Integrated Biology, M.S.

The Department of Biology’s graduate programs in integrated biology emphasize original research and developing the skills essential for publishing and communicating research findings to the scientific community. Research programs in the department cover many areas of the biological sciences: cell biology, developmental biology, ecology, evolution, genetics, and neurobiology. Graduate study in the department provides students with a broad understanding of these basic areas.

When new graduate students are admitted, they are assigned a temporary advisor. Each student and the advisor discuss the student’s educational background and formulate a first-semester study plan before the student registers for courses. The programs allow each student to tailor course work to the research interest of the student. Students may be advised to take specific course work in order to enhance their background in certain areas.

During the first year, students whose preparation in chemistry, genetics, mathematics, and physics does not meet the department’s graduate entry requirements may need to remedy deficiencies by taking appropriate course work.

Minimum entry requirements are:
- two semesters of organic chemistry, or one semester of organic chemistry and one semester of biochemistry;
- one semester of calculus;
- two semesters of college physics; and
- 20 s.h. of course work in biology.

A student with a bachelor’s degree outside the biological sciences may request modification of certain area requirements. The Graduate Affairs Committee decides whether portions of the requirements may be waived.

Requirements

The Master of Science program in integrated biology requires 30 s.h. of graduate credit with thesis or 34 s.h. of graduate credit without thesis. Entering students are admitted only to the thesis program; however, students who decide not to continue their studies may opt for the nontheory program.

M.S. students must enroll in at least two advanced lecture courses (or courses approved by the Graduate Affairs Committee). They also take one seminar course (2 s.h.), that has a significant writing and oral presentation component, as well as BIOL-6188 Seminar: Writing in Natural Sciences. At the end of the first year, students take a qualifying exam that consists of essay questions based on major themes in biology. Students must perform satisfactorily on this exam in order to continue in the program.

Thesis students may count a maximum of 9 s.h. of research credit toward the 30 s.h. required for the master’s degree with thesis. Remaining course work is tailored to a student’s background and career goals and is selected in consultation with the student’s advisory committee. The thesis is based on original research. After the thesis is accepted by the student’s supervisor and advisory committee, the student must pass an oral examination based on the thesis research and on related subjects.

Nonthesis students must write a library research report for a maximum of 4 s.h. of credit. They may apply up to 8 s.h. of research credit toward the 34 s.h. required for the master’s degree without thesis.

Visit Integrated Biology Graduate Program for more detailed information about the Master of Science program.

Admission

Individuals who wish to pursue graduate study in integrated biology may apply to the Master of Science with thesis program. The M.S. without thesis is an exit program and does not admit entering graduate students.

Application materials for the graduate program must be uploaded to the University’s Office of Admissions website. These are reviewed by the Department of Biology Graduate Recruitment and Admissions Committee. For detailed instructions, visit iBio Application on the integrated biology graduate program website.

Applicants must hold a valid B.A. or B.S. from an accredited institution. Applicants should supply official transcripts from each undergraduate and graduate institution they have attended along with scores from the Graduate Record Examination (GRE) General Test (verbal, quantitative, and analytical writing). The GRE Subject Test in biology or biochemistry is optional but not required.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL) and have their score sent to the Office of Admissions. International applicants who received their degrees (either bachelor’s or master’s) from a U.S. institution are exempt from this requirement. All international students whose first language is not English are required to take the on-campus English Proficiency Evaluation before they first enroll for classes.

Successful applicants for graduate admission typically have a g.p.a. of at least 3.00 (on a 4.00 scale) and a Graduate Record Examination (GRE) General Test score above 1200 (combined verbal and quantitative) on the older GRE test or 308 (combined verbal and quantitative) on the revised GRE. The admissions committee also considers letters of recommendation, research experience, and other appropriate criteria.

Although most applicants have completed undergraduate programs in biology, the department also considers applicants with backgrounds in related sciences, providing they have taken the required course work.

Students applying for admission to the M.S. with thesis program should have a bachelor’s degree in one of the biological sciences. Students with bachelor’s degrees in other areas may need to register as nondegree students and complete the equivalent of the department’s bachelor’s degree program prior to consideration for admission. Nondegree students must complete chemistry, physics, and calculus requirements in addition to the biology courses listed in the undergraduate program. Nondegree students should consult the department’s graduate program administrator before applying for admission.

Applications are due by January 1 (visit Integrated Biology Graduate Program for updated deadline information) and must include the applicant’s GRE test scores. In order to meet the deadline, applicants must take the GRE in October or earlier.
Late applications are considered as placement and funding permit. Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

### Financial Support

M.S. students generally are supported by available research or teaching assistantships. Offers of admission include information about offers of financial support.

### Career Advancement

The graduate program in integrated biology prepares students for careers in academic research, science education, industry, government, and a variety of other careers in which their scientific expertise can be used.

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.