PLANT BIOLOGY M.S.

All students must meet the Requirements for the Master’s Degree

OVERVIEW

The Department of Plant Biology has ongoing research programs in: ecology and evolution including physiological ecology of aquatic plants; effects of acid depositions on forest ecosystems; physiological ecology of acid depositions; systematics and evolution of vascular plants; biogeography; physiology including morphogenesis and developmental biology of embryonic plant systems; mineral nutrition; growth and development; translocation; cellular electrophysiology; membrane function; amino acid transport; aluminum effects on cell membranes; cell and molecular biology including molecular genetics; recombinant DNA of fungi; and plant molecular development.

The department participates actively in the Cellular, Molecular and Biomedical Program which provides opportunities for interdisciplinary research with other life science departments.

The department offers a multidisciplinary non-thesis program leading to the degree of Master of Science, Field Naturalist Option. Enrollment is limited to a small number of mature, highly talented individuals who have demonstrated sustained interest in field aspects of the natural sciences. The program is designed to provide students with:

1. a solid grounding in field-related sciences;
2. the ability to integrate scientific disciplines into a coherent whole at the landscape level;
3. the ability to evaluate sites from a number of perspectives and/or criteria;
4. the ability to translate scientific insights into ecologically sound decisions; and
5. the ability to communicate effectively to a wide range of audiences.

SPECIFIC REQUIREMENTS

Requirements for Admission to Graduate Studies for the Degree of Master of Science

The equivalent of a UVM major or minor in a natural or physical science. Satisfactory scores on the Verbal and Math sections of the Graduate Record Examination.

Requirements for Admission to Graduate Studies for the Degree of Master of Science, Field Naturalist Option

An undergraduate or graduate degree in earth or life sciences is expected; additionally, a demonstrated commitment to field sciences (e.g., participation in environmental and conservation organizations, workshops, field trips, research); strong scores on the Graduate Record Examination. A subject (advanced) test in biology or geology is advised for students who lack an undergraduate degree in natural sciences. Recent college graduates are encouraged to pursue interests outside academe before application to the Field Naturalist Program.

Minimum Degree Requirements

A total of thirty credits of course work and thesis research. A minimum of fifteen credits of course work should be in botany, other natural sciences, and supporting fields, and at least nine credits should be in thesis research.

Minimum Degree Requirements, Field Naturalist Option

Thirty credits of courses to include:

At least two courses in each of three core areas, with course selection to be determined by the student’s graduate studies committee:

<table>
<thead>
<tr>
<th>Area</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Life science</td>
<td>PBIO 223: Fundamentals of Field Science</td>
<td>3</td>
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<tr>
<td>Earth science</td>
<td>NR 378: Integrating Analyses NR Issues</td>
<td>3</td>
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<td>Ecology</td>
<td>Enrollment in Field Naturalist Practicum (PBIO 311) each semester</td>
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<td>Written field research project (PBIO 392) at the end of the fourth semester</td>
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Comprehensive Examination

A written and oral examination is completed by end of the student’s second year in the program. The written exam consists of questions from each of the student’s committee members, and after successful completion an oral exam is scheduled.

Comprehensive Examination, Field Naturalist Option

An oral examination takes place in the student’s third semester. During this examination the student identifies, inventories and assesses the pieces, patterns, and processes of a previously unvisited landscape, and presents findings in a manner that would be meaningful to staff, officers, and scientists of The Nature Conservancy.

Requirements for Advancement to Candidacy for the Degree of Master of Science

Satisfactory completion of PBIO 223, PBIO 311, and NR 378.