PLANT BREEDING AND PLANT GENETICS, M.S.

The program leading to the master of science or the doctor of philosophy in plant breeding and plant genetics provides a broad exposure in the various disciplines involved and specialization in a particular area. The program is truly interdisciplinary with faculty participants from agronomy, biochemistry, botany, forest and wildlife ecology, genetics, horticulture, plant pathology, and statistics. Research areas include biochemical and molecular genetics, biometry, cytogenetics and cytology, genecology, genetics, plant breeding, and quantitative genetics.

The plant breeding and plant genetics program has been designated a UW System Center of Excellence. The 50–60 students majoring in the program come from throughout the United States and all over the world. Faculty have included members of the National Academy of Sciences, endowed chair professors, and recipients of the National Council of Plant Breeders "Genetic and Plant Breeding Award." The University of Wisconsin leads the nation in the number of plant breeding programs and number of graduate students trained. Graduates are found in responsible positions with academic institutions, research institutions, and private companies involved in molecular to cultivar development work.

REQUIREMENTS

MINIMUM DEGREE REQUIREMENTS AND SATISFACTORY PROGRESS

To make progress toward a graduate degree, students must meet the Graduate School Minimum Degree Requirements and Satisfactory Progress (http://guide.wisc.edu/graduate/#policiesandrequirementstext) in addition to the requirements of the program.

MASTER’S DEGREE

M.S.

MINIMUM GRADUATE DEGREE CREDIT REQUIREMENT

30 credits

MINIMUM GRADUATE RESIDENCE CREDIT REQUIREMENT

16 credits

MINIMUM GRADUATE COURSEWORK (50%) REQUIREMENT

Half of degree coursework (15 out of 30 total credits) must be in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide (http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle).

PRIOR COURSEWORK REQUIREMENTS: GRADUATE WORK FROM OTHER INSTITUTIONS

With program approval, students are allowed to count no more than 9 credits of graduate coursework from other institutions. coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

PRIOR COURSEWORK REQUIREMENTS: UW–MADISON UNDERGRADUATE

No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

PRIOR COURSEWORK REQUIREMENTS: UW–MADISON UNIVERSITY SPECIAL

With program approval, students are allowed to count no more than 9 credits of coursework numbered 300 or above taken as a UW–Madison University Special student. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

CREDITS PER TERM ALLOWED

15 credits

PROGRAM-SPECIFIC COURSES REQUIRED

Contact program for list of specific courses.

OVERALL GRADUATE GPA REQUIREMENT

3.00 GPA required

OTHER GRADE REQUIREMENTS

Students must earn a B or above in all core curriculum coursework.

PROBATION POLICY

The status of a student can be one of three options:

1. Good standing (progressing according to standards; any funding guarantee remains in place).
2. Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status.
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

ADVISOR / COMMITTEE

Students are recommended to convene a yearly progress report meeting with their thesis committee.

ASSESSMENTS AND EXAMINATIONS

A formal M.S. thesis is required.

TIME CONSTRAINTS

Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

LANGUAGE REQUIREMENTS

No language requirements.

ADMISSIONS

A bachelor’s degree from an approved institution, an undergraduate grade point average of at least 3.0 (on a 4.0 scale), and an undergraduate major suitable for entering the proposed field are required. Normally, students will have had undergraduate training in the biological or
agricultural sciences. Satisfactory preparation for graduate study should include mathematics through integral calculus, chemistry through organic chemistry with lab, physics through light and electricity, and a comprehensive biology sequence. Additional course work in these areas may be required during the first year of graduate study if deficiencies exist.

LEARNING OUTCOMES

KNOWLEDGE AND SKILLS

• Articulates the theories, research methods, and approaches to inquiry in the field of plant breeding and plant genetics.
• Identifies sources and assembles evidence pertaining to questions in the field of plant breeding and plant genetics.
• Demonstrates understanding of the primary field of study in a global context.
• Selects and utilizes the most appropriate methodologies and practices.
• Synthesizes information pertaining to questions in the field of plant breeding and plant genetics.
• Communicates clearly in ways appropriate to the field of plant breeding and plant genetics.

PROFESSIONAL CONDUCT

• Recognizes and applies principles of ethical and professional conduct.

PEOPLE

Faculties: Agronomy—Ane, Casler, de Leon, H. Kaeppler, S. Kaeppler, Tracy; Biochemistry—Amasino, Bednarek; Botany—Baum, Maeda, Waller; Entomology—Brunet; Genetics—Masson, Zhong; Horticulture—Bamberg, Bethke, Dawson, Endelman Goldman, Havey (chair), Jansky, Jiang, Krysan, Nienhuis, Palta, Patterson, Simon, Spooner, Weng, Zalapa; Plant Pathology—Bent, Rouse; Statistics—Broman, Yandell