Plant and Soil Sciences

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Graduate study offered in the Department of Plant and Soil Sciences leads to the Master of Science in Agriculture degree with concentrations in Agronomy, Horticulture, or Weed Science and also to the Doctor of Philosophy degree in Agricultural Science with a concentration in Agronomy, Horticulture, or Weed Science. The department has an extensive research program which provides a diversity of problems for thesis and dissertation research under the supervision of experienced and highly trained scientists. The Department of Plant and Soil Science offers graduate programs in Plant Breeding and Genetics, Molecular Biology, Crop Modeling, Agronomy, Soil Science, Crop Physiology, Weed Science, Turfgrass Science, Remote Sensing, and Horticulture.

Graduate programs are designed to develop skills in research techniques in reference to the individual needs of each student. This program is developed and administered by a departmental committee within the student's area of specialization and may include courses in mathematics and statistics, biology, chemistry, biochemistry, remote sensing, etc., as well as agronomic, horticultural, and weed science courses. Graduate assistantships are provided, subject to availability of funds. An undergraduate grade average of B or better is required to be eligible for an assistantship. Requests for additional information should be addressed to:

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Highly qualified undergraduates at Mississippi State University are encouraged to consider applying to the combined B.S./M.S. degree program. This program permits concurrent enrollment in the Agronomy or Horticulture B.S. and the Agronomy, Horticulture, or Weed Science M.S. degree programs during the student's final year of undergraduate studies with enrollment in up to nine hours of graduate courses for which undergraduate credit is also awarded. Students need to consult with a potential graduate advisor to ensure graduate credit could be applied to a program of study for the M.S. degree. Application to this program may be made as early as the end of the junior year (i.e., after completion of 90 or more hours of graded undergraduate courses). This option is only available for students pursuing a thesis-based Master of Science degree in Agriculture with a concentration in Agronomy, Horticulture, or Weed Science.

Departmental Admission Criteria

M.S. in Agriculture and Ph.D. in Agricultural Science with concentrations in Agronomy, Horticulture, or Weed Science:

- GPA—
  For Master of Science: Agronomy 2.75; Horticulture 2.75; Weed Science 3.00.
  For Doctor of Philosophy: Agronomy 3.00; Horticulture 3.00; Weed Science 3.25 on graduate work
- TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing Systems) score—
  Agronomy: TOEFL score of 500 PBT (173 CBT; 61 iBT) or IELTS score of 5.5
  Horticulture: TOEFL score of 500 PBT (173 CBT; 61 iBT) or IELTS score of 5.5
  Weed Science: TOEFL score of 550 PBT (213 BT; 79 iBT) or IELTS score of 6.5
- GRE—All graduate programs require submission of GRE scores.
- A non-thesis M.S. does not qualify toward admission to a Ph.D. program in the Department of Plant and Soil Sciences at Mississippi State University.

Requirements for entrance into the combined B.S./M.S. program in Agronomy, Horticulture, or Weed Science are:

1. a GPA of 3.50 or higher for all undergraduate work;
2. submission of a standard application for graduate studies in the Department of Plant and Soil Sciences;
3. three letters of recommendation from individuals familiar with the applicant's academic performance;
4. submission of scores from the Graduate Record Examination (GRE) General Test prior to enrolling in graduate courses, and
5. a statement of professional interests and goals from the applicant, including specification of one or more potential major professors.

For students enrolled in a combined B.S./M.S. program, the MSU Graduate Council has established these guidelines in cooperation with the Registrar's Office:

Once the student is accepted into the combined program, the student and the advisor may select up to 9 hours that will satisfy both undergraduate and graduate requirements. These courses may be split-level (i.e., 4000-6000 level) or 8000 level classes, and the student should take the courses for graduate credit (i.e., 6000-level or higher). To do so, he/she must submit a completed form to the Office of the Graduate School requesting such permission: http://www.grad.msstate.edu/forms/pdf_forms/undergraduate_request_to_enroll_in_graduate_course.pdf . The OGS will notify the student by MSU email when the request is approved. The combination of undergraduate and graduate credit hours may not exceed 16 hours within a semester. After successfully completing the graduate-level classes, the student and undergraduate advisor will submit a request to the Registrar's Office to grant credit for the course also at the undergraduate level with the same grade awarded as received for the graduate course. In the case of a split-level class, the transcript will show credit for both the 4000- and 6000-level on the transcript. In the case of an 8000-level class, a special topics undergraduate course of the same title will be entered on the transcript to allow dual credit.

Students are permitted to opt out of the combined program at any time, at which point they could complete only the undergraduate portion of the program. No additional dual counting of courses would occur after the student leaves the combined program.

Students will receive the bachelor's degree once the requirements for that degree are met. Students will be required to complete all of the requirements for both the bachelor's and master's degrees in order to receive both degrees, and those requirements will be identical to the requirements for students enrolled in the traditional B.S. and M.S. programs. Students will be classified as undergraduates until they fulfill at the requirements for the undergraduate degree. At that time they will be classified as graduate students and will be subject to the guidelines pertaining to the M.S. degree. Students admitted to this program should read and understand the guidelines in the Department of Plant and Soil Sciences Graduate Student Handbook before registering for any courses for graduate credit.

