AGRONOMY, BS

Admissions to the Agronomy BS will be suspended as of summer 2026 and will be discontinued as of fall 2030. If you have any questions, please contact the department.

Students interested in the Agronomy BS may be interested in the Plant Science and Technology BS, a new major as of fall 2025 or the Agroecology BS (https://guide.wisc.edu/undergraduate/agricultural-life-sciences/plant-agroecosystem-sciences/agroecology-bs/), a new major as of fall 2024.

Creating a healthier, more productive, more resilient agriculture for Wisconsin and the world.

That is the challenge taken up by the faculty, staff, and students of the agronomy program in the Department of Plant and Agroecosystem Sciences.

We generate and apply knowledge about the plants that feed and benefit humankind. Agronomic crops are typically grown for grain to feed people and livestock, or are processed into products. Feed crops are grown specifically to meet the nutritional needs of livestock. Forage crops are grown for their stems, leaves, and other edible plant parts.

We find and implement solutions to problems and opportunities concerning efficiency and sustainability of crop production and in safe and environmentally sound ways.

We generate knowledge on the genetics, genomics, biochemistry, and physiology of plants.

We study the interactions among cropping systems, climate, and the environment. We emphasize sustainable agriculture, whether precision, traditional or organic, in order to reduce the impact on the environment and the inhabitants of our planet.

We work to ensure that agricultural systems and products in Wisconsin and the world are able to meet rapidly-changing needs and those of future generations.

Undergraduates in the agronomy program earn a bachelor of science degree to prepare them for everything from pursuit of a graduate degree to careers in science, education, agriculture, agribusiness, and environment and conservation.

HOW TO GET IN

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Requirements	Details
How to get in	No application required. All students who meet the requirements listed below are eligible to declare. For information on how to declare, visit Advising & Careers.
Courses required to get in	None
GPA requirements to get in	None
Credits required to get in	Must have fewer than 86 credits.
Other	Students who do not meet the requirements above or are not in good academic standing should schedule a meeting with CALS Dean on Call (https://go.wisc.edu/g85h79 (https://go.wisc.edu/g85h79/)) to discuss exceptions.

PROSPECTIVE UW-MADISON STUDENTS

All prospective UW–Madison students must apply through the Office of Admissions and Recruitment (https://www.admissions.wisc.edu/).

Students interested in this major should select it as the first choice major on their UW–Madison application. Admitted students who enroll at UW-Madison and attend Student Orientation, Advising, and Registration (SOAR) with the College of Agricultural and Life Sciences have the option to declare this major at SOAR. More information is available here (https://cals.wisc.edu/academics/undergraduate/future-students/).

Students declared in the Agronomy BS may not also declare the Plant Science and Technology BS.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin-Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (https://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext) section of the Guide.

General Education

- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Breadth—Social Studies: 3 credits
- Communication Part A & Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES REQUIREMENTS

In addition to the University General Education Requirements, all undergraduate students in CALS must satisfy a set of college and major requirements. Courses may not double count within university requirements (General Education and Breadth) or within college requirements (First-Year Seminar, International Studies, Science, and Capstone), but courses counted toward university requirements may also be used to satisfy a college and/or a major requirement; similarly, courses counted toward college requirements may also be used to satisfy a university and/or a major requirement.

COLLEGE REQUIREMENTS FOR ALL CALS BS DEGREE PROGRAMS

Code	Title	Credits
Quality of Work: Students must maintain a minimum cumulative grade point average of 2.000 to remain in good standing and be eligible for graduation.		
Residency: Students must complete 30 degree credits in residence at UW–Madison after earning 86 credits toward their undergraduate degree.		
First year seminar (https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSFirstYearSeminarCourses)		1
International studies (https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSInternationalStudiesCourses)		3
Physical science fundamentals		4-5
CHEM 103	General Chemistry I	
or CHEM 108	Chemistry in Our World	
or CHEM 109	Advanced General Chemistry	
Biological science		5
Additional science (biological, physical, or natural)		3
Science breadth (biological, physical, natural, or social)		3
CALS Capstone Learning Experience: included in the requirements for each CALS major (see "major requirements") (https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSCapstoneRequirement)		

