

PHD IN BIOLOGY (ECOLOGY AND ORGANISMAL BIOLOGY CONCENTRATION)

The doctoral degree in biology (ecology track) is awarded to a student who has demonstrated mastery in the field of ecology and a distinct ability to make substantial contributions to the field. The doctoral degree in biology prepares students to enter research careers at academic institutions or state and federal natural-resource agencies, environmental consulting firms, and nonprofit and non-government organizations (NGOs).

The doctoral degree provides a foundation in ecology, research methodologies and practices, rigorous hypothesis-driven scientific investigation, and the dissemination of research results and ideas.

In general, work for the Ph.D. takes five years of study beyond the bachelor's degree. A substantial portion of this time is spent in independent research leading to a dissertation. Up to 30 hours from a master's degree program may apply as part of the student's doctoral program. Normally 90 credit hours of study beyond the bachelor's degree are required for the Ph.D.

The doctoral degree in biology (Ecology and Organismal Biology Concentration) is awarded to a student who has demonstrated mastery in the field of biology and a distinct and superior ability to make substantial contributions to the field. The quality of work and the resourcefulness of the student must be such that the faculty can expect a continuing effort toward the advancement of knowledge and significant achievement in the discipline.

In general, work for the Ph.D. requires a minimum of 90 credit hours of study beyond the bachelor's degree. A substantial portion of this time is spent performing independent research leading to an original thesis that is substantially more in depth than a MS thesis. Work performed toward a MS may apply in part to the student's doctoral program.

Each student must complete an individualized program of study in an area of ecology that is approved by the student's advisory committee. This program must include 24 hours of formal courses (excluding EEES 8960 and EEES 8990) with a minimum of 19 hours in DES that must include EEES 5160, EEES 8250, two semesters of statistics (e.g., EEES 8400 and an advanced statistics course such as EEES 8650), EEES 8600, 8930-009 Departmental Seminar (1 hr. per semester), and the remaining courses selected with approval of the student's thesis committee taken at the 7000 level or above; all but EEES 8930 (seminars) must be taken for a letter grade (A–F). Additional credit hours will include EEES 8960 and/or EEES 8990, a maximum of 6 hours of which may be taken for a letter grade, and may also include other DES or non-DES courses that need not be taken for a letter grade. Within the first two years of study students must pass a written qualifying examination and an oral comprehensive examination and a defense of their research proposal.

All graduate students in the Ph.D. program are required to complete at least one semester of formal teaching-assistant experience before graduation. In addition, each student must:

1. submit a manuscript on their research to a scholarly, peer-reviewed journal;
2. give a presentation of their research at a professional conference; and
3. make an oral presentation on their research at a scholarly forum (an oral presentation at a professional conference would satisfy both latter requirements, but a poster presentation would not).

Finally, each student must prepare a dissertation consisting of a written report on original independent research conducted by the student under the supervision of their dissertation advisor (or co-advisors) and defend this dissertation before their advisory committee.

- PLO 1. Students will demonstrate an in-depth understanding of and the ability to communicate scientific information within an area of specialized study within the biological sciences.
- PLO 2. Students will demonstrate an ability to conduct experiments, collect and interpret data, and disseminate those data in written and verbal modalities.
- PLO 3. Students will demonstrate knowledge of their ethical responsibility when conducting research in terms of proper scientific conduct and the rights of human subjects.