

# 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	<ul style="list-style-type: none"> <li>• Breadth–Humanities/Literature/Arts: 6 credits</li> <li>• 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</li> <li>• Breadth–Social Studies: 3 credits</li> <li>• Communication Part A &amp; Part B *</li> <li>• Ethnic Studies *</li> <li>• Quantitative Reasoning Part A &amp; Part B *</li> </ul>
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\* 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 ( <a href="https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSThirdYearSeminarCourses">https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSThirdYearSeminarCourses</a> )	1
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International studies ( <a href="https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSThirdYearSeminarCourses">https://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSThirdYearSeminarCourses</a> )	3
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Physical science fundamentals	4-5
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CHEM 103	General Chemistry I
or CHEM 108	Chemistry in Our World
or CHEM 109	Advanced General Chemistry

Biological science	5
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Additional science (biological, physical, or natural)	3
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Science breadth (biological, physical, natural, or social)	3
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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
Foundation (p. 1)		27-33
Plant Science and Technology Core (p. 2)		22-25
Plant Science and Technology Electives (p. 2)		15
Capstone (p. 4)		2
<b>Total Credits</b>		<b>66-75</b>

### FOUNDATION

#### Mathematics

Complete one of the following (or requirement may be fulfilled through placement exam):

Code	Title	Credits
MATH 112 & MATH 113	College Algebra and Trigonometry	6
MATH 114	Precalculus	5
MATH 171	Calculus with Algebra and Trigonometry I	5

#### Statistics

Complete one of the following:

Code	Title	Credits
STAT 240	Data Science Modeling I	4
STAT 301	Introduction to Statistical Methods	3
STAT 371	Introductory Applied Statistics for the Life Sciences	3

#### Chemistry

Complete one of the following:

Code	Title	Credits
CHEM 103 & CHEM 104	General Chemistry I and General Chemistry II	9
CHEM 109	Advanced General Chemistry	5

**Biology**

Complete one of the following sequences:

**Sequence 1**

Code	Title	Credits
BIOLOGY/ BOTANY 130	General Botany	5
BIOLOGY/ ZOOLOGY 101	Animal Biology	3
BIOLOGY/ ZOOLOGY 102	Animal Biology Laboratory	2

**Total Credits** 10**Sequence 2**

Code	Title	Credits
BIOLOGY/BOTANY/ ZOOLOGY 151	Introductory Biology	5
BIOLOGY/BOTANY/ ZOOLOGY 152	Introductory Biology	5

**Total Credits** 10**Sequence 3**

Code	Title	Credits
BIOCORE 381	Evolution, Ecology, and Genetics	3
BIOCORE 382	Evolution, Ecology, and Genetics Laboratory	2
BIOCORE 383	Cellular Biology	3
BIOCORE 384	Cellular Biology Laboratory	2

**Total Credits** 10**Economics**

Complete one of the following:

Code	Title	Credits
A A E 101	Introduction to Agricultural and Applied Economics	4
ECON 101	Principles of Microeconomics	4
ECON 111	Principles of Economics- Accelerated Treatment	4

**PLANT SCIENCE AND TECHNOLOGY CORE****Plant Science**

Complete all of the following:

Code	Title	Credits
PLANTSCI 110	Introduction to Plant Science and Technology	4
PLANTSCI 310	Plant Science and Technology in Cropping Systems	4
SOIL SCI 301	General Soil Science	3

**Total Credits** 11**Genetics**

Complete one of the following:

Code	Title	Credits
GENETICS 466	Principles of Genetics	3
PLANTSCI 338	Plant Breeding and Biotechnology	3

**Systems**

Complete one of the following:

Code	Title	Credits
PL PATH 300	Introduction to Plant Pathology	4
PLANTSCI 300	Cropping Systems	3
ENTOM/ ZOOLOGY 302	Introduction to Entomology	4

**Environment**

Complete one of the following:

Code	Title	Credits
PLANTSCI 320	Environment of Cultivated Plants	3
BOTANY 500	Plant Physiology	3-4

**Technology**

Complete one of the following:

Code	Title	Credits
PLANTSCI 340	Plant Genome Engineering and Editing	3
PLANTSCI 334 & PLANTSCI 335	Greenhouse Cultivation and Greenhouse Cultivation Lab	3
BSE 305	Introduction to Precision Agriculture	3
BSE 380	Introductory Data Science for the Agricultural and Life Sciences	3

**PLANT SCIENCE AND TECHNOLOGY ELECTIVES**

Code	Title	Credits
Major Depth		9
Major Breadth		6
<b>Total Credits</b>		<b>15</b>

**Major Depth**

Complete 9 credits. A course completed to meet the Core may not count as a major depth course.

