PLANT BIOLOGY

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Major: Plant Biology
Degrees Offered: M.S., Ph.D.

Major: Plant Biotechnology
Degrees Offered: M.S.
Graduate Concentration: Professional Science Master’s (M.S. only) - not currently accepting applications

Graduate Degree Programs
The Department of Plant Biology offers three graduate programs leading to the Master of Science degrees (the traditional thesis option, the non-thesis option), the non-thesis Plant Biotechnology M.S. with Professional Science Master’s (PSM) concentration and a Doctor of Philosophy degree. It also participates in an interdepartmental programs leading to a doctoral degree: the Program in Ecology, Evolution and Conservation Biology (http://sib.illinois.edu/peec). In addition, students can participate, during their degree programs, in several non-degree granting interdepartmental programs and interest groups, such as the Cell and Molecular Biology Training Program (http://neuroscience.illinois.edu/program/opportunities/cellmolecular.html).

The Department teaches and conducts research in basic plant biology. Its focus is integrative:

- biological processes are investigated at multiple levels of organization using molecular
- biochemical
- physiological
- ecological approaches

Areas of specialization within the department include:

- biochemistry
- biodiversity
- bioinformatics
- cell biology
- conservation biology
- development
- ecology
- environmental physiology
- evolution
- genetics
- genomics
- modeling
- molecular biology
- mycology
- paleoecology
- photosynthesis
- phytochemistry
- population biology
- biotechnology
- systems biology
- systematics

Graduate students acquire reasonable breadth in their overall biological and professional training as well as expert-level depth in their areas of specialization.

Students in the Illinois PSM in Plant Biotechnology program emphasize plant-related disciplines that support biotechnological areas, including genetics, genomics, biochemistry, physiology and cell and molecular biology.

The Plant Biology Departmental website (http://www.life.illinois.edu/plantbio) provides additional information about the department, its admissions procedures, degree requirements, facilities, and the research interests of its faculty.

Admission
Prospective students for thesis-option graduate studies in Plant Biology are encouraged to identify faculty member(s) whose research specialty(ies) most closely coincide(s) with their interests and to correspond directly with them. Acceptance for thesis degrees is based on the applicant’s academic achievement and research potential. Acceptance for the non-thesis option in Plant Biology is based on the applicant’s academic achievement. Admission into the Plant Biotechnology PSM concentration is based on the applicant’s academic achievement and expressed interest in non-academic careers that blend science and business. While departmental requirements do not specify particular courses as prerequisites for admission, applicants should have had an undergraduate degree in biology or related sciences. Admission to the graduate program requires an undergraduate grade point average of at least 3.0 (A = 4.0). Graduate Record Examination (GRE) scores (or approved equivalent) are required; however no minimum scores are specified for admission. An advanced subject test is recommended. International students should have a Test of English as a Foreign Language (TOEFL) score of 600 or above on the paper-based test, or 250 or above on the computer-based test (cBT) or 102 or above on the internet-based test (iBT).

Facilities and Resources
The Plant Biology Department’s diverse state-of-the-art research laboratories are located in Morrill Hall, Edward R. Madigan laboratory and the Institute for Genomic Biology. In addition, the Department maintains extensive plant growth-chamber facilities, environmentally controlled greenhouses, a conservatory with live teaching and research collections, herbaria, a center for paleobotanical collections and diverse local and remote field sites including SoyFACE (http://soyface.illinois.edu). The University also offers exceptional research support services including the Roy J. Carver Biotechnology Center (http://www.biotech.illinois.edu), service laboratories in the Institute for Genomic Biology (http://www.igb.illinois.edu/facilities-services), the Beckman Institute (http://www.beckman.illinois.edu) and the University Library (http://www.library.illinois.edu), one of the world’s largest.
Financial Aid

Fellowships, teaching assistantships, and research assistantships are available for qualified MS and PhD students in Plant Biology. Fellowships in these programs are awarded on a competitive basis. Illinois PSM students may not hold assistantships or other tuition and fee waiver-generating appointments; statutory waivers and tuition scholarships are accepted.

- Master of Science in Plant Biotechnology, Professional Science Master’s Concentration (http://catalog.illinois.edu/graduate/graduate-majors/plant-bio/ms-plant-biotechnology-psm-concentration) (not currently accepting applications)
- Master of Science in Plant Biology (http://catalog.illinois.edu/graduate/graduate-majors/plant-bio/ms-plant-biol)

Doctor of Philosophy in Plant Biology

Candidates for the Ph.D. are expected to complete a minimum of 96 hours of graduate coursework and research. A formal evaluation (the Two-Year Review) of the student’s academic progress is made prior to the end of the second year of study (end of Stage I). Departmental approval must be obtained at this juncture in order to continue in the graduate program. A Preliminary Examination is taken during the second year (if the student entered with an M.S. degree) or the third year (if the student entered with a B.S. degree) (end of Stage 2). This consists of an oral examination of general knowledge in three of nine broadly-defined areas of plant biology and defense of a written research proposal on the thesis research topic prepared by the student. Experience in teaching is considered a vital part of the graduate program and is required as part of the academic work of all Ph.D. candidates. The final stage (Stage 3) of the program consists of preparing an acceptable thesis based on independent research designed in consultation with a faculty advisor and approved by a graduate faculty thesis committee. A final oral examination, in which the student defends the thesis, a public seminar, and deposit of an approved thesis complete the program. The Ph.D. degree program is expected to be completed within five years. See the Plant Biology Department’s online Graduate Student Handbook (http://www.life.illinois.edu/plantbio/gradhandbook.htm) for a detailed description of the Stages and Requirements of the Ph.D. program.

Entering with approved B.S./B.A. degree

Research/Project/Independent Study Hours (no max applied toward degree):

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<th>Course Code</th>
<th>Description</th>
<th>Total Hours</th>
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<tbody>
<tr>
<td>PBIO 599</td>
<td>Thesis Research (no max applied toward degree)</td>
<td>64</td>
</tr>
</tbody>
</table>

Other Requirements

Other requirements may overlap

- Teaching: at least the equivalent of one semester as a half-time teaching assistant
- Masters Degree Required or Admission to PhD: No, but Masters level requirements (32 hours minimum) must be met in order to enter State 2 of Ph.D. program.
- Preliminary Exam Required: Yes, at the end of State 2, in order to enter Stage 3
- Final Exam/Dissertation Defense Required: Yes, at end of Stage 3

Entering with approved M.S./M.A. degree

Research/Project/Independent Study Hours (no max applied toward degree):

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<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBIO 599</td>
<td>Thesis Research (no max applied toward degree)</td>
<td>96</td>
</tr>
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</table>

Other Requirements

Other requirements may overlap

- Teaching: at least the equivalent of one semester as a half-time teaching assistant
- Masters Degree Required or Admission to PhD: No, but Masters level requirements (32 hours minimum) must be met in order to enter State 2 of Ph.D. program.
- Preliminary Exam Required: Yes, at the end of State 2, in order to enter Stage 3
- Final Exam/Dissertation Defense Required: Yes, at end of Stage 3

For additional details and requirements, please refer to the Plant Biology Department’s online Graduate Handbook (http://www.life.illinois.edu/plantbio/gradhandbook.htm) and the University’s Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook).