

# Biological Sciences, Ph.D.

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The School of Biological Sciences offers both the Master of Science and Doctor of Philosophy, although emphasis at the graduate level is placed on the Ph.D. programs. Most training takes place within one of the departments, although full facilities and curricular offerings are available to all graduate students in all departments of the Biological Sciences. Interdisciplinary study and research are encouraged.

Students are expected to maintain a B average at all times. The normative time to degree is two years for the master's degree and five years for the doctoral degree. A master's degree is not a prerequisite for the Ph.D.

Students plan their academic program in consultation with the graduate advisor or a faculty committee. Faculty advisors may be changed to meet the needs and interests of the student. In addition, it is possible for students to transfer to another program in the School, subject to the approval of the dean of Graduate Studies, and acceptance into that program. Students are encouraged to consult with faculty members with regard to their research and academic interests.

During their graduate training, all doctoral students are required to serve at least two quarters as a 50-percent teaching assistant under the direction of laboratory coordinators or faculty. Advanced graduate students may work closely with faculty in the planning and execution of the teaching program. The amount and nature of the teaching experience varies with the department.

## Master of Science

The Master of Science may be completed by submission of a research thesis (plan I) or by course work and a comprehensive examination (plan II).

### Plan I: Thesis Plan

The student is required to complete at least four didactic graduate courses (16 units) offered by the department, and elective course work with an additional eight units of graduate or upper-division undergraduate course work. In addition, the student will typically take additional seminar courses during the graduate study. Students in the M.S. program may be employed as teaching assistants, but units earned through enrollment in University Teaching (399) may not be counted toward degree completion. The student engages in thesis research with a faculty thesis advisor, and will prepare and submit a thesis to the thesis committee. The final examination is an oral presentation of the thesis to the committee. The normative time to degree is two years for the thesis M.S.

### Plan II: Comprehensive Examination Plan

The plan II M.S. is awarded based on completion of at least 36 units of course work and satisfactory completion of a comprehensive examination. The student is required to complete at least 16 units (four courses) of didactic graduate course work offered by the department. In addition, the student will take up to 12 units of research. An additional eight units or more of elective course work will be completed from other graduate courses offered by the department. A maximum of four units of upper-division undergraduate courses may be included in the program with the approval of the associate dean for Graduate Studies. Students in the M.S. program may be employed as teaching assistants, but units earned through enrollment in University Teaching (399) may not be counted toward degree completion. The comprehensive exam will be administered by a committee of at least three departmental faculty, and may include written and oral sections. The comprehensive examination format will include presentation of research or a capstone project and may include additional sections such as a research proposal, presentation of a project, critical analysis, or other components. The normative time to degree is two years for the M.S. by comprehensive examination.

## Doctor of Philosophy

### Comprehensive Examination-First Year

Some departments and graduate programs require a comprehensive examination that is generally taken at the end of the first year of graduate study.

### Advancement to Candidacy Exam

The advancement to candidacy examination is taken in the third year of graduate study. The student will prepare a written research proposal based on a federal granting agency format, and the proposal will be submitted to the advancement committee. The student will present the research proposal to a committee of five faculty members. At the time of advancement to candidacy, the student is expected to have identified an important and tractable dissertation topic, and to have demonstrated the technical and intellectual skills to complete doctoral thesis research.

Once the advancement to candidacy examination is completed, the student is expected to complete the doctoral degree within three years. The student must submit a dissertation on their research and defend the thesis in an oral examination during the final year of graduate study. The normative time for completion of the Ph.D. is five years, and the maximum time permitted is seven years.

Graduate student status or consent of instructor is a prerequisite for all 200–299 courses.