

MS in Plant, Insect and Microbial Sciences

Degree Requirements

To satisfy the course requirements for a master's degree, a student must complete:

- A minimum of 30 credit hours from courses numbered 7000 - 9000
- 15 credit hours (towards the 30 credit hour requirement) must be from courses numbered at the 8000 or 9000 level
- 12 credit hours (towards the 30 credit hour requirement) can be satisfied by research, readings and problems courses
- For the Horticulture Program Area, at least 6 credits must be from formal courses, excluding Problems and other independent study courses and only 6 credit hours of research (PLNT_SCI 8090 or PLNT_SCI 8980) can count towards the 30 credit hour requirement, even though additional hours of research can be taken.
- All students must participate in an approved teaching opportunity or an approved Extension program.

A student shall maintain a minimum grade point average of 3.0. All divisional course requirements (and any additional requirements set by the student's examination committee) shall be completed in a timely manner. All advisors will meet annually with each of their graduate students. They will discuss the student's performance, any problems that exist and any suggestions for improvement. The advisor will provide the student and the director of graduate studies with a written summary of the meeting as part of the annual program assessment process.

The division-wide course requirements for the master's degree are:

PLNT_SCI 8010	Professionalism and Ethics	2
Participation in the seminar series		
PLNT_SCI 9087	Seminar in Plant Science	1
PLNT_SCI 7087	Seminar (must enroll twice)	1
PLNT_SCI 8090	Thesis Research *	1-10
or PLNT_SCI 8980	Non-Thesis Research	

Crop, Soil and Pest Management

Core Requirements:

PLNT_SCI 8010	Professionalism and Ethics	2
PLNT_SCI 9087	Seminar in Plant Science	1
PLNT_SCI 7087	Seminar (must enroll twice)	1
PLNT_SCI 8090	Thesis Research *	1-10
or PLNT_SCI 8980	Non-Thesis Research	

Entomology

Core Requirements:

PLNT_SCI 7710	Systematic Entomology	5
PLNT_SCI 7820	Principles of Insect Physiology	4
PLNT_SCI 8010	Professionalism and Ethics	2
PLNT_SCI 9087	Seminar in Plant Science	1
PLNT_SCI 7087	Seminar (must enroll twice)	1
PLNT_SCI 9810	Insect Ecology	3
PLNT_SCI 8090	Thesis Research *	1-10
or PLNT_SCI 8980	Non-Thesis Research	

Horticulture

Core Requirements:

PLNT_SCI 8010	Professionalism and Ethics	2
PLNT_SCI 9087	Seminar in Plant Science	1
PLNT_SCI 7087	Seminar (must enroll twice)	1
PLNT_SCI 8090	Thesis Research *	1-10
or PLNT_SCI 8980	Non-Thesis Research	

Plant Breeding, Genetics and Genomics

Core Requirements:

PLNT_SCI 8010	Professionalism and Ethics	2
PLNT_SCI 9087	Seminar in Plant Science	1
PLNT_SCI 7087	Seminar (must enroll twice)	1
PLNT_SCI 8090	Thesis Research *	1-10
or PLNT_SCI 8980	Non-Thesis Research	

Elective Courses

Bridging Courses to Expand Your Background in Plant Biology

PLNT_SCI 7315	Crop Physiology	3
PLNT_SCI 7320	Molecular Plant Physiology	3
PLNT_SCI 7325	Advanced Plant Breeding	3
PLNT_SCI 7500	Biology and Pathogenesis of Plant-Associated Microbes	4
PLNT_SCI 7550	Plant Biotechnology	4

Elective Courses to Fulfill the Requirement for 15 Credit Hours at the 8000 or 9000 Level

AN_SCI 8430	Introduction to Bioinformatics Programming	4
BIO_SC 8310	Fungal Genetics and Biology	3
PLNT_SCI 8330	Molecular Breeding and Genomic Technology	3
PLNT_SCI 8362	Introduction to Plant Metabolism	2
PLNT_SCI 8365	Introduction to Molecular Cell Biology	2
PLNT_SCI 9415	Advanced Plant Physiology	1-3
PLNT_SCI 9540	Genetics of Plant-Microorganism Interaction	3
PLNT_SCI 9810	Insect Ecology	3

Plant Stress Biology

Core Requirements:

