PLANT SCIENCE AND TECHNOLOGY, PHD

Plant Science and Technology focuses on the scientific principles and technology underlying the cultivation of agricultural plants and their utilization for food, feed, fiber, energy, and well-being. We find and disseminate answers to problems and discover opportunities concerning efficiency and sustainability of plant production, improvements in quality, and methods for safe and environmentally-sound practices.

An advanced degree in Plant Science and Technology prepares graduates for professional careers in research, teaching, and Extension at academic and government institutions, and for research and technical careers in industry.

The Department of Plant and Agroecosystem Sciences at UW-Madison is home to some of the most highly ranked and regarded graduate programs in the nation. We are committed to integrating research, teaching, and outreach to address issues of food scarcity, food quality and nutrition, environmental impact, and sustainability.

The program maintains or has access to excellent facilities for research, including fully equipped laboratories, growth chambers and greenhouses, and complete field facilities at nearby agricultural research stations and throughout the state.

ADMISSIONS

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Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. ***Applicants must meet* the minimum requirements *(https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s).*** Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

Requirements	Detail
Fall Deadline	December 1
Spring Deadline	September 1
Summer Deadline	December 1
GRE (Graduate Record Examinations)	Not required.
English Proficiency Test	Refer to the Graduate School: Minimum Requirements for Admission policy: https://policy.wisc.edu/library/UW-1241 (https://policy.wisc.edu/library/UW-1241/).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation	3

APPLICATION CHECKLIST

A complete application should include the following items:

1. Graduate School application and application fee.
2. Supplementary Application: The supplementary application will appear as a part of the Graduate School's electronic application once the applicant selects Plant Science and Technology PhD.
3. Statement of Purpose: Your essay should be a concise description of your reasons for choosing to study plant science and technology at the University of Wisconsin-Madison. Please include your research interests and career goals as well as a description of your preparation for graduate study including relevant coursework, related employment, research experience, publications, presentations, awards, and honors.
4. Transcripts: We require all applicants to submit an unofficial transcript in PDF format to their online application. If an applicant is recommended for admission, then they will be required to submit their official transcript to the Graduate School. International academic records must be submitted in the original language and accompanied by an official English translation. Documents must be issued by the institution with an official seal/stamp and an official signature.
5. Three Letters of Recommendation
6. Proof of English Proficiency: Applicants, whose native language is not English, or whose undergraduate instruction was not in English, must follow the Graduate School's guidelines for proof of English proficiency.

BACKGROUND EDUCATION

Preparatory coursework in plant science or a related discipline is required, while maintaining an academic average of at least 3.0 on a 4.0 scale.

PREPARATORY COURSEWORK

The minimum requirements are shown below, and any deficiencies will need to be addressed in consultation with the student's graduate committee, the graduate program manager, and the faculty director of graduate studies.

- Biological Sciences – 4 semesters
- Chemistry – 2 semesters
- Statistics – 1 semester
- Math - 1 semester

FACULTY ADVISORS

The Plant Science and Technology PhD does not support lab rotations. All students are admitted directly into a faculty member's lab. Thus, we strongly encourage applicants to contact faculty members who work in their areas of interest before and during the application and admissions process.

FUNDING

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GRADUATE SCHOOL RESOURCES

The Bursar's Office provides information about tuition and fees associated with being a graduate student. Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

The vast majority of our graduate students are awarded research assistantships (RA) to fund their education. These RA appointments come with tuition remission, healthcare, and a monthly stipend for living expenses. These assistantships come directly from the mentoring faculty; as a result, space in our graduate program is extremely limited. We do not support lab rotations.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum degree requirements (https://guide.wisc.edu/graduate/#requirementstext) and policies (https://guide.wisc.edu/graduate/#policiestext), 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
Overall Graduate GPA requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).
Other Grade Requirements	n/a
Assessments and Examinations	Students must prepare and defend a written research proposal for their thesis committee. Students must also complete an oral preliminary exam, which is administered by the thesis committee to assess knowledge in the field of Plant Science and Technology. Students must prepare and deposit a PhD thesis based on independent research, conduct a public exit seminar, and pass a final oral exam by their thesis committee.
Language Requirements	No language requirements.
Graduate School Breadth Requirement	All doctoral students are required to complete a doctoral minor or graduate/professional certificate. Refer to the Graduate School: Breadth Requirement in Doctoral Training policy: https://policy.wisc.edu/library/UW-1200 (https://policy.wisc.edu/library/UW-1200/).

