

# PLANT BREEDING AND PLANT GENETICS, PHD

## REQUIREMENTS

### MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirementstext>), in addition to the program requirements listed below.

### MAJOR REQUIREMENTS

#### MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

#### Mode of Instruction Definitions

**Accelerated:** Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

**Evening/Weekend:** Courses meet on the UW-Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

**Face-to-Face:** Courses typically meet during weekdays on the UW-Madison Campus.

**Hybrid:** These programs combine face-to-face and online learning formats. Contact the program for more specific information.

**Online:** These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

### CURRICULAR REQUIREMENTS

Requirement Detail	
Minimum Credit Requirement	51 credits
Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	26 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: <a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a> ( <a href="https://policy.wisc.edu/library/UW-1244/">https://policy.wisc.edu/library/UW-1244/</a> ).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: <a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a> ( <a href="https://policy.wisc.edu/library/UW-1203/">https://policy.wisc.edu/library/UW-1203/</a> ).

**Other Grade Requirements** PhD candidates should maintain a 3.0 GPA in all core curriculum courses and may not have any more than two Incompletes on their record at any one time.

**Assessments and Examinations** Doctoral students must pass both the oral preliminary and final thesis exams.

Doctoral students must pass two exams to advance to candidacy.

- The first is a written qualifying exam which tests a student's breadth of knowledge in plant science. Students must attempt the qualifying exam within the first two years of enrolling in the PhD program.
- The second is an oral preliminary exam which allows the student's thesis committee to critique their research proposal and test the student's knowledge base for the proposed research. Students must also pass a final thesis defense and exam.

**Language Requirements** No language requirements.

**Graduate School Breadth Requirements** The doctoral minor or graduate/professional certificate is not required for students in the Plant Breeding and Plant Genetics degree. Students who wish to complete a cohesive body of work outside the major may wish to obtain a doctoral minor or graduate/professional certificate, and should declare them at the certification meeting. Requirements are determined by the minor or certificate department or program.

### REQUIRED COURSES

The specific program of study toward a doctoral degree is developed by the student and their major professor. Considerable flexibility in the selection of courses is permitted to meet the needs and interests of the candidate. Of the required 51 credits, students must complete a minimum of 17 credits of coursework (not research credit) and at least 11 credits must come from the Core Curriculum, including at least 2 credits in each of Sections A, B, and C. Students must also complete 3 credits of Plant Breeding seminar (HORT/AGRONOMY/GENETICS 957 Seminar-Plant Breeding).

#### Core Curriculum

Code	Title	Credits
<b>A. Plant Breeding</b>		
HORT/AGRONOMY 501	Principles of Plant Breeding	3
HORT/AGRONOMY 502	Techniques of Plant Breeding	1
HORT/AGRONOMY 812	Selection Theory for Quantitative Traits in Plants	2
<b>B. Genetics</b>		
HORT/GENETICS 550	Molecular Approaches for Potential Crop Improvement	3
AGRONOMY/AN SCI/GENETICS/HORT 615	Genetic Mapping	3
PL PATH 517	Plant Disease Resistance	2-3
GENETICS/BIOCHEM 631	Plant Genetics and Development	3

GENETICS/ BIOCHEM/ BOTANY 840	Regulatory Mechanisms in Plant Development	3
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#### **C. Quantitative Genetics and Biometry**

HORT/F&W ECOL/ STAT 572	Statistical Methods for Bioscience II	4
HORT/ AGRONOMY 811	Biometrical Procedures in Plant Breeding	3
AGRONOMY 771 & AGRONOMY 772	Experimental Designs and Applications in ANOVA	2
AN SCI 865	Design and Analysis of Biological Studies	4

#### **D. Additional Core Courses**

PL PATH/BOTANY/ ENTOM 505	Plant-Microbe Interactions: Molecular and Ecological Aspects	3
BIOCHEM/ BOTANY 621	Plant Biochemistry	3
GENETICS 633	Population Genetics	3
BOTANY 500	Plant Physiology	3-4