

Graduate Program in
Plant Breeding and Plant Genetics

Master's Degree

Program Handbook

June 2013

CONTENTS

1. PROGRAM AUTHORITY

- 1.1 Graduate School
- 1.2 Departments

2. ADMISSION TO THE PROGRAM

- 2.1 Graduate School Admission Requirement
- 2.2 PBPG Master's Program Admission Requirements
- 2.3 Admission Timeline
- 2.4 Selecting a Major Professor

3. REQUIREMENTS FOR A MASTERS DEGREE IN PBPG

- 3.1 Program Course Requirements
- 3.2 Seminar Requirement
- 3.3 Grades
- 3.4 Major Professor and Master's Committee
- 3.5 Examination and Review Procedures

1. PROGRAM AUTHORITY

1.1 Graduate School

The UW-Madison Graduate School is the ultimate authority for granting Master's degrees at the University. The Program in Plant Breeding and Plant Genetics (PBPG) administers a Graduate Degree Program under the authority of the Graduate School. If completed successfully, the Program's minimum requirements meet all Graduate School requirements for conferring a Master's degree.

1.2 Departments

The authority to set degree requirements beyond the minimum required by the Graduate School lies with the PBPG faculty. The policies described in this handbook have been approved by the program faculty as a whole, and are subject to periodic review and update. Administration of the PBPG program is overseen by the Executive Committee, whose membership is determined by the Chairs of member departments.

2. ADMISSION TO THE PROGRAM

Student admission into the PBPG Graduate Program is contingent on meeting requirements set forth by the Graduate School and by the PBPG faculty.

2.1 Graduate School Admission Requirements

The Graduate School web site (<http://www.wisc.edu/grad/>) lists the minimum University admission standards, including expected degree achievement from an accredited institution, GPA, and English language proficiency.

2.2 PBPG Master's Program Admission Requirements

2.2.1 For admission to the Master's Program in PBPG, a student must have completed a BS or BA degree at a recognized, accredited college or university prior to enrollment in the Masters Program.

2.2.2 Students must meet the general requirements of the UW-Madison Graduate School. Course deficiencies can be made up during the first year of a student's graduate studies.

- 2.2.3 Students are expected to have completed coursework in supporting fields (mathematics, physics, biology, genetics, and chemistry), ideally obtained by advanced courses taken during the undergraduate years.

2.3 Admission Timeline

The Program application deadlines for each semester can be found on the Graduate School website: <http://www.grad.wisc.edu/education/mas/531.html>

2.4 Selecting a Major Professor

Admission into the PBPG Master's Degree Program is contingent on the applicant identifying a member of the PBPG Faculty to serve as the student's Major Professor. A Major Professor serves as the student's faculty mentor and supervises the student's thesis research. In order to gain admission into the program it is therefore very beneficial for an applicant to directly contact potential Major Professors to discuss the possibility of studying under their guidance.

3. REQUIREMENTS FOR A MASTERS DEGREE IN PBPG

3.1 Program Course Requirements

- 3.1.1 Rectifying Admission Deficiencies. Any deficiencies identified in the student's background course work by their Master's Committee will be detailed in writing to the student, and must be made up during the first year of graduate study.
- 3.1.2 Graduate School Requirements. A minimum of 12 credits total graduate-level coursework taken at the UW-Madison are required for the MS degree in PBPG, with a minimum of 9 credits selected from the Core Curriculum (Appendix 5.A and <http://plantbreeding.wisc.edu/wp-content/uploads/2007/10/pbpgcoursetable.gif>) with at least 2 credits in Section A and 2 credits in Section B or C. In addition, 2 credits of Plant Breeding Seminar are required.
- 3.1.3 Program Requirements. The specific program of study towards a Master's 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. Students often complete the requirements for a Master's degree in one-and-a-half years, and three years is usually considered the maximum time. The student must

complete at least 24 credits while enrolled in Graduate School and write a Master's Thesis that is acceptable to the student's final examining committee. A maximum of 3 credits of Special Problems (699) classes may be counted towards this 24 credit total.

- 3.1.4 Additional Course Work. At the discretion of a student's Major Professor or their Master's Committee, additional remedial or advanced course work may be required.

3.2 Seminar Requirement

- 3.2.1 Graduate Seminar. Master's Degree students must enroll in a graduate level seminar class for at least two semesters and obtain a passing grade for that class. Formal seminar classes offered by departments may be used to satisfy this requirement.

3.3 Grades

The Graduate School requires all MS students to achieve a cumulative grade point average (GPA) of 3.0 or better in all lecture and laboratory courses taken while enrolled as a graduate student at UW-Madison. Grades in research are not included in this average.

3.4 Major Professor and Master's Committee

- 3.4.1 Major Professor: Every graduate student must have a faculty advisor (Major Professor) who is a member of the PBPG faculty. The Major Professor advises the student about course work and supervises the student's research if they are writing a Master's Thesis. The major professor must approve the student's coursework and research direction.

