

MASTER OF SCIENCE IN BIOLOGY: CONCENTRATION IN INTEGRATIVE BIOLOGY

The Masters in Biology with a Concentration in Integrative Biology is designed for students aiming to go on to Ph.D. programs or enter the workplace in fields such as systematics, evolutionary biology, conservation biology, population genetics, genomics, taxonomy, biodiversity, and biogeography and/or community, population, reproductive, physiological, and evolutionary ecology. This program is a research-intensive program – students conduct hands-on mentored research training using state-of-the-art facilities with the goal of publishing in scientific journals. It is common for students to travel to scientific meetings and present the results of their research in talks or posters. Students work closely on their research projects with their primary advisor in consultation with their chosen thesis/project committee, which consists of two other faculty members.

General Admission Requirements

An applicant must have a baccalaureate degree from an accredited institution and the equivalent major coursework for the program area to which application is made. To evaluate an applicant, the biology department requires the following:

- a. A statement of purpose
- b. Two or more letters of recommendation, preferably from science faculty
- c. Transcripts of all undergraduate work

When the department receives this information, the completed file is forwarded to the faculty coordinator of the program area chosen by the applicant. The faculty in the program area evaluate the applicant's file, interview students, and recommend admission or denial. Applicants should contact each faculty member (via email) whose research fits with your interests, and arrange an individual appointment to discuss opportunities in their laboratories. Acceptance is based on the following criteria:

- Statement of purpose
- Letters of recommendation
- Performance in the candidate's prior academic work
- An interview with the candidate.

Denial of admission may be based on inadequacy in any of the above criteria, if an applicant's interests are not represented by current faculty, or if faculty in the applicant's area of interest are unable to support additional students.

Program Learning Outcomes

- a. Critically read and evaluate the significance and validity of peer-reviewed publications to develop a comprehensive knowledge of research in their field of expertise and to be able to clearly articulate such knowledge.
- b. Conduct original research in a biological sub#discipline, including the design of experiments, development and testing of hypotheses, application of quantitative analyses to visualize and interpret data and derive conclusions.

- c. Develop effective writing skills for both informal and formal professional communications that include a written thesis, scientific proposal, or scientific manuscript.
- d. Develop skills to orally present scientific material to a broad range of audiences, including in courses and an oral thesis defense.
- e. Practice the responsible and ethical conduct of research and professional integrity in carrying out scientific investigation.

Written English Proficiency Requirement

The University has a requirement for written English proficiency that is to be assessed at two levels.

Level One

The student must pass an essay test administered by the department at the beginning of the first semester.

Level Two

Prior to filing the Advancement to Candidacy (ATC), the student must prepare a thesis prospectus for approval by the student's thesis committee.

Assistantships

Opportunities may be available to work in the Biology Department as a graduate student at San Francisco State University. Qualified students may apply, when available, to teach lower-division lectures and laboratory sections. Students may also apply for financial aid through the University.

Biology (M.S.): Concentration in Integrative Biology – 30 units

Required Courses (13 units)

Code	Title	Units
BIOL 700	Introduction to Research Skills	3
BIOL 862	Advances in Ecology and Systematic Biology	2
BIOL 870	Biology Colloquium	2
BIOL 897	Research	6

Elective Units (13 units)

The elective course requirements shall be determined by the student's committee and are based upon considerations such as goals, interests, and undergraduate preparation. Upper-division Biology courses are acceptable with the approval of the graduate advisor. Students are reminded to check the individual concentrations for additional requirements.

Culminating Experience (4 units)

Select one:

Code	Title	Units
BIOL 895	Research Project	4
BIOL 898	Master's Thesis	4

- All courses listed to satisfy conditional requirements or on the Advancement to Candidacy (ATC) must be completed with a letter grade. The culminating experience courses, BIOL 895 and BIOL 898, are the exception and will be graded on a CR/NC basis.
- A minimum of 30 units of upper-division and/or graduate credit.

- A minimum of 21 units of the 30 total must be from graduate-level or paired courses. Six units may be from paired courses.
- A maximum of 6 units of BIOL 897 is allowed when filing for Advancement to Candidacy (ATC).
- A maximum of 2 units of BIOL 881 is allowed when filing for Advancement to Candidacy (ATC).
- An oral defense of the thesis or research project is required.