Provisional Admission

A student who has not met the requirements stipulated by the University for admission to graduate study (GPA of 2.75) may be granted admission as a degree-seeking graduate student with provisional status. The student will be eligible for advancement to regular status after attaining a 3.00 GPA on the first 9 hours of graduate-level courses taken at Mississippi State University (courses with an S grade, transfer credits, or credits earned while in Unclassified status cannot be used to satisfy this requirement). If a GPA of 3.00 is not attained, the provisional student may be dismissed from the graduate program.

Academic Performance

Students in the M.S. and Ph.D. degree programs must maintain a 3.00 GPA after admission to the program. No grade below C will be accepted for graduate credit. More than two grades of C or below constitute grounds for dismissal.

Master of Science in Agriculture with Agronomy Concentration - Thesis

Graduate-level coursework	12
8000-level coursework	12
Research/thesis	6
Total Hours	30

A thesis defense is required. An exit seminar describing thesis research is also required.

Master of Science in Agriculture with Agronomy Concentration - Non-Thesis

Graduate-level coursework		12
8000-level coursework		15
PSS 7000	Directed Individual Study in Plant and Soil Sciences	3
Total Hours		30

The student must develop a research paper approved by the student's graduate committee. An oral comprehensive exam is required.

Doctor of Philosophy in Agricultural Science with Agronomy Concentration

PSS 9000	Dissertation Research /Dissertation in Plant and Soil Sciences	20
PSS 8811	Seminar [1]	1
PSS 8831	Seminar [2]	1
Total Hours		22

1 To be done in the early stages will present the research proposal and include a review of relevant literature.

2 Exit seminar will describe the dissertation research.

Agronomy Concentration Prerequisite and Core Courses

As specified by the student's major professor and graduate committee.

Master of Science in Agriculture with Horticulture Concentration - Thesis

ST 8114	Statistical Methods	4
PSS 8811	Seminar	1
Graduate-level coursework		7
8000-level coursework		12
Research/thesis		6
Total Hours		30

A thesis defense is required. An exit seminar describing thesis research is also required.

Master of Science in Agriculture with Horticulture Concentration - Non-Thesis

ST 8114	Statistical Methods	4
PSS 8811	Seminar	1
Graduate-level coursework		7
8000-level coursework		15
PSS 7000	Directed Individual Study in Plant and Soil Sciences	3
Total Hours		30

The student must develop a research paper approved by the student's graduate committee. An oral examination, a written examination, or both are required.

Doctor of Philosophy in Agricultural Science with Horticulture Concentration

PSS 9000	Dissertation Research /Dissertation in Plant and Soil Sciences	20
PSS 8811	Seminar [1]	1
PSS 8831	Seminar [2]	1
BCH 6603	General Biochemistry	3
ST 8214	Design and Analysis of Experiments	4
Graduate-level PSS coursework approved by advisor		21
Total Hours		50

1 To be done in the early stages will present the research proposal and include a review of relevant literature.

2 Exit seminar will describe the dissertation research.

A qualifying examination is required at the beginning of the student's third semester. The student must successfully complete a program of study as approved by the major advisor and graduate committee. The student must pass a preliminary examination presented by the graduate committee. A dissertation is required of all candidates for the doctorate.

Horticulture Concentration Prerequisite and Core Courses

As stipulated by the major professor, the departmental graduate coordinator, and the dean.

Horticulture (Floral Management) Minor

PSS 6013	Principles of Floral Design	3
PSS 6023	Floral Management	3
PSS 6033	Case Studies in Floral Management	3
PSS 6043	International Horticulture	3
Total Hours		12

The graduate minor is available for graduate students seeking training in this field to complement their graduate degree. Students seeking the minor are required to complete the 12-hour program. The student's graduate committee must include a minor committee member from the Department of Plant and Soil Sciences.

Master of Science in Agriculture with Weed Science Concentration

Graduate-level coursework	12
8000-level coursework	12
Research/thesis	6
Total Hours	30

An oral thesis defense is required. An exit seminar describing thesis research is also required.

Doctor of Philosophy in Agricultural Science with Weed Science Concentration

PSS 9000	Dissertation Research /Dissertation in Plant and Soil Sciences	20
PSS 8811	Seminar [1]	1
PSS 8831	Seminar [2]	1
Total Hours		22

1 To be done in the early stages will present the research proposal and include a review of relevant literature.

2 Exit seminar will describe the dissertation research.

A qualifying examination after completion of two semesters, a preliminary exam after completion or within 6 hours of completing coursework, and an oral exam are required. Original research, a dissertation, a preliminary exam and an oral defense are required.

Weed Science Concentration Prerequisite and Core Courses

As specified by the student’s major professor and graduate committee.