservation Biology
BIOL 4320 Advanced Ecology
BIOL 4330 Behavioral Ecology
BIOL 4340 Chemical Ecology
BIOL 4350 Environmental Microbiology
BIOL 4410 Insect Biology and Diversity
BIOL 4420 Plant Diversity
BIOL 4430 Vertebrate Diversity
BIOL 4440 Molecular Genetics
BIOL 4450 Bioinformatics
BIOL 4460 Evolutionary Genetics
BIOL 4510 Comparative Vertebrate Structure
BIOL 4520 Physiological Measurements
BIOL 4530 Terrestrial Ecosystem Ecology
BIOL 4540 Physiological Plant Ecology
BIOL 4550 Plant Structure and Function
BIOL 4700 Special Topics in Biology
BIOL 5010 Current Topics in Biology
(repeatable for elective credits when taken in addition to the 6 required units)
BIOL 5911 Graduate Practicum in Teaching of Biology
BIOL 5710 Advanced Topics in Biology
BIOL 5901 Research
GEOL 4050 GIS for Natural Sciences

*Selection of elective courses must be approved by the Graduate Program Director (non-thesis option) or Thesis Committee (thesis option).

Application Deadlines:

Fall Semester: March 15
Spring Semester: Sept 15

For more information contact:

Dr. Anna L. Jacobsen
Graduate Program Director
Department of Biology
Science I, Room 213
(661) 654-2572
ajacobsen@csub.edu
www.csub.edu



CSU Bakersfield
School of Natural Sciences,
Mathematics, and Engineering

www.csub.edu/nsme

| (661) 654-3450

| nsme@csub.edu

Graduate Course Descriptions

BIOL 5010 Current Topics in Biology (2)

Current topics of special interest to graduate students in Biology. Topics and content will vary as announced but will include contemporary or interdisciplinary areas of interest. May be repeated for credit as topics change

BIOL 5100 Advanced Experimental Design and Analysis (3)

Course covers how to effectively communicate biological science to the scientific community, effective methodology in experimental design, and proposal writing, including writing specific aims and creating a budget.

BIOL 5911 Graduate Practicum in the Teaching of Biology (2)

Theory and practice in teaching biology at the undergraduate level. Regular meetings with the faculty sponsor and supervised experience in course design, lecturing, tutoring, laboratory preparation and delivery, administering and scoring examinations, and leading classroom discussions.

BIOL 5710 Advanced Topics in Biology (4)

Laboratory or field-based graduate level biological topics in a specialized area of contemporary biology, such as genetics, ecology, microbiology, physiology, behavioral biology, systematics, or molecular biology. Topics will be announced. May be repeated for credit as topics change.

BIOL 5901 Research (1-3)

Independent research: the student formulates a problem and research design in consultation with the faculty, conducts the investigation, compiles and analyzes the data, and presents the findings in written form. Although repeatable, a maximum of five units may be applied towards the Master's degree. Available by consent of the advisor.

BIOL 6010 Seminar in Biology (2)

Student presentation and discussion of reviews and reports focusing on current literature and scientific research in ecology and evolutionary biology.

BIOL 6901 Non-Thesis Exam (1)

Comprehensive examination of graduate-level breadth administered by the Departmental Graduate Committee. Prerequisites: Approved petition for advancement to candidacy and consent of the graduate advisor.

BIOL 6911 Thesis (1-3)

Laboratory, field investigation, or a combination of both investigating a research problem. Repeatable. Although repeatable, a maximum of five units may be applied towards the Master's degree. Prerequisites: Approved petition for advancement to candidacy.

BIOL 6921 Thesis Defense (1)

Preparation, completion (including final submission to the library), and oral defense of a written thesis approved by the Thesis Committee and the Departmental Graduate Committee. Prerequisites: Approved petition for advancement to candidacy and consent of the thesis advisor.

Other Courses (see catalog for descriptions)

Admissions Requirements

1. An earned bachelor's degree in the biological sciences or a bachelor's degree in a related science with minimum course work equivalent to BIOL 3120 (Research Design and Analysis), BIOL 3010 (General Genetics), BIOL 3020 (General Physiology), and BIOL 3110 (General Ecology). Course work in evolution (BIOL 4100 Evolution) is recommended.
2. An undergraduate GPA of at least 3.0 in the last 90 quarter (60 semester) units of course work.
3. Graduate Records Examination (GRE) scores in the 50th percentile or greater for both the verbal and quantitative sections.
4. Formal decision by the Departmental Graduate Committee to accept the student into the graduate program. Admissions decisions are based on a formal application procedure, which includes evaluation of GPA, transcripts, GRE scores, letters of recommendation, and other materials that may be required by the Committee and/or offered by the student.
5. Students choosing the MS thesis-option are encouraged to contact a faculty member in their area of interest.