Biology, M.S.

DEPARTMENT

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

REQUIREMENTS

Department of Biology

Master of Science Degree Requirements

Graduate Program
The Master of Science in Biology degree programs offers state-of-the-art educational experiences that will prepare students to make valuable contributions to society where knowledge, and understanding of biological organisms, and processes are required (e.g. biodiversity, conservation and the environment, health sciences and biotechnology). The program also prepares students to succeed in careers in education (teaching biological science disciplines at secondary schools and community colleges) and to pursue further study to obtain a Ph.D. or other professional degrees. Students learn laboratory and/or field techniques and will conduct independent research within the biological sciences. They also acquire the skills necessary for communicating biological information to professional scientific peers as well as to the lay public. Biology Faculty research areas cover (i) environmental, evolutionary & ecological systems, (ii) physiological, behavioral & development systems, (iii) molecular, cellular & genetic systems, and (iv) STEM education.

Application Requirements
1. A bachelor's degree in biology (or the equivalent) is required. Applicants must have official transcript(s) sent directly to the Division of Research and Graduate Studies.
   Attn: Graduate Admissions
   5150 N. Maple Ave M/S JA57
   Fresno, CA 93740
   Electronic transcripts: imaging@csufresno.edu
2. 2.5 cumulative GPA or 2.5 GPA in the last 60 units.
3. Applicants must submit a CV that highlights educational background, research experience/interest, teaching experience/potential, funding/awards.
4. A personal statement (250+ words) of why you want to pursue the Biology MS at Fresno State. The statement should include your choice of research lab, your field of research interest, and your proficiency/preparation for this field of study.
5. A diversity statement (250+ words) about how your personal background and life experiences inform your decision to pursue a graduate degree, and will contribute to the social, intellectual, or cultural diversity within our campus community and your chosen biological field.
6. You must secure your thesis advisor prior to acceptance into the MS program of Biology. Your thesis advisor shall be a faculty member in the Department of Biology or a member of Biology MS faculty group.
7. Two letters of recommendation (ideally from academic references) are required. Applicants must arrange two letters of recommendation to be directly sent from references to the Graduate Coordinator via email.

International applicants. International students have additional admission requirements such as English language proficiency and financial documents. For more information, please contact the international office or visit the website (http://www.fresnostate.edu/academics/issp/future/graduate.html).

Conditional acceptance. Conditionally accepted students must earn "classified standing" as soon as possible by completing the prerequisite coursework. Prerequisite coursework may not be included in the 30-unit master's program.
Master of Science Degree Requirements

**Coursework.** The Master of Science degree requires a minimum of 30 units. The undergraduate courses used toward fully classified status may not be used toward the master's degree. Students should have an average GPA of 3.0 or better for the online graduation application.

**Required courses (11 units):** BIOL 250; BIOL 251 or BIOL 274 or other approved experimental design course; BIOL 273; any combination of two seminar courses (BIOL 281; BIOL 248; additional seminars as approved by department); 2 units of BIOL 280

**Thesis (4 units):** BIOL 299

**Approved electives (15 units):** 100- or 200-level Biology or closely-related courses with the approval of the thesis advisor and committee. At least 21 units of the total must be taken in 200-level courses in biology or closely related courses. 100-level courses are allowed up to 9 units. Any combinations of BIOL 290 and BIOL 295 are counted toward graduation up to 6 units.

**Graduate Writing Requirement (GWR).** Passing the GWR is a prerequisite for the advancement to candidacy petition. To pass the writing requirement, students must submit a formal research proposal relevant to thesis work to thesis committee members and receive at least a score of 3 out of 5 in each of the four evaluation categories from all members. The GWR scoring rubric is available from the department website (http://fresno tate.edu/csm/biology/msinbiology/forms.html). For more information, please contact the graduate coordinator.

**Advancement to candidacy.** Advancement to candidacy must be achieved at least one semester prior to the term in which you register for thesis (BIOL 299) and graduation. At least 9 units are needed before advancement to candidacy (the filing semester is also counted as "before advancement"). You also need to pass the GWR prior to the petition. The advancement to candidacy package, which is composed of the completed committee assignment form, your thesis proposal (GWR), GWR scores, and completed petition of advancement to candidacy form (available online from the Division of Research and Graduate Studies), will be distributed to Biology faculty for evaluation/approval before submission to the Division of Research and Graduate Studies. For more information, please contact the graduate coordinator.

**Penultimate semester committee meeting.** All graduate students must complete a mandatory committee meeting in at least the semester prior to the intended semester of graduation, present a PowerPoint of research hypotheses/results/data interpretation, and secure approval from the thesis committee for thesis submission. Policy and approval form are available from the department website (http://fresno tate.edu/csm/biology/msinbiology/forms.html). For more information, please contact the graduate coordinator.

**Thesis and research work.** Your thesis work should start when you enter the program as your thesis research takes a long time and often does not go as you planned. A departmental form is required for enrolling into BIOL 299 (Thesis) and available in the Biology office. Be aware that your thesis must be completed and approved online by each of your thesis committee members before online thesis submission, and that the thesis submission deadline is not the end of the semester, but about a month earlier and set by the Division of Research and Graduate Studies each academic year. The final (thesis) semester in which you enroll into BIOL 299 should be ideally spent mostly on thesis writing.

**Exit seminar.** Seminar should be delivered before the final instruction day for the semester. Thesis committee chair must be present, along with other committee members (or designees).

**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.