REQUIRED COURSES

Code	Title	Credits
Plant Science and Technology Foundation		
PLANTSCI 720	Physiology of Plant Production	3
Seminar Requirement		
Students must complete a minimum of 3 credits to satisfy the seminar requirement.		3
PLANTSCI 920	Seminar in Plant Science and Technology	
Statistics Requirement		
STAT/F&W ECOL 571	Statistical Methods for Bioscience I	4
STAT/ F&W ECOL 572	Statistical Methods for Bioscience II	4
or AN SCI 865	Design and Analysis of Biological Studies	
Research Requirement		
Students must complete at least 8 credits of research.		
PLANTSCI 990	Research	1-12
Plant Science and Technology Breadth		
Students must complete at least 6 credits to satisfy the Plant Science and Technology Breadth requirement. Courses will be selected to meet the student's specific educational needs as determined through consultation with the student's advisor and members of their committee. This may come from elective courses and some common elective courses are listed below.		6
BSE 305	Introduction to Precision Agriculture	
PLANTSCI 310	Plant Science and Technology in Cropping Systems	
PLANTSCI/A A E/ PL PATH 367	Introduction to Organic Agriculture: Production, Markets, and Policy	
AGROECOL 370	Grassland Ecology	
AGROECOL 377	Global Food Production and Health	
PLANTSCI/ ATM OCN 532	Environmental Biophysics	

AGROECOL/ ENVIR ST 724	Agroecosystems and Global Change	
Graduate School Breadth Requirement		
In consultation with advisor, students will select the appropriate plan of coursework to meet this requirement.		9
Additional Coursework		
The remainder of the coursework to meet the minimum credit requirement and graduate coursework requirement for the PhD in Plant Science and Technology will be selected to meet the student's specific educational needs as determined through consultation with their advisor and members of their committee.		14
Total Credits		**51**

POLICIES

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GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) serve as the official document of record for Graduate School academic and administrative policies and procedures and are updated continuously. Note some policies redirect to entries in the official UW-Madison Policy Library (https://policy.wisc.edu/). Programs may set more stringent policies than the Graduate School. Policies set by the academic degree program can be found below.

MAJOR SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Credits Earned at Other Institutions

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Undergraduate Credits Earned at Other Institutions or UW-Madison

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Credits Earned as a Professional Student at UW-Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Credits Earned as a University Special Student at UW–Madison

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

PROBATION

Refer to the Graduate School: Probation (https://policy.wisc.edu/library/UW-1217/) policy.

ADVISOR / COMMITTEE

Refer to the Graduate School: Advisor (https://policy.wisc.edu/library/UW-1232/) and Graduate School: Committees (Doctoral/Master's/MFA) (https://policy.wisc.edu/library/UW-1201/) policies.

CREDITS ALLOWED PER TERM

15 credit maximum. Refer to Graduate School: Maximum Credit Loads and Overload Requests (https://policy.wisc.edu/library/UW-1228/) policy.

TIME LIMITS

Refer to the Graduate School: Time Limits (https://policy.wisc.edu/library/UW-1221/) policy.

GRIEVANCES AND APPEALS

College of Agricultural and Life Sciences: Grievance Policy

In the College of Agricultural and Life Sciences (CALS), any student who feels unfairly treated by a member of the CALS faculty or staff has the right to complain about the treatment and to receive a prompt hearing. Some complaints may arise from misunderstandings or communication breakdowns and be easily resolved; others may require formal action. Complaints may concern any matter of perceived unfairness.

To ensure a prompt and fair hearing of any complaint, and to protect the rights of both the person complaining and the person at whom the complaint is directed, the following procedures are used in the College of Agricultural and Life Sciences. Any student, undergraduate or graduate, may use these procedures, except employees whose complaints are covered under other campus policies.

