



Master of Science in Biology

Graduates from our program will be prepared to continue study at the Ph.D. level, to pursue careers in private industry, 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 view our M.S. Biology Graduate Guide on our Student Resources webpage for more information about our program:
<https://www.csub.edu/biology/student%20resources/index.html>

Requirements for the Master of Science in Biology

Thesis-Option

- BIOL 5010 – Current Topics in Biology (Must take 3 separate offerings)
- 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; 12 semester units)

Non-thesis-Option

- BIOL 5010 – Current Topics in Biology (Must take 3 separate offerings)
- BIOL 5100 – Advanced Experimental Design and Analysis
- BIOL 6010 – Seminar in Biology
- BIOL 6901 – Non-thesis Examination
- *ELECTIVES (4000-, 5000-, or 6000-level courses; 20 semester units with no more than 12 at the 4000 level)

*Elective Courses

- BIOL 4310 Conservation Biology
- BIOL 4320 Population and Community Ecology
- BIOL 4330 Behavioral Ecology
- BIOL 4340 Chemical Ecology
- BIOL 4350 Aquatic Ecology
- BIOL 4360 Aquatic Ecology
- BIOL 4410 Entomology
- BIOL 4420 Plant Diversity
- BIOL 4430 Vertebrate Diversity
- BIOL 4440 Molecular Genetics
- BIOL 4450 Genomics and 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 4560 Plant Pathology
- 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 5710 Advanced Topics in Biology
- BIOL 5901 Research
- BIOL 5911 Graduate Practicum in Teaching of Biology
- GEOL 4050 GIS for Natural Sciences
- GEOL 5070 Early Life on Earth
- GEOL 5090 Paleontology
- MATH 5210 Applied Statistical Computing and Multivariate Methods

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

Application Deadlines:

Fall Semester: March 15
 Spring Semester: Sept 15

For more information contact:

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 Department of Biology
 Science I, Room 219
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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.

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 5700 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 credits 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 the areas of Biology.

BIOL 6901 Non-Thesis Exam (1)

Comprehensive examination of graduate-level breadth administered by the Departmental Graduate Committee. Can be repeated only once. 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 eight 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 3120 (Research design and Biostatistics), Biology 3010 (Genetics), 3020 (Physiology), and 3110 (General Ecology), and BIOL 4100 (Evolution). Grades of C or higher are required for these courses or their equivalent.
2. An undergraduate GPA of at least 3.0 in the last 60 semester or 90 quarter 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.