CROP SCIENCES

http://www.cropsci.illinois.edu

Head of the Department: G. A. Bollero
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(217) 244-0396
E-mail: sdcarson@illinois.edu

Major: Crop Sciences
Degrees Offered: M.S., Ph.D.

Major: Bioinformatics
Degrees Offered: M.S.
Graduate Concentration: Crop Sciences

Major: Plant Biotechnology
Degrees Offered: M.S.
Graduate Concentration: Professional Science Masters

Online Program: Crop Sciences
Degrees Offered: M.S.

Graduate Degree Programs
The Department of Crop Sciences offers programs leading to the Master of Science and Doctor of Philosophy degrees. Great flexibility exists for planning programs in various areas, and no rigid curricula are prescribed. The following areas of specialization, along with some of the corresponding disciplines, indicate the breadth of opportunities:

- plant pathology including epidemiology, control, mycology, phytophacteryology, virology, nematology, and host plant resistance;
- plant breeding and genetics including cytogenetics, molecular genetics, quantitative genetics, and genetics of host-pathogen interactions;
- molecular biology and physiology including biochemistry, plant physiology, tissue culture, and plant-pathogen interactions;
- crop production including management, crop ecology, plant nutrition, and international crop production;
- weed science including biology, control, and ecology;
- bioinformatics;
- biometry including experimental design and data analysis;
- integrated pest management including response of crops to climate changes and fate of agricultural chemicals.

These areas of specialization apply to both agronomic and horticulture crops including ornamentals, turf grasses, fruits and vegetables.

The genomic and proteomic projects are generating large amounts of complex biological data that require effective storage, retrieval, analysis and interpretation. The bioinformatics degree program provides students with the skills necessary to augment the understanding and use of agricultural, biological and medical information and resources through the application of molecular, chemical, physical, computational, statistical, mathematical and informatic techniques. Students interested in this program may come with undergraduate training in one of the following areas:

1. biological and agricultural sciences,
2. statistical, mathematical and computer sciences,
3. informatics and engineering sciences.

Graduates from the bioinformatics program will be able to integrate basic and applied concepts in the three areas and apply them to biotechnology and medical research. For additional information, please see our website at cropsci.illinois.edu/graduate/programs/ (http://cropsci.illinois.edu/graduate/programs).

Admission
Applicants are considered for admission to the Master of Science program if they have a bachelor’s or equivalent degree comparable to that granted by the University of Illinois. Admission to the Ph.D. program will be considered for applicants with the M.S., those nearing completion of the M.S., and in some cases, those with the B.S. Because of the diversity of programs in the Department of Crop Sciences, the preparation that is needed varies considerably. Strong letters of reference, evident motivation to undertake graduate study, and good preparation in basic science courses enhance an applicant’s credentials. For some programs, greater emphasis is given to previous training in plant sciences, chemistry, or mathematics. A grade point average equivalent to at least a B in the last 60 semester hours of undergraduate coursework plus any graduate level work completed is required. All applicants whose native language is not English are required to submit the results of the TOEFL or IELTS as evidence of English proficiency. Official scores are required to be submitted directly from TOEFL/ETS or IELTS to the University. Additional information for international applicants can be found at: www.grad.illinois.edu/prospective/international.htm (http://www.grad.illinois.edu/prospective/international.htm). Results of the Graduate Record Examination (GRE) are required for applicants to all programs except the Online Master of Science degree program. Please see our web page for additional information: cropsci.illinois.edu/graduate/admission. (http://cropsci.illinois.edu/graduate/admission)

Graduate Teaching Experience
Although teaching is not a general Graduate College requirement, experience in teaching is considered an important part of the graduate experience in this program.

Faculty Research Interests
Please refer to the following webpage for a detailed listing of our faculty and their areas of interest cropsci.illinois.edu/directory/faculty (http://cropsci.illinois.edu/directory/faculty).

Facilities and Resources
The department of crop sciences has excellent laboratory, greenhouse, and field research facilities available for all types of research. A network of experimental locations throughout the state and cooperative arrangements with other states make thesis research possible under a wide range of environmental and climatic conditions. The department’s involvement in international programs may provide opportunities to conduct thesis research abroad. All phases of research, from bioinformatics, molecular biology and biophysics to field testing and crop production, are supported by state-of-the-art facilities. A map of the facilities can be seen at cropsci.illinois.edu/about/facilities (http://cropsci.illinois.edu/about/facilities).
Financial Aid

Illinois PSM students may not hold assistantships or other tuition and fee waiver-generating appointments; statutory waivers and tuition scholarships are accepted.

For all other graduate programs, fellowships and assistantships are available to outstanding students on a competitive basis. Awards for financial assistance are based principally on a candidate’s academic record, statement of plans, letters of reference, and GRE scores.