1. The student should first talk with the person at whom the complaint is directed. Most issues can be settled at this level. Others may be resolved by established departmental procedures.
2. If the student is unsatisfied, and the complaint involves any unit outside CALS, the student should seek the advice of the dean or director of that unit to determine how to proceed.
   a. If the complaint involves an academic department in CALS the student should proceed in accordance with item 3 below.
   b. If the grievance involves a unit in CALS that is not an academic department, the student should proceed in accordance with item 4 below.
3. The student should contact the department's grievance advisor within 120 calendar days of the alleged unfair treatment. The departmental administrator can provide this person's name. The grievance advisor will attempt to resolve the problem informally within 10 working days of receiving the complaint, in discussions with the student and the person at whom the complaint is directed.
   a. If informal mediation fails, the student can submit the grievance in writing to the grievance advisor within 10 working days of the date the student is informed of the failure of the mediation attempt by the grievance advisor. The grievance advisor will provide a copy to the person at whom the grievance is directed.
   b. The grievance advisor will refer the complaint to a department committee that will obtain a written response from the person at whom the complaint is directed, providing a copy to the student. Either party may request a hearing before the committee. The grievance advisor will provide both parties a written decision within 20 working days from the date of receipt of the written complaint.
   c. If the grievance involves the department chairperson, the grievance advisor or a member of the grievance committee, these persons may not participate in the review.
   d. If not satisfied with departmental action, either party has 10 working days from the date of notification of the departmental committee action to file a written appeal to the CALS Equity and Diversity Committee. A subcommittee of this committee

will make a preliminary judgement as to whether the case merits further investigation and review. If the subcommittee unanimously determines that the case does not merit further investigation and review, its decision is final. If one or more members of the subcommittee determine that the case does merit further investigation and review, the subcommittee will investigate and seek to resolve the dispute through mediation. If this mediation attempt fails, the subcommittee will bring the case to the full committee. The committee may seek additional information from the parties or hold a hearing. The committee will present a written recommendation to the dean who will provide a final decision within 20 working days of receipt of the committee recommendation.

4. If the alleged unfair treatment occurs in a CALS unit that is not an academic department, the student should, within 120 calendar days of the alleged incident, take his/her grievance directly to the Associate Dean of Academic Affairs. The dean will attempt to resolve the problem informally within 10 working days of receiving the complaint. If this mediation attempt does not succeed the student may file a written complaint with the dean who will refer it to the CALS Equity and Diversity Committee. The committee will seek a written response from the person at whom the complaint is directed, subsequently following other steps delineated in item 3d above.

OTHER

n/a

PROFESSIONAL DEVELOPMENT

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GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

PROGRAM RESOURCES

The Plant Science and Technology program does not require but encourages all students to complete an Individual Development Plan (IDP). As you begin your Graduate School career, an Individual Development Plan (IDP) is an essential tool to help you:

(1) Assess your current skills and strengths

(2) Make a plan for developing skills that will help you meet your academic and professional goals

(3) Communicate with your advisors and mentors about your evolving goals and related skills.

For graduate students in the natural sciences and engineering, the American Association for the Advancement of Science (AAAS) online tool provides a comprehensive set of materials and exercises that will guide you through the process of self-assessment, career exploration, goal-setting, and implementation of your plan. Set up a free account to create and monitor your IDP at myidp.sciencecareers.org (http://myidp.sciencecareers.org/).

The UW–Madison IDP template (https://grad.wisc.edu/professional-development/individual-development-plan/), which includes instructions and examples, is flexible and appropriate for all disciplines.

LEARNING OUTCOMES

LEARNING OUTCOMES

1. Understand essential characteristics of plant agricultural systems.
2. Apply principles of plant physiology in the context of agricultural systems.
3. Communicate scientific ideas and results with clarity in written and oral formats.
4. Discuss the potential impacts of their research on human society and the environment.
5. Conduct research with scientific integrity and independence that advances the field of Plant Science and Technology.