MAJOR REQUIREMENTS

Code	Title	Credits
Mathematics and Statistics		
Complete one of the following (or may be satisfied by placement exam):		5-6
MATH 112 & MATH 113	College Algebra and Trigonometry	
MATH 114	Precalculus	
MATH 171	Calculus with Algebra and Trigonometry I	
MATH 211	Survey of Calculus 1	
MATH 221	Calculus and Analytic Geometry 1	
Complete one of the following:		3
STAT 301	Introduction to Statistical Methods	
STAT 371	Introductory Applied Statistics for the Life Sciences	
STAT/B M I 541	Introduction to Biostatistics	
STAT/ F&W ECOL 571	Statistical Methods for Bioscience I	
Chemistry		
Complete one of the following:		5-9
CHEM 103 & CHEM 104	General Chemistry I and General Chemistry II	
CHEM 109	Advanced General Chemistry	
Biology		
Complete one of the following options:		10
Option 1:		
BOTANY/ BIOLOGY 130	General Botany	
ZOOLOGY/ BIOLOGY 101	Animal Biology	
ZOOLOGY/ BIOLOGY 102	Animal Biology Laboratory	
Option 2:		
BIOLOGY/ BOTANY/ ZOOLOGY 151 & ZOOLOGY/ BIOLOGY/ BOTANY 152	Introductory Biology and Introductory Biology	
Option 3:		
BIOCORE 381	Evolution, Ecology, and Genetics	
BIOCORE 382	Evolution, Ecology, and Genetics Laboratory	
BIOCORE 383	Cellular Biology	
BIOCORE 384	Cellular Biology Laboratory	
Economics		
Complete one of the following:		3-4
A A E 101	Introduction to Agricultural and Applied Economics	
ECON 101	Principles of Microeconomics	
ECON 111	Principles of Economics-Accelerated Treatment	
Foundation		

Complete 8 credits from any Foundation category (see list below)		8
Core		
Complete all of the following:		12
SOIL SCI 301 & SOIL SCI 302	General Soil Science and Meet Your Soil: Soil Analysis and Interpretation Laboratory	
PLANTSCI 110	Introduction to Plant Science and Technology	
PL PATH 300	Introduction to Plant Pathology	
Complete one of the following:		3
GENETICS 466	Principles of Genetics	
PLANTSCI 338	Plant Breeding and Biotechnology	
PLANTSCI 310	Plant Science and Technology in Cropping Systems	
Complete one of the following:		3-4
ENTOM/ ZOOLOGY 302	Introduction to Entomology	
ENTOM 351	Principles of Economic Entomology	
Complete one of the following:		3-4
AGROECOL 370	Grassland Ecology	
BOTANY/F&W ECOL 455	The Vegetation of Wisconsin	
BOTANY/F&W ECOL/ZOOLOGY 460	General Ecology	
ENVIR ST/LAND ARC 361	Wetlands Ecology	
Electives within the Major		
Complete 14 additional credits of plant science (PLANTSCI) courses [1]		14
Capstone		
PLANTSCI 510	Senior Capstone Experience	2
Total Credits		**71-79**

[1] No more than 3 credits total in PLANTSCI 299 Independent Study, PLANTSCI 399 Coordinative Internship/Cooperative Education, PLANTSCI 699 Special Problems. Credits used to satisfy the capstone experience may not count here.