- Master of Science in Crop Sciences (http://catalog.illinois.edu/graduate/graduate-majors/crop-sciences/ms-crop)
- Master of Science in Bioinformatics, Crop Sciences Concentration (http://catalog.illinois.edu/graduate/graduate-majors/crop-sciences/master-science-bioinformatics)
- Master of Science in Plant Biotechnology, Professional Science Masters Concentration (http://catalog.illinois.edu/graduate/graduate-majors/crop-sciences/master-science-plant-biotechnology)

Doctor of Philosophy in Crop Sciences

Students are required to pass a preliminary examination within five semesters of first enrolling, not including the summer terms, and after substantial completion of the Ph.D. graded coursework requirement. The preliminary examination is comprised of both an oral and written component and students are expected to defend their Thesis Proposal at the oral component of the examination. Those students on the BA to PhD plan must also pass a Qualifying Exam. An acceptable dissertation is required. Residence requirements are the same as those of the Graduate College.

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Minimum Graded Coursework approved by the graduate guidance committee not including CPSC 594 or CPSC 598, with a grade point average of at least a B.</td>
<td>12</td>
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<tr>
<td>CPSC 594</td>
<td>Professional Orientation CPSC ((not required if it was taken in fulfillment of the master's degree.))</td>
<td>1</td>
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<tr>
<td>CPSC 598</td>
<td>Seminar (CPSC 598: Graduate Student Seminar (enrollment required each semester))</td>
<td>14</td>
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<tr>
<td>CPSC/PLPA 599</td>
<td>Thesis Research (minimum applied toward degree)</td>
<td>37</td>
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<tr>
<td>Total Hours</td>
<td></td>
<td>64</td>
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Other Requirements

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Other requirements and conditions may overlap</td>
<td></td>
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<tr>
<td>64 hours of in-residence credit beyond the M.S.</td>
<td></td>
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<tr>
<td>Qualifying Exam Required: No</td>
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<tr>
<td>Preliminary Exam Required: Yes</td>
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<td>Final Exam/Dissertation Defense Required: Yes</td>
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<td>Dissertation Deposit Required: Yes</td>
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<td>Minimum GPA: 3.0</td>
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1 For additional details and requirements refer to the department’s graduate handbook (http://cropsci.illinois.edu/sites/cropsci.illinois.edu/files/pdf/Grad_Student_Handbook_2013.pdf) and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook).

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

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Coursework approved by the graduate guidance committee not including CPSC 594 or CPSC 598, with a grade point average of at least a B.</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CPSC 594</td>
<td>Professional Orientation CPSC</td>
<td>1</td>
</tr>
<tr>
<td>CPSC 598</td>
<td>Seminar (Enrollment required each semester)</td>
<td>14</td>
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<tr>
<td>Maximum allowed toward degree</td>
<td></td>
<td></td>
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<tr>
<td>CPSC/PLPA 599</td>
<td>Thesis Research (minimum applied toward degree)</td>
<td>49</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>96</td>
</tr>
</tbody>
</table>

1 For additional details and requirements refer to the department’s graduate handbook (http://cropsci.illinois.edu/sites/cropsci.illinois.edu/files/pdf/Grad_Student_Handbook_2013.pdf) and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook).

The Online M.S. in Crop Sciences program enables students to strengthen their education typically through part-time study, as most students are working professionals. Courses are delivered mainly through online and other distance education technologies and occasional site-based programming (site-based courses are optional and not required to complete the degree). The Crop Sciences online M.S. program is typically completed as a non-thesis degree, but a thesis option can be pursued pending Departmental approval. (http://catalog.illinois.edu/graduate/graduate-majors/crop-sciences/ms-crop) The program has a 30-plus year history of providing high quality University of Illinois courses and began granting off-campus MS degrees in 1986 to agriculture professionals across Illinois, as well as in neighboring states. Students may enroll in individual courses for personal or professional advancement or may apply for admission to the master’s degree program in Crop Sciences. Students who successfully complete three qualifying courses may also receive a Professional Development Certificate in Crop Sciences.

The Online M.S. in Crop Sciences program also works in conjunction with the Natural Resources and Environmental Studies Online M.S. program and the Agriculture Education Online M.S. program to offer a diverse set of courses. The Department of Crop Sciences is looking to the future...
and the needs of non-traditional students. Therefore, new courses are continually in development for online delivery and blended formats. A student may complete their entire degree requirements online from anywhere in the world and they are available to in-state students and out-of-state students at the same tuition rates. For more information on Crop Sciences, the Online M.S. in Crop Sciences degree program or certificate offerings, please visit cropsci.illinois.edu/online-program (http://cropsci.illinois.edu/online-program).