Code	Title	Credits
PLANTSCI 227	Propagation of Horticultural Plants	3
PLANTSCI/ PL PATH 262	Turfgrass Management Laboratory	1
PLANTSCI/ LAND ARC 263	Woody Landscape Plant Identification, Culture, and Use	4
PLANTSCI 300	Cropping Systems	3
PLANTSCI 302	Forage Management and Utilization	3
PLANTSCI 320	Environment of Cultivated Plants	3
PLANTSCI 340	Plant Genome Engineering and Editing	3
PLANTSCI 334	Greenhouse Cultivation	2
PLANTSCI 338	Plant Breeding and Biotechnology	3
PLANTSCI 360	Genetically Modified Crops: Science, Regulation & Controversy	2
PLANTSCI 370	World Vegetable Crops	3
PLANTSCI 376	Tropical Horticultural Systems	2
PLANTSCI 378	Tropical Horticultural Systems International Field Study	2

AGROECOL 377	Global Food Production and Health	3	COMP SCI 220	Data Science Programming I	4
DY SCI 471	Food Production Systems and Sustainability	3	F&W ECOL/ ENVIR ST 100	Forests of the World	3
PLANTSCI 501	Principles of Plant Breeding	3	F&W ECOL/ C&E SOC/SOC 248	Environment, Natural Resources, and Society	3
PLANTSCI 502	Techniques of Plant Breeding	1	F&W ECOL 300	Forest Measurements	4
PLANTSCI/ ATM OCN 532	Environmental Biophysics	3	F&W ECOL/ ENVIR ST/G L E/ GEOG/GEOSCI/ LAND ARC 371	Introduction to Environmental Remote Sensing	3
PLANTSCI 550	Molecular Approaches for Crop Improvement	3	GEN BUS 310	Fundamentals of Accounting and Finance for Non-Business Majors	3
BSE 305	Introduction to Precision Agriculture	3	GEN BUS 311	Fundamentals of Management and Marketing for Non-Business Majors	3
BSE 365	Measurements and Instrumentation for Biological Systems	3	LSC 270	Marketing Communication for the Sciences	3
BSE 380	Introductory Data Science for the Agricultural and Life Sciences	3	GENETICS 545	Genetics Laboratory	2
BSE 405	Artificial Intelligence in Agriculture	3	GEOG/ ENVIR ST 309	People, Land and Food: Comparative Study of Agriculture Systems	3
BOTANY 300	Plant Anatomy	4	GEOG/BOTANY 338	Environmental Biogeography	3
ENTOM/ ZOOLOGY 302	Introduction to Entomology	4	GEOG/ ENVIR ST 339	Environmental Conservation	4
BOTANY 500	Plant Physiology	3-4	PLANTSCI 121	Colloquium in Plant Science and Technology	1
ENTOM 351	Principles of Economic Entomology	3	PLANTSCI 234	Herbaceous Ornamental Plant Identification, Culture, and Use	4
ENTOM/BOTANY/ ZOOLOGY 473	Plant-Insect Interactions	3	PLANTSCI 240	The Science of Cannabis	1
GENETICS 466	Principles of Genetics	3	PLANTSCI/ PL PATH 261	Sustainable Turfgrass Use and Management	2
GENETICS/ BIOCHEM 631	Plant Genetics and Development	3	AGROECOL/ HIST SCI 301	(Horti)Cultural Roots: Human Histories of Plants and Science	4
PL PATH 300	Introduction to Plant Pathology	4	PLANTSCI 230	Wines and Vines of the World	2
SOIL SCI 332		3	PLANTSCI 350	Plants and Human Wellbeing	2
PL PATH 315	Plant Microbiomes	4	PLANTSCI 351	A Deeper Look at Plants and Human Wellbeing	1
PL PATH/BOTANY/ ENTOM 505	Plant-Microbe Interactions: Molecular and Ecological Aspects	3	PLANTSCI 372	Seminar in Organic Agriculture	1
PL PATH 517	Plant Disease Resistance	2-3	PLANTSCI 380	Indigenous Foodways: Food and Seed Sovereignty	2
PL PATH 559	Diseases of Economic Plants	3	LAND ARC 260	History of Landscape Architecture	3
<b>Major Breadth</b> Complete 6 credits.			PL PATH 311	Global Food Security	3
<b>Code</b>	<b>Title</b>	<b>Credits</b>	SOIL SCI 323	Soil Biology	3
A A E 319	The International Agricultural Economy	3	SOIL SCI/ ENVIR ST 324	Soils and Environmental Quality	3
A A E 320	Agricultural Systems Management	3	SOIL SCI 327	Environmental Monitoring and Soil Characterization	3
A A E 322	Commodity Markets	4	SOIL SCI/ ENVIR ST 575	Assessment of Environmental Impact	3
A A E 323	Cooperatives and Alternative Forms of Enterprise Ownership	3	SOIL SCI 585	Using R for Soil and Environmental Sciences	3
A A E 419	Agricultural Finance	3	SOIL SCI 621	Soil and Environmental Chemistry	3
A A E 422	Food Systems and Supply Chains	3			
BIOCHEM 501	Introduction to Biochemistry	3			
BSE 301	Land Information Management	3			
BOTANY 305	Plant Morphology and Evolution	4			
BOTANY 400	Plant Systematics	4			
BOTANY 401	Vascular Flora of Wisconsin	4			
BOTANY/ANTHRO/ ZOOLOGY 410	Evolutionary Biology	3			
BOTANY 422	Plant Geography	3			
BOTANY/AMER IND/ ANTHRO 474	Ethnobotany	3-4			

## CAPSTONE

Code	Title	Credits
PLANTSCI 510	Senior Capstone Experience	2
<b>Total Credits</b>		<b>2</b>

## 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.