FOUNDATION COURSES

AG SOCIAL SCIENCE

Code	Title	Credits
A A E 319	The International Agricultural Economy	3
A A E 320	Agricultural Systems Management	3
A A E 322	Commodity Markets	4
A A E 323	Cooperatives and Alternative Forms of Enterprise Ownership	3
A A E/ECON 421	Economic Decision Analysis	4
A A E/ECON 474	Economic Problems of Developing Areas	3
C&E SOC/SOC 140	Introduction to Community and Environmental Sociology	4
C&E SOC/SOC 222	Food, Culture, and Society	3
C&E SOC/ AMER IND/SOC 578	Poverty and Place	3
C&E SOC/SOC 650	Sociology of Agriculture	3

ANIMAL SCIENCE

Code	Title	Credits
AN SCI/DY SCI 101	Introduction to Animal Sciences	3
AN SCI 200	The Biology and Appreciation of Companion Animals	3
AN SCI/DY SCI/ NUTR SCI 311	Comparative Animal Nutrition	3
AN SCI 431	Beef Cattle Production	3
AN SCI 432	Swine Production	3
DY SCI 205	Dairy Cattle Improvement Programs	2
DY SCI/AN SCI 361	Introduction to Animal and Veterinary Genetics	2
DY SCI/AN SCI 363	Principles of Animal Breeding	2
DY SCI/AN SCI 370	Livestock Production and Health in Agricultural Development	3
DY SCI 378	Lactation Physiology	3
ENTOM/ ZOOLOGY 302	Introduction to Entomology	4
ENTOM 351	Principles of Economic Entomology	3

ATMOSPHERIC SCIENCE

Code	Title	Credits
ATM OCN 100	Weather and Climate	3
ATM OCN/ ENVIR ST 171	Global Change: Atmospheric Issues and Problems	2-3

BIOLOGICAL SYSTEMS ENGINEERING

Code	Title	Credits
BSE 301	Land Information Management	3

FOOD SCIENCE

Code	Title	Credits
FOOD SCI 120	Science of Food	3
FOOD SCI 440	Principles of Food Engineering	3
A A E/C&E SOC/ SOC 340	Issues in Food Systems	3-4
NUTR SCI/ BIOCHEM 510	Nutritional Biochemistry and Metabolism	3

MANAGEMENT

Code	Title	Credits
ACCT I S 211	Introductory Managerial Accounting	3
ACCT I S 301	Financial Reporting I	3
ACCT I S 302	Financial Reporting II	3
ACCT I S 401	Business Organizations and Negotiable Instruments	3
A A E 320	Agricultural Systems Management	3
A A E 322	Commodity Markets	4
A A E 323	Cooperatives and Alternative Forms of Enterprise Ownership	3

A A E 419	Agricultural Finance	3
A A E/ECON 421	Economic Decision Analysis	4
A A E/ECON 474	Economic Problems of Developing Areas	3
GEN BUS 301	Business Law	3
FINANCE/ ECON 300	Introduction to Finance	3
INTL BUS 200	International Business	3
MARKETNG 305	Consumer Behavior	3
MARKETNG 310	Marketing Research	3
MARKETNG/ INTL BUS 420	Global Marketing Strategy	3
MARKETNG 424	Sales Strategy and Management	3
MARKETNG 426	Strategic Retailing	3
MARKETNG 460	Marketing Strategy	3
M H R 322	Introduction to Entrepreneurship	3
M H R 420	Leading Change in Organizations	3
M H R 612	Labor-Management Relations	3
R M I 300	Principles of Risk Management	3

NUTRITIONAL SCIENCE

Code	Title	Credits
NUTR SCI 132	Nutrition Today	3
NUTR SCI/AN SCI/ DY SCI 311	Comparative Animal Nutrition	3
NUTR SCI 332	Human Nutritional Needs	3
NUTR SCI/ A A E 350	World Hunger and Malnutrition	3