Choose one course:		
PLNT_SCI 7320	Molecular Plant Physiology	3
PLNT_SCI 7315	Crop Physiology	3
Choose one course:		
PLNT_SCI 7500	Biology and Pathogenesis of Plant-Associated Microbes	4
PLNT_SCI 8505	Plant Stress Biology	3

Additional Requirements

PLNT_SCI 8010	Professionalism and Ethics	2
PLNT_SCI 8530	Research with Plant Stress Agents	3
PLNT_SCI 9087	Seminar in Plant Science	1
PLNT_SCI 7087	Seminar (must enroll twice)	1
PLNT_SCI 8090	Thesis Research *	1-10
or PLNT_SCI 8980	Non-Thesis Research	

Participation In One of Two Readings Courses Each Year

PLNT_SCI 7965	Readings in Plant Stress Biology	1-9
PLNT_SCI 7970	Readings in Plant-Insect Interactions	1
Elective Courses to Fulfill the 30 Credit Hour Minimum		
AN_SCI 8430	Introduction to Bioinformatics Programming	4
BIO_SC 8300	Advanced Plant Genetics	3
BIOCHM 8434	Signaling in Molecular Cell Biology	3
INFOINST 8005	Applications of Bioinformatics Tools in Biological Research	3
BIO_SC 8310	Fungal Genetics and Biology	3
PLNT_SCI 8330	Molecular Breeding and Genomic Technology	3
PLNT_SCI 8362	Introduction to Plant Metabolism	2
PLNT_SCI 8365	Introduction to Molecular Cell Biology	2
PLNT_SCI 9415	Advanced Plant Physiology	1-3
PLNT_SCI 9440	Applied Quantitative and Statistical Genetics	3
PLNT_SCI 9540	Genetics of Plant-Microorganism Interaction	3
PLNT_SCI 9810	Insect Ecology	3
Additional Entry Level Courses		
PLNT_SCI 7550	Plant Biotechnology	4
PLNT_SCI 7400	Plant Anatomy	4
STAT 7070	Statistical Methods for Research	3

* PLNT_SCI 8980 take for 1 credit hour.

Sample Plan of Study

There are several areas of study within the MS in Plant, Insect and Microbial Sciences degree. A student can select training from a wide range of courses and research programs to prepare for a career in research, teaching, industry and extension work. Note: Areas of Study will not appear on transcripts or diplomas. Each program area emphasizes a customized approach towards the course of study. Each student will work with their advisor and graduate committee to develop a course of study best suited to the student's educational and career goals.

Thesis Requirements

A thesis is required for the M.S. degree in Plant, Insect and Microbial Sciences. The thesis must demonstrate the student's capacity for research and independent thought. Organization of the thesis is subject to approval of the Master's Committee.

The Thesis Defense will consist of a research seminar and final examination, the latter to demonstrate the student's mastery of the academic focus of the chosen Graduate Program Area. It is the student's responsibility to check the Graduate School's graduation deadlines when scheduling the exam. The candidate must be enrolled to defend the thesis. The examination cannot be administered when MU is not officially in session.

The seminar will be presented by the student for division faculty, staff, students, committee members, and other interested persons. It must summarize the thesis research conducted by the student during the Master's program. The seminar will be followed by the final, oral examination administered by the Master's Committee. Although the general protocol followed during the oral examination shall be at the discretion of the Major Advisor, a typical oral examination lasts about

2 hours and is divided between defense of the thesis and non-thesis subject matter. The research seminar should be scheduled the same day (preferably) or during the week preceding the remainder of the final examination.

Admissions

Applicants are required to meet two sets of minimum qualifications for admission: the requirements of the MS in Plant, Insect, and Microbial Sciences (<https://gradschool.missouri.edu/degrecategory/plant-insect-microbial-sciences/>) and the minimum requirements of the Graduate School (<https://gradschool.missouri.edu/admissions/eligibility-process/>). Because requirements vary, you *must* refer to a degree program's graduate admission page to learn about specific admission criteria, application deadlines, eligibility and application process. Your application materials will be reviewed by both the Graduate School and the degree program to which you've applied before official admission to the University of Missouri.

Financial Aid from the Program

Financial assistance is available to qualified students at both the MS and PhD levels, as either fellowships or research assistantships. Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.