- 3.4.2 Masters Committee. A Master's Committee is composed of at least 3 current UW-Madison faculty members, including the Major Professor. The Master's Committee is empowered by the Program to advise the student regarding coursework and thesis content, and conduct the final Master's oral examination.

Prior to the end of the first year of graduate study the student, in consultation with their Major Professor, should select 2 members of the UW-Madison faculty to serve on their Master's Committee. It is the student's responsibility to seek and obtain (verbal) approval from the faculty selected to serve on this committee.

3.5 Examination and Review Procedures

- 3.5.1 Final Oral Exam. All students in the Master's Program are required to pass a Final Oral Exam in order to earn a Master's Degree in PBPG. The final oral examination deals with the breadth of knowledge in the field of PBPG, as well as the content of the Master's Thesis.

The oral examination typically lasts up to 2 hrs, or until the committee is satisfied with their individual evaluations. The student is then excused from the room, and after deliberation, the members of the Master's Committee decide whether or not to endorse the degree completion.

To pass the final examination, a student must receive no more than one dissenting vote from the graduate committee. A missing signature on the Warrant is considered a dissent. At the discretion of the student's Master's Committee, a student may repeat a failed final exam once. Failure of the final examination two times will result in the student being dropped from the Program.

- 3.5.2 Master's Warrant. At least one month prior to the anticipated Final Oral Exam date, the student must contact the Program office and file a "Request for Master's Examination Form." This process initiates Graduate School and Program activities that certify your Master's Committee membership and confirm your completion of required course work. The result of this process is the issue of a formal "Master's Warrant" to be signed upon successful conclusion of the final exam. The student is responsible for organizing the defense date and reserving appropriate rooms. Program staff are available to assist students with these organizational matters. Students who do not initiate warrant requests one month ahead of time may face postponement of their anticipated Final Oral Exam.

- 3.5.3 Thesis. Students are expected to carry out an independent research project during their enrollment as a student in the Master's program. This research will be the basis of their Master's Thesis. The thesis must be formatted according to the guidelines of the Graduate School, present evidence of a substantial intellectual effort by the student, and meet all standards set by the student's Master's Committee. If the work is the result of collaborative enterprises, the writing must clearly define those portions representing the student's own contribution. The thesis must also include a substantive review of literature relevant to the project. It should be written with a high level of literary skill, such as would be found in leading journals in that research area.

The Graduate School website hosts a *Guide to Preparing Your Master's Thesis* which will help you prepare your final thesis:

<http://www.grad.wisc.edu/education/completedegree/mguide.html>

The thesis must be completed and distributed to the members of the student's Master's Committee *not less than two weeks before* the date of the Final Oral Examination.

After successful completion of the Final Oral Exam, an unbound, fully corrected and complete copy of the thesis must be deposited with Memorial Library. Students are responsible for all costs associated with depositing his or her thesis. Students are also responsible for knowing and meeting all thesis filing deadlines for degree completion. The Graduate School web site provides clear instructions for preparing your thesis for deposit with Memorial Library.

The student should visit the Thesis Coordinator in Room 217 Bascom Hall for a thesis format review, or to clarify any questions about the approved use of tables, graphs, charts, etc.

Immediately after the Oral Examination, the student should contact the Graduate School (262-2433) to arrange an appointment for the final thesis review and deposition of the Warrant. Please remember that Graduate School appointment times fill rapidly near the end of each semester. All thesis corrections and revisions must be final before this review. No changes can be accepted on the copy that is submitted to the Graduate School after the final review.

APPENDIX 5.A PBPG Course Table

Course Number	Credits	Course Title	Category
Hort/Agron 501	3	Principles of Plant Breeding	A
Hort/Agron 502	1	Techniques of Plant Breeding	A
Hort/Agron 850	3	Advanced Plant Breeding	A
Hort 550	3	Molecular Approaches for Potential Crop Improvement	B
Hort/Agron 561	2-3	Introductory Cytogenetics	B
Genetics 631	3	Plant Genetics	B
Genetics 701	3	Advanced Genetics	B
Genetics 703	2	Topics in Eukaryotic Regulation	B
Botany 840	3	Regulatory Mechanisms in Plant Development	B
Stat 572	4	Statistical Methods for Bioscience II	C
Genetics 629	3	Evolutionary Genetics	C
Agron 771	1	Experimental Design	C
Agron 772	1	Applications in ANOVA	C
Agron/Hort 811	3	Biometrical Procedures in Plant Breeding	C
Plant Path 505	3	Plant-Microbe Interactions: Molecular and Ecological Aspects	D
Plant Path 517	3	Plant Disease Resistance	D
Botany 563	3	Phylogenetics Analysis of Molecular Data	D
Biochem 621	3	Plant Biochemistry	D
Hort/Agron/Bot 555	2-3	Plant Functional Genomics and Bioinformatics	D
Agron/Hort 957	1	Plant Breeding Seminar	D
<p>Category Key: A = Plant Breeding B = Genetics and Molecular Biology C = Quantitative Genetics and Biometry D = Additional Core Courses</p>			