SOIL SCIENCE

Code	Title	Credits
SOIL SCI/ ENVIR ST 324	Soils and Environmental Quality	3

BACTERIOLOGY, BIOCHEMISTRY, GENETICS

Code	Title	Credits
MICROBIO 101	General Microbiology	3
MICROBIO 102	General Microbiology Laboratory	2
MICROBIO 303	Biology of Microorganisms	3
MICROBIO 304	Biology of Microorganisms Laboratory	2
MICROBIO/ FOOD SCI 324	Food Microbiology Laboratory	2
MICROBIO/ FOOD SCI 325	Food Microbiology	3
BIOCHEM 501	Introduction to Biochemistry	3
GENETICS 466	Principles of Genetics	3

ECOLOGICAL SCIENCES

Code	Title	Credits
F&W ECOL/ ENVIR ST 100	Forests of the World	3
F&W ECOL 318	Principles of Wildlife Ecology	3
F&W ECOL/ BOTANY 455	The Vegetation of Wisconsin	4
F&W ECOL/ BOTANY/ ZOOLOGY 460	General Ecology	4
F&W ECOL 550	Forest Ecology	3

UNIVERSITY DEGREE REQUIREMENTS

Total Degree	To receive a bachelor's degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.
Residency	Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. "In residence" credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.
Quality of Work	Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

LEARNING OUTCOMES

LEARNING OUTCOMES

1. Articulate the role of biological processes, management systems, environmental influences, and economic and social factors on world food, feed, and fiber production. Specific topics that all students should have knowledge of include: photosynthesis, nutrient cycling, genetic inheritance, and management and uses of primary U.S. crop species.
2. Demonstrate the ability to critically and creatively analyze problems and evaluate systems.
3. Communicate effectively through writing and speaking and will be able to identify and critically evaluate available sources of information
4. Develop a global perspective and appreciate the interdependencies among individuals and their workplaces, communities, environments, and the planet; and an understanding of the role of science in society

FOUR-YEAR PLAN

FOUR-YEAR PLAN

SAMPLE AGRONOMY FOUR-YEAR PLAN

First Year

Fall	Credits	Spring	Credits
CHEM 103 or 109	4-5	BOTANY/ BIOLOGY 130	5
PLANTSCI 110	4	CHEM 104 (or Elective)	5
MATH 112, 114, or 171[1]	3-5	Elective	3

COMM A	3	ECON 101, 111, or A A E 101	4
First Year Seminar	1		
	15-18		**17**

Second Year

Fall	Credits	Spring	Credits
Foundation Course[2]	3	Foundation Courses	5
ZOOLOGY/ BIOLOGY 101 & ZOOLOGY/ BIOLOGY 102	5	Social Science Course	3
Statistics Course	3	Plant Science Course[3]	3
Ethnic Studies Course	3	COMM B	3
	14		**14**

Third Year

Fall	Credits	Spring	Credits	Summer	Credits
Plant Science Course	3	Plant Science Course	3	Internship or Independent Study	1-3
SOIL SCI 301 & SOIL SCI 302	4	GENETICS 466 or PLANTSCI 338	3		
ENTOM 351 or 302	3	International Studies Course	3		
Elective	3	Humanities Elective Course	3		
		Elective	3		
	13		**15**		**1-3**

Fourth Year

Fall	Credits	Spring	Credits
Plant Science Course	3	Plant Science Courses	6
ZOOLOGY/ BOTANY/ F&W ECOL 460	4	Electives	6
PL PATH 300	4	PLANTSCI 510	2
Humanities Course	3		
Elective	3		
	17		**14**

Total Credits 120-125

1 Determined by placement exam. Consult SOAR advisor.
2 Eight (8) credits of foundation courses required. See requirements tab for details.
3 Fourteen (14) credits of plant science electives required. See requirements tab for details.

ADVISING AND CAREERS

ADVISING AND CAREERS

ADVISING

The Agronomy program is faculty-advised, meaning that faculty members take on the responsibility of guiding and advising undergraduates through graduation. Students and faculty are matched as closely as possible by interest. All new first-year and transfer students are temporarily advised by the student services coordinator until the advising relationship between professor and student is established. If you would like to have a conversation about joining Agronomy, please contact the advisor listed in the Contact Information box.

