BIOLOGY M.S.

Graduate Arts and Sciences
Dr. Edwin Li, Director

Mission Statement
The Biology Department offers programs leading to the Master of Science (M.S.) and Master of Arts (M.A.) degrees in biology. These flexible programs meet the needs of students wishing to develop their skills as research scientists or prepare for admission to professional school or doctoral programs. Both programs can prepare students to enter science-related careers or help them advance in education or corporate settings.

Description of Programs
The graduate programs of the Biology Department are intended for graduates who desire training in specialized fields and who are planning a career in teaching, research or professional practice in these areas.

The M.S. program requires completion of an extensive research project and a written thesis and is typically a full-time program completed within two years. The M.A. program is more easily accommodates part time as well as full-time students. Non-matriculated students may also, with permission, enroll for isolated credit. Competitive tuition scholarships and teaching assistantships may be available to M.S. students. Students apply to either the M.S. or the M.A. program depending on their interests. Due to the independent, research-intensive nature of the M.S. program, admission is more competitive. The number of M.S. students admitted each year is also limited by the availability of faculty mentors, and available funds, and may change annually. The graduate admissions committee will evaluate all applicants and decide whether the applicant has sufficient credentials to be admitted to the program. An interview, phone or on-site, with the applicant may be requested.

The biology graduate program accepts applications all year; however students are advised to begin their studies in the fall semester because the required Research Techniques (BIO550) course is offered only in fall. Applicants wishing to be considered for teaching or research assistantships and tuition scholarships for the fall semester are advised to apply by March 1st.

Learning Goals and Objectives

**Goal 1:** Students will develop their identity as scientists by acquiring more knowledge and a deeper understanding of one or more of the subfields of biology, and through interactions with faculty mentors, with their colleagues, and with other science and non-science professionals.

**Objective 1.1:** Students will be informed about prospective careers for life scientists in government, industry, and academia as well as learning about the professional and ethical expectations for scientists.

**Objective 1.2:** Students will be familiar with the appropriate set of research, laboratory and/or field skills used by specialists in their subfields of choice.

**Goal 2:** Students will develop skills in experimental design and the presentation of scientific information.

**Objective 2.1:** Students will be able to design an experiment, operate basic laboratory equipment, reduce and present data that includes the interpretation of statistical tests.

**Objective 2.2:** Students will be able to develop cogent written and oral presentations of scientific content.

**Objective 2.3:** Students will be able to locate, read, interpret, evaluate, and discuss primary literature in biology.

Course Requirements
Degree candidates for the Master of Science degree in Biology must be full time students and will be required to complete 30 credit hours of graduate study in biology. All M.S. candidates will be required to complete 24 credit hours of formal classroom study and 6 credit hours of thesis research (BIO 794). The 24 credit hours of formal classroom study must include Research Techniques (BIO 550 and BIO 550L) and graduate level courses (500-700 level), which may include up to 4 credit hours of Graduate Seminar (BIO 552) and 8 credit hours of research (BIO 793). Graduate Seminar is required during each semester of enrollment.

Thesis Requirements
Degree candidates for the Master of Science Degree in Biology will be required to complete a research problem in their area of specialization and to publish their findings in thesis form. A Thesis Committee will be formed to follow the progress of the candidate, evaluate the final thesis and administer a final oral examination based on the thesis research. The Thesis Committee will consist of three faculty members, and be chaired by the candidate's research mentor. The thesis must be acceptable in both scholarship and literary quality. Both a public presentation of the thesis work and a private defense of the thesis are required. To be recommended for the Master of Science degree in Biology, the candidate must receive approval of the majority of the committee members. Not later than three weeks prior to the commencement at which the degree is to be conferred, two copies of the completed thesis suitable for binding and bearing approval of the Thesis Committee must be deposited in the Department of Biology office. The cost of preparation, reproduction, and binding of the thesis is the responsibility of the candidate.

Other Specific Requirements
1. The candidate for the M.S. Degree in Biology is required to graduate with a grade point average of at least 3.0.
2. Successful completion of all requirements must be accomplished within a maximum of 5 years from the time of acceptance to the program.
3. All of the requirements described in this document represent minimum requirements, and it is understood that the Thesis Committee may require additional work to make up for deficiencies in the student’s background. Any exceptions to requirements must be approved by the thesis mentor and the graduate director.

Financial Support
Full-time M.S. students may be eligible for financial support in the form of tuition scholarship. To be considered for this scholarship, applications must be received no later than March 1st. Stipends, in the form of teaching assistantships, may be available for M.S. and M.A. students. Other teaching opportunities may be available to both M.A. and M.S. candidates.