CAREERS

An Agronomy degree is an open door to careers in many related fields such as biotechnology, plant genetics, crop management, agricultural financial management, farming, seed sales, crop consulting, Certified Crop Advising, Certified Professional Agronomy, agribusiness, extension agronomy, agricultural education, government work, and international agronomy.

GENETICS

The fastest growing sector of agriculture is plant breeding, genetics, and genomics. Plant scientists are working at the field, plant, cellular, and molecular level to create cultivars that are hardier, disease resistant, nutritious, and affordable. The industry's growth is currently outstripping the rate of graduation; graduates can take their pick of interesting, fulfilling careers in the public and private sectors.

BIOFUELS

The biofuel industry is also experiencing rapid growth, with research and development being focused on sugar-based biofuels, cellulosic biofuels, and biodiesels, made from plants as varied as switchgrass, sugar cane, corn, and wood pulp. These energy crops are harvested and processed into alternatives to fossil fuels.

AGRIBUSINESS

In agribusiness, agronomists take data and translate it into real-world applications. They sell tools for crop production, provide agricultural loans, consult on crops, manage businesses, and much more. They are often responsible for translating technical research data into applications. Numerous agronomy graduates are also involved in the sale of agricultural products, which are vital to today’s economy. Other successful agronomists serve as crop advisers, farm managers, consultants, bank loan specialists, managers, and much more.

RESEARCH/EDUCATION AND EXTENSION

Agronomic educators specialize in teaching and working with high school and college students. They also teach and advise students who chose advanced studies for a master’s degree and/or PhD They are extensively involved in research, publishing findings on a regular basis and making scientific advances.

Extension agronomists usually work for a state, local, or national government; they consult with farmers and others to help find answers to their specific problems and help farmers translate research results into usable management practices. Government-employed agronomists also work with farmers and ranchers to plan for soil and water conservation so

crops and land can be managed efficiently and with minimal impact to the environment.

WISCONSIN EXPERIENCE

WISCONSIN EXPERIENCE

The following opportunities can help students connect with other students interested in agronomy, build relationships with faculty and staff, and contribute to out-of-classroom learning:

- Badger Crops Club (https://www.facebook.com/badgercropsclub/), a professional, social, and educational group for agronomy students and students in related fields interested in any aspect of crop production.
- Collegiate FFA (http://collegiateffamadison.weebly.com/), an official collegiate chapter of the National FFA organization.
- AWA (http://awamadison.org/)—the Association of Women in Agriculture, a professional student organization for young women with a passion for agriculture.
- WISELI (http://wiseli.engr.wisc.edu/)—Women in Science and Engineering Leadership Institute, a research center aiming to increase the representation, advancement, and satisfaction of women faculty and members of groups currently underrepresented on the faculty and in leadership at UW–Madison.
- Study Abroad: Agronomy majors have the opportunity to go on experiential study abroad programs, where students can immerse themselves in research or global agronomy field experiences. Students can review the International Academic Programs website (https://studyabroad.wisc.edu/) and the CALS study abroad advising page (https://cals.wisc.edu/academics/undergraduate-students/international-programs/study-abroad-advising/) for information on these and other programs, as well as requirements that can typically be fulfilled abroad and things to consider when fitting study abroad into an academic plan.
- Research/Lab experience: Students are encouraged to get involved in research, whether in the agronomy department or through other plant-, soil-, or ecology-related departments. Research can be performed for either course credit or pay, depending on the opportunity. Research opportunities can primarily be found by inquiring with faculty members.

RESOURCES AND SCHOLARSHIPS

RESOURCES AND SCHOLARSHIPS

The Agronomy program is proud to participate in the CALS Scholarship Program, which awards thousands of dollars to undergraduate scholars every year. The majority of our students have some form of financial aid through CALS, the university, or work-study or laboratory jobs.